SAIVA BHANU KSHATRIYA COLLEGE

(ARUPPUKOTTAI NADARGAL URAVINMURAI POTHU ABIVIRUTHI TRUSTUKU PATHIYAMANATHU)

Re – Accredited by NAAC with B+ Grade in the 3rd Cycle

(AFFILIATED TO MADURAI KAMARAJ UNIVERSITY)

ARUPPUKOTTAI – 626101

Course outcomes of all Programs offered

B.Sc., Mathematics		
COURSE CODE	**COURSE NAME**	**COURSE OUTCOME**
SMTPC11	**Core M1** - Algebra &Trigonometry	**CO1:** Classify and Solve reciprocal equations. **CO2:** Find the sum of binomial, exponential and logarithmic series. **CO3:** Find Eigen values, eigen vectors, verify Cayley-Hamilton theorem and diagonalize a given matrix. **CO4:** Expand the powers and multiples of trigonometric functions in terms of sine and cosine. **CO5:** Determine relationship between circular and hyperbolic functions and the summation of trigonometric series.
SMTPC12	**Core M2 -** Differential Calculus	**CO1:** Find the nth derivative, form equations involving derivatives and apply Leibnitz formula. **CO2:** Find the partial derivative and total derivative coefficient. **CO3:** Determine maxima and minima of functions of two variables and to use the Lagrange's method of undetermined multipliers. **CO4:** Find the envelope of a given family of curves. **CO5:** Find the evolutes and involutes and to find the radius of curvature using polar co-ordinates.
SMTPF11	**SEC1** Mathematics for Competitive Examination	**CO1:** Apply simplification and average skills to solve problems in competitive examinations. **CO2:** Understand the concepts of simple interest and compound interest. **CO3:** Understand the concepts of time and work. **CO4:** Use formulas to calculate profit/loss percentages and break-even points. **CO5:** Solve problems related to HCF and LCM.

SMTPS11	Foundation Course FC - Bridge Mathematics	**CO1:** Prove the binomial theorem and apply it to find the expansions of any $(x+y)^n$ and also, solve the related problems. **CO2:** Find the various sequences and series and solve the problems related to them. Explain the principle of counting. **CO3:** Find the number of permutations and combinations in different cases. Apply the principle of counting to solve the problems on permutations and combinations. **CO4:** Explain various trigonometric ratios and find them for different angles, including sum of the angles, multiple and submultiple angles, etc. Also, they can solve the problems using the transformations. **CO5:** Find the limit and derivative of a function at a point, the definite and indefinite integral of a function. Find the points of min/max of a function.
SMTPC21	**Core M3 -** Analytical Geometry (Two & Three Dimensions)	**CO1:** Find pole, polar for conics, diameters, conjugate diameters for ellipse and hyperbola. **CO2:** Find the polar equations of straight line and circle, equations of chord, tangent and normal and to find the asymptotes of hyperbola. **CO3:** Explain in detail the system of Planes. **CO4:** Explain in detail the system of Straight lines. **CO5:** Explain in detail the system of Spheres.
SMTPC22	**Core M4** - Integral Calculus	**CO1:** Determine the integrals of algebraic, trigonometric and logarithmic functions and to find the reduction formulae. **CO2:** Evaluate double and triple integrals and problems using change of order of integration. **CO3:** Solve multiple integrals and to find the areas of curved surfaces and volumes of solids of revolution. **CO4:** Explain beta and gamma functions and to use them in solving problems of integration. **CO5:** Explain Geometric and Physical applications of integral calculus.
SMTPS21	**SEC 2** Basic Data Analysis using Excel	**CO1:** Ability to analyze data using Excel. **CO2:** Ability to create basic Excel formulas and functions. **CO3:** Understand the basic concepts of using formulas in Excel. **CO4:** Ability to apply data handling functions. **CO5:** Ability to create a data chart in excel.

SMTPS22	**SEC 3(Any One)** Computational Mathematics (Scilab)	**CO1:** Develop an understanding of numerical methods for solving mathematical problems. **CO2:** Acquire knowledge of programming concepts and the basics of Scilab language. **CO3:** Apply numerical algorithms to solve mathematical problems using Scilab. **CO4:** Implement and test numerical algorithms using Scilab. **CO5:** Analyze and interpret the results of numerical differentiation and integrations.
SMTPS23	**SEC 3(Any One)** LaTex	**CO1:** Learn LaTeX. **CO2:** Typesetting Mathematics. **CO3:** Know the essential of LaTeX, Document Classes and the Overall Structure. **CO4:** Know the packages, Inputting Files, Inputting Pictures, Making a Bibliography. **CO5:** Prepare the Sample Article, Sample Report, Sample presentation and Sample Poster.
	Core M5 -Vector Calculus and Applications	**CO1:** Find the derivative of vector and sum of vectors, product of scalar and vector point function and to Determine derivatives of scalar and vector products. **CO2:** Applications of the operator 'del' and to Explain solenoidal and ir-rotational vectors. **CO3:** Solve simple line integrals. **CO4:** Solve surface integrals and volume integrals. **CO5:** Verify the theorems of Gauss, Stoke's and Green's.
	Core M6 - Differential Equations and Applications	**CO1:** Determine solutions of homogeneous equations, non-homogeneous equations of degree one in two variables, solve Bernoulli's equations and exact differential equations. **CO2:** Find the solutions of equations of first order but not of higher degree and to Determine particular integrals of algebraic, exponential, trigonometric functions and their products. **CO3:** Find solutions of simultaneous linear differential equations, linear equations of second order and to find solutions using the method of variations of parameters. **CO4:** Form a PDE by eliminating arbitrary constants and arbitrary functions, find complete, singular and general integrals, to solve Lagrange's equations. **CO5:** Explain standard forms and Solve Differential equations using Charpit's method.

	EC3 [Any One] Mathematical Statistics - Theory & Practical	**CO1:** Define sample space, events, and probability and apply the addition and multiplication laws of probability to calculate probabilities of events. **CO2:** Define random variables, probability density function, cumulative distribution function, and their properties. **CO3:** Understand and apply the Binomial, Poisson, and Normal distributions to solve real-world problems. **CO4:** Understand the concept of sampling distribution and apply the Central Limit Theorem to calculate the mean and standard deviation of the sampling distribution. **CO5:** Use the chi-square distribution, Student's t-distribution, and F-distribution to test hypotheses for small samples.
	EC3 [Any One] Programming in Java - Theory & Practical	**CO1:** Importance of Java comparing the other language. **CO2:** Develop program using constructors and its types. **CO3:** Implementing the concept Exception handling various applications. **CO4:** Analyzing different types of inheritance. **CO5:** Life Build Applet code using AWT controls and Layout managers.
	SEC 4 [Any One] E Commerce and Tally	**CO1:** Illustrate the basic concept of accounting. **CO2:** Illustrate the Tally essentials. **CO3:** Enumerate the accounting treatments in tally. **CO4:** Describe the inventory information in tally. **CO5:** Describe the extraction of report in tally.
	SEC 4 [Any One] Web Designing	**CO1:** Students will be able to design and publish their own web pages using HTML. **CO2:** Students will be able to define styles using pseudo-elements and link a style sheet to an HTML document. **CO3:** Students will be able to create web page layouts and designs using CSS, and style various elements such as background, text, and font. **CO4:** Students will be able to design and implement forms and form elements in their web pages. **CO5:** Students will be able to create a well-structured web site with appropriate titles and themes.
	SEC 5 [Any One] Statistics with R Programming	**CO1:** Analyze data using the statistical tool R. **CO2:** Create vectors, lists, matrices, arrays and data frames using R. **CO3:** Design and implement the program using data frame, list to provide the solution for various problem.

		CO4: Ability to apply statistical techniques using R Programming for decision making. **CO5:** Study about factors and tables and to solve statistical problems.
	SEC 5 [Any One] Data Analysis using SPSS	**CO1:** Relating the SPSS packages and Files. **CO2:** Use the basic functions of SPSS. **CO3:** Process data and generate statistics for some demographic variable analysis. **CO4:** Generate graphs and diagrams for data analysis. **CO5:** Process data and generate outputs using SPSS software.
	Core M7 - Industry Module – Industrial Statistics	**CO1:** Understand the need for statistical quality control techniques in industrial settings. **CO2:** Identify the causes of variation in industrial processes and products. **CO3:** Understand the importance of Time series in industrial applications. **CO4:** Understand the applications of Analysis of variance in industrial settings. **CO5:** Gain knowledge in Experimental designs.
	Core M8 - Elements of Mathematical Analysis	**CO1:** Explain in detail about sets and functions, equivalence and countability and the LUB axiom. **CO2:** Explain Sequence and Subsequence of real numbers and to find the limit of sequence to test for convergent, divergent, bounded and monotone sequences. **CO3:** Explain the operations on convergent and divergent sequences and to Explain the concepts of limit superior and limit inferior and the notion of Cauchy sequences. **CO4:** Classify the series of real numbers and the alternating series and their convergence and divergence, the conditional convergence and absolute convergence and solve problems on convergence of the sequences. **CO5:** Explain about the metric spaces and functions continuous on a Metric space.
	EC4 [Any One] Transformation Techniques	**CO1:** Find the Laplace transform for the given function. **CO2:** Find the inverse Laplace transformation for the given function. **CO3:** Solve the differential equations using Laplace transforms. **CO4:** Find the Fourier sine and cosine integrals for the given function. **CO5:** Convolute the given transformations.

	EC4 [Any One] Statistical Methods	**CO1:** Develop an understanding of the fundamental concepts and principles of statistics, including data collection, classification, and tabulation. **CO2:** Apply measures of central tendency and dispersion to analyze raw and grouped data and draw meaningful conclusions. **CO3:** Utilize correlation and regression analysis to explore relationships between variables and fit various types of curves to the data. **CO4:** Construct and interpret index numbers, including weighted and unweighted indices and chain indices. **CO5:** Understand the association of attributes and how to measure consistency, independence, and Yule's coefficient of association.
	SEC 6 [Any One] Introduction to Data Science	**CO1:** Identify the different facets of data and explain the data science process. **CO2:** Retrieve and transform data, perform exploratory data analysis, and build models. **CO3:** Evaluate and compare machine learning algorithms and apply them to real world data science problems. **CO4:** Understand the Hadoop framework and use it for big data processing. **CO5:** Explain the concepts of NoSQL databases and apply them to solve data management problems.
	SEC 6 [Any One] Mathematical Finance	**CO1:** Apply mathematical concepts and techniques to solve financial problems. **CO2:** Analyze different types of financial instruments and evaluate their risks and returns. **CO3:** Construct investment portfolios and manage risks. **CO4:** Communicate financial information effectively to stakeholders. **CO5:** Understand the ethical and professional standards in the finance industry.
	SEC 7 [Any One] Computing Mathematics	**CO1:** Understand the fundamental concepts of matrices and vector space and apply them to solve problems in physics, engineering, and computer science. **CO2:** Fit linear and nonlinear data using least square curve fitting techniques and apply them to solve real-world problems. **CO3:** Analyze and solve first and second-order differential equations using Euler's method, Modified Euler's method, and

		Runge-Kutta method. **CO4:** Apply special functions such as Bessel function, Legendre polynomial, Hermite polynomial, and improper integrals to solve mathematical problems. **CO5:** Use Fourier series expansion and Fast Fourier Transform to analyze signals and data.
	SEC 7 [Any One] Introduction to Artificial Intelligence	**CO1:** Understand the various concepts of AI Techniques. **CO2:** Understand various AI approaches. **CO3:** Understand various Search Algorithm in AI. **CO4:** Understand reasoning in AI. **CO5:** Understand Knowledge Representation in AI.
	Core M9 - Abstract Algebra	**CO1:** Explain groups, subgroups and cyclic groups. **CO2:** Explain about Normal subgroup, Quotient groups, Homomorphisms and Automorphisms and verify the functions for homomorphism and automorphism properties. **CO3:** Explain Permutation groups and apply Cayley's theorem to problems. **CO4:** Explain Rings, Ideals and Quotient Rings and examine their structure. **CO5:** Discuss about the field of quotient of an integral domain and to Explain in detail about Euclidean Rings.
	Core M10 - Real Analysis	**CO1:** Explain the concepts of Continuous and Discontinuous functions, open and close sets, Connectedness, Completeness and Compactness. **CO2:** Explain the concepts of bounded and totally bounded sets, continuity of inverse functions and Uniform continuity. **CO3:** Define the sets of measure zero, to Explain about the existence and properties of Riemann integral. **CO4:** Explain the concept of differentiability and to Explain Rolle's theorem, Law of mean, and Fundamental theorem of calculus. **CO5:** Explain the point wise and uniform convergence of sequence of function and to derive the Taylor's theorem.
	Core M11- Mathematical Modelling	**CO1:** Explain simple situations requiring Mathematical Modelling and to Determine the characteristics of such models. **CO2:** Model using differential equations in-terms of linear growth and Decay models. **CO3:** Model using systems of ordinary differential equations of first order, to discuss about various models under the categories 'Epidemics' and 'Medicine'.

		CO4: Explain in detail about difference equations. **CO5:** Model using difference equations.
	Core M12 - Project with Viva voce	The aim of the mini project is that the student has to understand the real time work place environment. The student should gain a thorough knowledge in the problem and fields which he/she has selected for their project work.
	EC5 [Any One] Introduction to Machine Learning – Theory & Practical	**CO1:** Students will gain an understanding of the basics of Machine Learning, including its applications and types. **CO2:** Students will gain knowledge of Classification and Model Selection techniques, including various distance-based Machine Learning methods. **CO3:** Students will be able to implement and evaluate Unsupervised Machine Learning techniques such as Clustering and PCA. **CO4:** Students will be able to design Machine Learning Algorithms for classification and regression tasks and evaluate their performance using relevant metrics. **CO5:** Students will be able to apply Statistical Learning Theory and Ensemble methods to improve Machine Learning algorithms' performance.
	EC5 [Any One] Programming in C - Theory & practical	**CO1:** Remember the program structure of C with its syntax and semantics. **CO2:** Understand the programming principles in C (data types, operators, branching and looping, arrays, functions, structures, pointers and files). **CO3:** Apply the programming principles learnt in real-time problems. **CO4:** Analyze the various methods of solving a problem and choose the best method. **CO5:** Code, debug and test the programs with appropriate test cases.
	EC6 [Any One] Optimization Techniques	**CO1:** Formulate and solve linear programming problems using graphical and simplex methods confidently. **CO2:** Use artificial variables techniques and the Big-M method to solve linear programming problems. **CO3:** Solve transportation problems, assignment problems, and sequencing, replacement, and theory of games problems and apply them to solve real-world problems. **CO4:** Analyze waiting line problems using single-channel and

		multi-channel models and apply them to solve real-world problems. **CO5:** Use project network diagrams and CPM/PERT techniques for project management and scheduling.
	EC6 [Any One] Discrete Mathematics	**CO1:** Able to apply the concepts of propositional Logic. **CO2:** Able to analyze and interpret predicate logic. **CO3:** Able to apply the concepts of Lattices & Boolean Algebra. **CO4:** Ability to solve problems in Combinatorics. **CO5:** Ability to apply the concepts of formal languages.
	Internship / Industrial Training	At the end of this internship programme the students will be able to • Apply theory to real life • Work as a part of team • Learn from the company experts • Learn latest trending technologies • Come out with a high morale • Enrich CV
	Core M13 - Linear Algebra	**CO1:** Acquire a detailed knowledge about vector spaces and subspaces. **CO2:** Explain the concepts of Linear Dependence, Linear Independence, Bases and Dimension of basis. **CO3:** Explain the concept of Linear Transformations, their Matrix representation and the notion of dual spaces. **CO4:** Find the Eigen values and Eigen vectors, to apply the concepts for diagonalisation. **CO5:** Explain about Inner product and norms and to apply Gram Schmidt Orthogonalization Process to problems on inner product spaces.
	Core M14 - Complex Analysis	**CO1:** Explain about analytic functions, their differentiation and continuity and to verify the Harmonic functions using analyticity conditions. **CO2: :** Explain the concept of Conformal mappings and mappings by linear transformations and linear fractional transformations. **CO3:** Explain about the integrations of functions over simply and multiply connected domains and to derive the Cauchy integral formula, Liouvlle’s theorem, Fundamental theorem of Algebra and Maximum Module Principle. **CO4:** Find the convergence the sequences and series, to derive Taylor’s and Laurent’s series.

		CO5: Find the nature of singularities, to find the residue of a given function at a given singular point, to Explain about zeros and poles and to evaluate real improper integrals (Excluding poles on the real axis).
	Core M15 - Mechanics	**CO1:** Define Resultant, Component of a Force, Coplanar forces, like and unlike parallel forces, Equilibrium of a Particle, Limiting equilibrium of a particle on an inclined plane. **CO2:** Define Moment of a force and Couple with examples. Define Parallel Forces and Forces acting along a Triangle, Solve problems on frictional forces. **CO3:** Define work, energy, power, rectilinear motions under varying forces. Define Simple Harmonic Motion and find its Geometrical representation. **CO4:** Define Projectile, impulse, impact and laws of impact. Prove that the path of a projectile is a parabola. Find the direct and oblique impact of smooth elastic spheres. **CO5:** Define central orbits, explain conic as centered orbits and solve problems related to central orbits.
	EC7 [Any One] Programming in C++ **- Theory & Practical**	**CO1:** Recalling various concepts relating to languages and applications. **CO2:** Understanding various functions of C++ language. **CO3:** Applying various classes and objects. **CO4:** Analyzing different types of inheritance system. **CO5:** Understanding working bout files and exception handling.
	EC7 [Any One] Programming in Python – **Theory & Practical**	**CO1:** Demonstrate the understanding of basic programming terminologies and packages of python language. **CO2:** Will gain knowledge on concepts and packages for data analysis, modelling, and visualization in python language. **CO3:** In depth understanding about structure and LOOP. **CO4:** In depth Understanding about OOP. **CO5:** Gain inputs in GUI programming.
	EC8 [Any One] Graph Theory and Applications	**CO1:** Be able to define and classify graphs based on various parameters such as degree, isolated and pendent vertices, and isomorphisms. **CO2:** Be able to identify and explain the properties of trees, including pendent vertices, distances and centres, rooted and binary trees, spanning trees, and fundamental circuits. **CO3:** Be able to demonstrate an understanding of the connectivity and separability of graphs, including Euler graphs, Hamiltonian paths and circuits, and the various types of cut sets.

		CO4: Be able to explain the concepts of vector spaces of a graph, and their applications. **CO5:** Be able to use matrix representation of a graph and to solve problems related to graph theory.
	EC8 [Any One] Fuzzy Sets and Applications	**CO1:** Able to identify Different Types of Fuzzy Sets. **CO2:** Able to find the union of two Fuzzy sets. **CO3:** Able to define Fuzzy complements. **CO4:** Able to Explain cylindrical Fuzzy relations. **CO5:** Able to Evaluate given decision making in Fuzzy environment.
	SEC 8 - Essential Reasoning and Quantitative Aptitude	**CO1:** Apply simplification and average skills to solve problems in competitive examinations. **CO2:** Understand the concepts of time and work. **CO3:** Understand the concepts of simple interest and compound interest. **CO4:** Understand Analogies, Coding and Decoding in Reasoning. **CO5:** Understanding Analytical reasoning and Non - verbal reasoning.
M.Sc. Mathematics		
EMTPC11	**CC1 -** Algebraic Structures	**CO1:** Recall basic counting principle, define class equations to solve problems, explain Sylow's theorems and apply the theorem to find number of Sylow subgroups. **CO2:** Define Solvable groups, define direct products, examine the properties of finite abelian groups, and define modules. **CO3:** Define similar Transformations, define invariant subspace, and explore the properties of triangular matrix, to find the index of nilpotence to decompose a space into invariant subspaces, to find invariants of linear transformation, to explore the properties of nilpotent transformation relating nilpotence with invariants. **CO4:** Define Jordan, canonical form, Jordan blocks, define rational canonical form, define companion matrix of polynomial, find the elementary devices of transformation, and apply the concepts to find characteristic polynomial of linear transformation. **CO5:** Define trace, define transpose of a matrix, explain the properties of trace and transpose, to find trace, to find transpose of matrix, to prove Jacobson lemma using the triangular form,

		define symmetric matrix, skew symmetric matrix, adjoint, to define Hermitian, unitary, normal transformations and to verify whether the transformation in Hermitian, unitary and normal.
EMTPC12	**CC2** - Real Analysis I	**CO1:** Analyze and evaluate functions of bounded variation and Rectifiable Curves. **CO2:** Describe the concept of Riemann-Stieltjes integral and its properties. **CO3:** Demonstrate the concept of step function, upper function, Lebesgue function and their integrals. **CO4:** Construct various mathematical proofs using the properties of Lebesgue integrals and establish the Levi monotone convergence theorem. **CO5:** Formulate the concept and properties of inner products, norms and measurable functions.
EMTPC13	**CC3** - Ordinary Differential Equations	**CO1:** Establish the qualitative behavior of solutions of systems of differential equations. **CO2:** Recognize the physical phenomena modeled by differential equations and dynamical systems. **CO3:** Analyze solutions using appropriate methods and give examples. **CO4:** Formulate Green‘s function for boundary value problems. **CO5:** Understand and use various theoretical ideas and results that underlie the mathematics in this course.
EMTPT11	**E1 [Any One]** Number Theory and Cryptography	**CO1:** Understand the problems in elementary number theory. **CO2:** Apply elementary number theory to Cryptography. **CO3:** Develop a deep understanding of theoretical basis of number theory and cryptography. **CO4:** Identify how number theory is related and applied in Cryptography. **CO5:** Develops the knowledge of encryption and decryption and their application in Managing the security of data.
EMTPT12	**E1 [Any One]** Graph Theory and Applications	**CO1:** Study the properties of Trees, Connectivity and Blocks with its applications. **CO2:** Discuss Euler tour, Hamiltonian cycles and its suitable applications. **CO3:** Understand the concepts of Matching‘s, Coverings and Perfect Matching‘s. **CO4:** Apply domain knowledge in Chromatic number, Brook‘s Theorem, Hajos’ Conjecture and Chromatic polynomials. **CO5:** Define Directed graphs, Directed paths and Directed cycles

		and apply results to Practical problems.
EMTPT13	**E1 [Any One]** Formal Languages and Automata Theory	**CO1:** Understand the basic properties of formal languages and grammars. **CO2:** Make grammars to produce strings from a specific language. **CO3:** Design sample Automata. **CO4:** Minimize Finite Automata and grammar of context-free languages. **CO5:** Differentiate regular, context-free and recursively enumerate languages.
EMTPT14	**E1 [Any One]** Programming in C++ and Numerical Methods	**CO1:** Understand the iterative methods for finding the roots of transcendental and algebraic equations with C++ Programme. **CO2:** Solve a system of linear algebraic equations and study Convergence of iterative methods. **CO3:** Fit a Curve for given set of data through C++ Programme. **CO4:** Approximate the polynomial by interpolation method via C++ Programme. **CO5:** Analyse Numerical Differentiation and Integration using Programming in C++.
EMTPT15	**E2 [Any One]** Lie Groups and Lie Algebras	**CO1:** Understand the definition of Lie Groups and Lie Algebras. **CO2:** Studied exponential map, The commutator, Adjoint action and Jacobi identity. **CO3:** Gained the Sub-algebras, ideals, and centre, Lie algebra of vector fields, Stabilizers and the center. **CO4:** Campbell-Hausdorff formula, Fundamental theorems of Lie theory, Complex and real forms, Example: $\boldsymbol{so}(3, \mathbb{R})$, $\boldsymbol{su}(2)$, and $\boldsymbol{sl}(2, \mathbb{C})$. **CO5:** Operations on representations, Irreducible representations, Intertwining operators and Schur lemma.
EMTPT16	**E2 [Any One]** Mathematical Programming	**CO1:** Integer Linear Programming. **CO2:** Deterministic dynamic Programming. **CO3:** Decision analysis and games. **CO4:** Simulation Modeling. **CO5:** Nonlinear Programming algorithm.

EMTPT17	**E2 [Any One]** Fuzzy Sets and their Applications	**CO1:** Crisp sets and fuzzy sets. **CO2:** Operation on Fuzzy sets. **CO3:** Fuzzy relation. **CO4:** Decision making in Fuzzy environment. **CO5:** Applications.
EMTPT18	**E2 [Any One]** Discrete Mathematics	**CO1:** Semigroups and Monoids. **CO2:** Lattices. **CO3:** Grammars and Languages. **CO4:** Boolean Algebra. **CO5:** Boolean functions.
EMTPS11/ EMTPS21	**Group G [Any One]** **SEC I-** Computational Mathematics using SageMath	**CO1:** Deal with Symbolic Variables. **CO2:** Describe the symbolic expressions and some Pitfalls. **CO3:** Demonstrates the analysis concepts. **CO4:** Solve the simultaneous equations. **CO5:** Displaying the solutions of Differential Equations.
EMTPS12 EMTPS22	**Group G [Any One]** **SEC II-** Mathematical documentation using LATEX	**CO1:** Know how to create basic types of LaTex documents (article). **CO2:** Typeset latex commands. **CO3:** Create a paragraph, symbols, comments and font style. **CO4:** Change font characteristics. **CO5:** Know about various environments.
EMTPS13/ EMTPS23	**Group G [Any One]** **SEC III-**Office Automation and ICT Tools	**CO1:** Perform basic editing functions, formatting text, copy and moving objects and text. **CO2:** Learn the formatting skills on paragraphs, tables, lists, and pages. **CO3:** Handle data in Excel spreadsheet. **CO4:** Understand the need and use of using Excel templates. **CO5:** Learn to modify presentation themes, formatting techniques and presentation styles.
EMTPS14/ EMTPS24	**Group G [Any One]** **SEC IV-**Numerical analysis using Python	**CO1:** Learn foundations of Python and numerical calculus of Python. **CO2:** Learn the linear equations and study the different elimination and iterative methods and write the Python programs to solve this linear equations. **CO3:** Obtain the solutions of nonlinear equation using different iterative methods and write the Python programs to solve this nonlinear equations. **CO4:** Define Interpolation. Methods for calculating the interpolation and write the Python programs to find the

		interpolation. **CO5:** Learn different numerical methods to solve ODE and systems of ODE and write the Python programs to solve ODE.
EMTPS15/ EMTPS25	**Group G [Any One]** **SEC V-**Differential equations using Python	**CO1:** Learn the basics of Python and write simple Python programs. **CO2:** Learn to create the single and multi-dimensional arrays, to use the linear algebra functions available in Python and packages numpy, scipy and scikits. **CO3:** Create various types of two and three dimensional graphs using Python programs. **CO4:** Solve the ODE, IVP, and BVP and delay differential equation using Python programs. **CO5:** Solve the PDE using different methods and write the program for solving PDE.
EMTPS16/ EMTPS26	**Group G [Any One]** **SEC VI-**Industrial Statistics with Minitab	**CO1:** Understand the basics of Minitab software. **CO2:** Use Tools and Techniques to analyze Industrial Problems. **CO3:** Get better views of Problems. **CO4:** Produce Visual Solutions. **CO5:** Make use of Minitab to arrive better Decisions.
EMTPC21	**CC4 -** Advanced Algebra	**CO1:** Prove theorems applying algebraic ways of thinking. **CO2:** Connect groups with graphs and understanding about Hamiltonian graphs. **CO3:** Compose clear and accurate proofs using the concepts of Galois Theory. **CO4:** Bring out insight into Abstract Algebra with focus on axiomatic theories. **CO5:** Demonstrate knowledge and understanding of fundamental concepts including extension fields, Algebraic extensions, Finite fields, Class equations and Sylow‘s theorem.
EMTPC22	**CC5 -** Real Analysis II	**CO1:** Understand and describe the basic concepts of Fourier series and Fourier integrals with respect to orthogonal system. **CO2:** Analyze the representation and convergence problems of Fourier series. **CO3:** Analyze and evaluate the difference between transforms of various functions. **CO4:** Formulate and evaluate complex contour integrals directly and by the fundamental theorem. **CO5:** Apply the Cauchy integral theorem in its various versions to compute contour integration.

EMTPC23	**CC6 -** Partial Differential Equations	**CO1:** To understand and classify second order equations and find general solutions. **CO2:** To analyse and solve wave equations in different polar coordinates. **CO3:** To solve Vibrating string problem, Heat conduction problem, to identify and solve Laplace and beam equations. **CO4:** To apply maximum and minimum principle‛s and solve Dirichlet, Neumann problems for various boundary conditions. **CO5:** To apply Green‛s function and solve Dirichlet, Laplace problems, to apply Helmholtz operation and to solve Higher dimensional problem.
EMTPT21	**E3 [Any One]** Algebraic Topology	**CO1:** Geometric Complexes and Polyhedra. **CO2:** Simplicial Homology Groups. **CO3:** Simplicial Approximation. **CO4:** The Fundamental Group. **CO5:** Covering spaces.
EMTPT22	**E3 [Any One]** Mathematical Statistics	**CO1:** Sample Moments and their functions. **CO2:** Limit distribution of sample moments. **CO3:** Limit distribution of sample quantiles. **CO4:** An Outline of the Theory of Runs. **CO5:** Significance Test.
EMTPT23	**E3 [Any One]** Statistical Data Analysis using R Programming	**CO1:** The Comprehensive R Archive Network. **CO2:** Essentials of the R Language. **CO3:** Graphics, Plots with two variables. **CO4:** Probability functions. **CO5:** Discrete probability distributions.
EMTPT24	**E3 [Any One]** Tensor Analysis and Relativity	**CO1:** Cartesian Tensor. **CO2:** Tensor in Physics. **CO3:** Tensor in Analytic Solid Geometry. **CO4:** General Tensor. **CO5:** Tensor in Relativity.
EMTPT25	**E4 [Any One]** Wavelets	**CO1:** Understand Wavelets and to make use of the tools of Fourier Analysis. **CO2: C**haracterize the smoothness of functions using wavelets. **CO3:** Understand Haar Wavelet Expansions and to construct general wavelets. **CO4:** Develop a systematic method to produce orthonormal wavelets. **CO5:** Understand scaling functions along with convergence properties and speed of convergence.

EMTPT26	**E4 [Any One]** Modelling and Simulations with Excel	**CO1:** Understand a model‘s structure, its capabilities, and its underlying assumptions. **CO2:** Deal models in various forms and to understand the visual models of the behaviour of a system. **CO3:** Perform data analysis on both quantitative and qualitative data leading to models of general and specific behaviour. **CO4:** Understand the critical role of Excel in the early or rapid prototyping of problems. **CO5:** Construct a useful and thoroughly conceived simulation model.
EMTPT27	**E4 [Any One]** Machine Learning and Artificial Intelligence	**CO1:** Understand the AI Foundations. **CO2:** Deal with Data. **CO3:** Work with Data in an AI project. **CO4:** Construct Machine Learning Algorithms. **CO5:** Understand Deep learning.
EMTPT28	**E4 [Any One]** Neural Networks	**CO1:** Understand the Basics of Artificial Neural Networks. **CO2:** Understand the Basic Learning Laws and Activation Dynamic Models. **CO3:** Deal with Pattern Recognition Problems. **CO4:** Analyze Feed forward Neural Networks, Pattern Association Networks and Pattern Classification Networks. **CO5:** Deal with Feedback Neural Networks, Linear Auto associative FF Networks and Analysis of Pattern Storage Networks.
	CC7 - Complex Analysis	**CO1:** Analyze and evaluate local properties of analytical functions and definite integrals. **CO2:** Describe the concept of definite integral and harmonic functions. **CO3:** Demonstrate the concept of the general form of Cauchy‘s theorem. **CO4:** Develop Taylor and Laurent series. **CO5:** Explain the infinite products, canonical products and Jensen‘s formula.
	CC8 - Probability Theory	**CO1:** To define Random Events, Random Variables, to describe Probability, to apply Bayes, to define Distribution Function, to find Joint Distribution function, to find Marginal Distribution and Conditional Distribution function, to solve functions on random variables. **CO2:** To define Expectation, Moments and Chebyshev Inequality, to solve Regression of the first and second types.

		CO3: To define Characteristic functions, to define distribution function, to find probability generating functions, to solve problems applying characteristic functions. **CO4:** To define One point, two-point, Binomial distributions, to solve problems of Hyper geometric and Poisson distributions, to define Uniform, normal, gamma, Beta distributions, to solve problems on Cauchy and Laplace distributions. **CO5:** To discuss Stochastic convergence, Bernaulli law of large numbers, to elaborate Convergence of sequence of distribution functions, to prove Levy-Cramer Theorems and de Moivre-Laplace Theorems, to explain Poisson, Chebyshev, Khintchine Weak law of large numbers, to explain and solve problems on Kolmogorov Inequality and Kolmogorov Strong Law of large numbers.
	CC9 – Topology	**CO1:** Define and illustrate the concept of topological spaces and the basic definitions of open sets, neighbourhood, interior, exterior, closure and their axioms for defining topological space. **CO2:** Understand continuity, compactness, connectedness, homeomorphism and topological properties. **CO3:** Analyze and apply the topological concepts in Functional Analysis. **CO4:** Ability to determine that a given point in a topological space is either a limit point or not for a given subset of a topological space. **CO5:** Develop qualitative tools to characterize connectedness, compactness, second countable, Hausdorff and develop tools to identify when two are equivalent (homeomorphic).
	CC9 – INDUSTRIAL STATISTICS	**CO1:** Understand Random Variables, Distribution, Density function and Conditional distribution. **CO2:** Understand the function of one random variables, Distribution of functions, Mean, Variance of function. **CO3:** Define the Bivariate Distribution, one function of two random variables and two functions of two random variables. **CO4:** Study the Joint Moments, Joint Characteristic functions, and Conditional Distribution and Conditional Expected values. **CO5:** Describe the concept -Sequence of Random Variable.
	E5 [Any One] Algebraic Number Theory	**CO1:** Understand the concept of Modules. **CO2:** Deal with algebraic integers and its applications. **CO3:** Understand the concept of Quadratic fields and cyclotomic fields.

		CO4: learn Ramanujan-Nagell Theorem. **CO5:** Understand Prime Factorization of Ideals.
	E5 [Any One] Fluid Dynamics	**CO1:** Understand the basic properties and principles of viscous and non-viscous fluids. **CO2:** Derive and deduce the consequences of the governing equations of fluids. **CO3:** Solve kinematics problems such as finding particle paths and streamlines. **CO4:** Understand the basic theorems of fluid mechanics and its applications. **CO5:** Derive the boundary layer equations of some basic flows and its solutions.
	E5 [Any One] Stochastic Processes	**CO1:** Acquire in-depth knowledge about stationary stochastic processes and Markov chains. **CO2:** Proficient in Markov Process with discrete state space. **CO3:** Proficient in Markov processes with continuous state space. **CO4:** Proficient in Branching processes and age dependent branching process. **CO5:** Proficient in solving stochastic processes in queuing systems.
	E5 [Any One] Mathematical Python - I	**CO1:** Appreciate the importance and features of Python. **CO2:** Define and classify functions. **CO3:** Understand the use and application of iterators. **CO4:** Understand how to create a class in Python. **CO5:** Differentiate between inheritance and composition.
	CC11–Functional Analysis	**CO1:** Understand the Banach spaces and Transformations on Banach Spaces. **CO2:** Prove Hahn Banach theorem and open mapping theorem. **CO3:** Describe operators and fundamental theorems. **CO4:** Validate orthogonal and orthonormal sets. **CO5:** Analyze and establish the regular and singular elements.
	CC12 - Differential Geometry	**CO1:** Explain space curves, Curves between surfaces, metrics on a surface, fundamental form of a surface and Geodesics. **CO2:** Evaluate these concepts with related examples. **CO3:** Compose problems on geodesics. **CO4:** Recognize applicability of developable. **CO5:** Construct and analyze the problems on curvature and minimal surfaces.

	CC13 - Mechanics	**CO1:** Demonstrate the knowledge of core principles in mechanics. **CO2:** Interpret and consider complex problems of classical dynamics in a systematic way. **CO3:** Apply the variation principle for real physical situations. **CO4:** Explore different applications of these concepts in the mechanical and electromagnetic fields. **CO5:** Describe and apply the concept of Angular momentum, Kinetic energy and Moment of inertia of a particle.
	E6 [Any One] Algebraic Geometry	**CO1:** Analyze and evaluate Affine and Projective algebraic sets. **CO2:** Describe the concept of Morphism integral and standard embeddings. **CO3:** Demonstrate the concept Rational Maps. **CO4:** Construct Jacobian Criterion and Jacobian Conjecture. **CO5:** Formulate the Intersections in projective space.
	E6 [Any One] Financial Mathematics	**CO1:** Analyze Brownian motion and evaluate stochastic integrals. **CO2:** Describe the concept Financial market basis. **CO3:** Demonstrate the finite market model and incomplete markets. **CO4:** Construct Black Scholes model. **CO5:** Formulate the Multi-dimensional Black Scholes model.
	E6 [Any One] Resource Management Techniques	**CO1:** Analyze Critical Path Calculation. **CO2:** Describe the simplex method using the restricted basis. **CO3:** Demonstrate the Two person zero-sum game and finding the optimal solutions. **CO4:** Construct Karush-Kuhn-Tucker conditions. **CO5:** Formulate the Non-linear programming.
	E6 [Any One] Mathematical Python - II	**CO1:** Implement operator overloading for complex numbers and fractions. **CO2:** Use try/except and manually throw exceptions. **CO3:** Create uni-dimensional and multi-dimensional arrays. **CO4:** Create three dimensional plots using MATPLOTLIB. **CO5:** Understand the concept of clipping.

B.Com. with Computer Applications

SEMESTER	COURSE CODE	COURSE NAME	COURSE OUTCOMES
I	TCAPC11	BUSINESS FINANCE	**CO1**: Explain important finance concepts **CO2**: Estimate risk and determine its impact on return

			CO3: Explore leasing and other sources of finance for startups **CO4**: Summarise cash receivable and inventory management techniques **CO5**: Evaluate techniques of long term investment decision incorporating risk factor
I	TCAPC12	DIGITAL MAKETING	**CO1**: Explain the dynamics of digital marketing **CO2**: Examine online marketing mix **CO3**: Compare digital media channels **CO4**: Interpret online consumer behavior **CO5**: Analyse social media data
I	TCAPC13	BANKING & INSURANCE	**CO1**: Relate the transformation in banking from traditional to new age **CO2**: Apply modern techniques of digital banking **CO3**: Evaluate the role of insurance sector **CO4**: Examine the regulatory mechanism **CO5**: Assess risk mitigation strategies
I	TCAPT11	INTRODUCTION TO INDUSTRY 4.0	**CO1**: Discuss on the change from industry 1.0 to 4.0 **CO2**: Discover the challenges and future prospects of applying artificial intelligence **CO3**: Apply big data for industrial growth and development **CO4**: Apply IoT in various sectors like Manufacturing, Healthcare, Education, Aerospace and Défense **CO5**: Appraise why education has to be aligned with industry 4.0
I	TCAPT13	ENTERPRISE RESOURCE PLANNING	**CO1**: Recall the history and growth of ERP **CO2**: Appraise the risks involved while using ERP **CO3**: Select from among various ERP technologies **CO4**: Analyse the dynamics of ERP marketplace **CO5**: Distinguish and choose appropriate ERP solutions or packages
II	TCAPC21	STRATEGIC COST MANAGEMENT	**CO1**: Discuss strategic cost management and QC **CO2**: Choose the appropriate technique for cost control **CO3**: Utilise activity based costing in practice **CO4**: Adopt transfer pricing methods **CO5**: Build cost structure for Agriculture and IT sector
II	TCAPC22	CORPORATE ACCOUNTING	**CO1**: Prepare Financial Statements of companies as per schedule III of Companies Act, 2013

			CO2: Apply the provisions of IRDA Regulations, 2002 in the preparation of final accounts of Life Insurance and General Insurance Companies. **CO3**: Prepare Consolidated Financial Statements of Holding Companies in accordance with AS21 **CO4**: Assess contemporary accounting methods **CO5**: Examine Financial Reporting based on appropriate Accounting Standards and provisions of Companies Act 2013 with respect to Corporate Social Responsibility
II	TCAPC23	SETTING UP OF BUSINESS ENTITIES	**CO1**: Build a startup and acquire finance **CO2**: Comply with the legal requirements for Section 8 Company **CO3**: Initiate the proceedings for LLP **CO4**: Illustrate the registration and licensing procedure **CO5**: Examine the compliance of regulatory framework
II	TCAPT21	DATA MINING & DATA WARESHOUSING	**CO1**: Explain the basic concepts, principles and need of data warehousing **CO2**: Appraise data warehouse architecture, modelling and its implementation. **CO3**: Choose various steps in implementing data mart and its dimensions **CO4**: Recall the features and types of data mining **CO5**: Apply various data mining tools and techniques
II	TCAPT23	MANAGEMENT INFORMATION	**CO1**: Identify the basic concept of Information system **CO2**: Discuss the importance of MIS **CO3**: Explain the functional MIS **CO4**: Describe the role of system analyst **CO5**: Apply the concept of Enterprise resource planning
III		TAXATION	**CO1**: Estimate taxable income **CO2**: File returns and plan taxes **CO3**: Illustrate the nuances of international business taxation **CO4**: Apply the provisions of GST **CO5**: Assess the provisions of Customs Act
III		RESEARCH METHODOLOGY	**CO1**: Recall the research concepts and recognise the research problem **CO2**: Formulate research hypothesis and determine the sample size **CO3**: Select appropriate method for data collection

			CO4: Make inferences based on statistical tests **CO5**: Draft a research report avoiding plagiarism
III		COMPUTER IN BUSINESS	**CO1**: Create data file in SPSS **CO2**: Examine Means of samples **CO3**: Conduct non-parametric tests **CO4**: Create a company, form groups and get automated financial statements **CO5**: Automate inventory management and GST filing
III		PYTHON AND R FOR DATA ANALYTICS	**CO1**: Describe the basics of Python **CO2**: Explain the necessity for programming in biology **CO3**: Apply R programming **CO4**: Discuss Data handling **CO5**: Apply R in Phylogenetics
III		INTERNATIONAL BUSINESS	**CO1**: Recall the concepts of International Business and International Business Environment **CO2**: Analyze different theories of International Business **CO3**: Evaluate the legal procedures involved in International Business. **CO4**: Explain the different types of economic integrations. **CO5**: Identify the operations of MNCs through real case assessment
IV		CORPORATE AND ECONOMIC LAWS	**CO1**: Recall important provisions of FEMA **CO2**: Evaluate the provisions of the Competition Act, 2002 and Consumer Protection Act to govern commercial competition and protect a consumer **CO3**: Recall the process relating to obtaining copyrights and patents. **CO4**: Examine the provisions of Money Laundering Act **CO5**: Examine the provisions of Money Laundering Act
IV		HUMAN RESOURCE ANALYTICS	**CO1**: Examine the concept of human resource analytics **CO2**: Apply the HR tools and techniques in decision making **CO3**: Examine the different types of HR metrics and their relative merits **CO4**: Collect and transform data leading to HR reporting **CO5**: Build models for predictive analysis

IV		INTERNATIONAL BUSINESS	**CO1**: Recall the concepts of International Business and International Business Environment **CO2**: Analyze different theories of International Business **CO3**: Evaluate the legal procedures involved in International Business. **CO4**: Explain the different types of economic integrations. **CO5**: Identify the operations of MNCs through real case assessment
IV		CYBER AND DATA SECURITY	**CO1**: Develop plans to mitigate risks and threats to cybersecurity **CO2**: Solve vulnerabilities in cybersecurity frameworks **CO3**: Solve issues in integrity issues in cybersecurity **CO4**: Implement radical changes in cybersecurity management **CO5**: Formulate strategies to overcome cybersecurity disasters
IV		E-COMMERCE	**CO1**: Understand the hardware and software of a system **CO2**: Apply the functions of Windows operating system **CO3**: Apply the advance functions of MS word **CO4**: Apply the functions of MS excel **CO5**: Understand the concept of E-Commerce and Electronic payments

Bachelor of Commerce

COURSE CODE	**COURSE NAME**	**COURSE OUTCOME**	
CCRPC11	Financial Accounting – I	**CO1**	Remember the concept of rectification of errors and Bank reconciliation statements
		CO2	Apply the knowledge in preparing detailed accounts of sole trading concerns
		CO3	Analyze the various methods of providing depreciation

		CO4	Evaluate the methods of calculation of profit
		CO5	Determine the royalty accounting treatment and claims from insurance companies in case of loss of stock.
CCRPC12	Principles of Management	**CO1**	Demonstrate the importance of principles of management.
		CO2	Paraphrasethe importance ofplanningand decision makingin an organization.
		CO3	Comprehendtheconceptofvarious authorizesandresponsibilitiesofan organization.
		CO4	EnumeratethevariousmethodsofPerformanceappraisal
		CO5	Demonstratethenotion ofdirecting, co-coordinationandcontrol inthe management.
CCRPS11	MS Office Tools	**CO1**	AcquirepracticalknowledgeinMSWord
		CO2	ConstructworksheetinMSExcelusingbasicfunctions
		CO3	ConstructExcel sheets in MSExcel usingadvanced functions
		CO4	Prepare presentations in MSPower Point using various Templates
		CO5	Createa database usingPowerpoint
CCRPF11	Fundamentals of Commerce	**CO1**	Tomakethestudentsfamiliarwiththebasicconceptsofcommerce,andManagement Fields.
		CO2	ToencourageandmotivatetheStudentsforthecommerceEducation.
		CO3	To make the students aware towards the various branches of commerce :Accounts,CommercialLawand Taxation.
CCRPC21	Financial Accounting-II	**CO1**	Toevaluatethe HirepurchaseaccountsandInstalmentsystems
		CO2	Toprepare BranchaccountsandDepartmentalAccounts
		CO3	Tounderstandtheaccountingtreatmentforadmissionandretirementin Partnership
		CO4	ToknowSettlement ofaccounts at thetime ofdissolutionof afirm.
		CO5	Toelaboratetheroleof IFRS

CCRPC22	Business Law	**CO1**	ExplaintheObjectives andsignificanceof Mercantilelaw
		CO2	UnderstandtheclausesandexceptionsofIndianContractAct.
		CO3	Outlinethecontractofindemnityand guarantee
		CO4	FamiliarwiththeprovisionrelatingtoBailmentandPledge
		CO5	Explainthe various provisionsof Sale ofGoods Act 1930
CCRPS21	Every day banking	**CO1**	Exhibit the skill to perform basic bankingoperations and distinguish between basicdocuments
		CO2	Execute online, mobilebanking and related transactions
		CO3	Exhibit the skill to perform basic bankingoperations and distinguish between basicdocuments
CCRPS22	Emotional Intelligence	**CO1**	Understanding Emotional intelligence and exhibiting skillsfor stress and angermanagement and develop self-empowerment
		CO2	Analysingpeoplebasedonpersonalityanddevelopdeepself-esteem, willpower etc.leading to swot analysis
CCRJC31	Banking Law and Practice	**CO1**	**COURSE OUTCOME**
		CO2	reach the better understandingabout banks and itsrelationship with customers.
		CO3	obtaincomplete knowledgeoncheques, materialalteration, crossingand endorsements
		CO4	getunderstandingabouttherights, duties of paymentand collecting bankers
		CO5	understand the generalprinciples of lending, Types ofadvances in business.
CCRJC32	Fundamentals of Company Law	**CO1**	Get the knowledgeoncompany’s legislation and procedures.
		CO2	understand the differentkinds of company.
		CO3	gain knowledgeto prepareaprospectus
		CO4	know themodes ofwindingup ofa company.
		CO5	learn theknowledgeofmeeting,agenda&proxyetc

CCRJC33	Financial Accounting-III	**CO1**	Get the knowledgeaboutcomputationoffireinsuranceclaims,onsequential lossand application of averageclause.
		CO2	knowabout computation of royaltyand its accountingtreatments.
		CO3	learntheknowledgeonpreparationofstatementofaffairsanddeficiency accounts of insolvencypersons and aware about self balancingsystem
		CO4	understandthebranchaccount,branchnotkeepingfullsystemofaccounting and departmental accounts, allocation of expenses
		CO5	acquirethe knowledge about accounting for hire purchase transactions includingdefaultand installment purchasesystem.
CCRJC34	Business Statistics	**CO1**	learn about meaning, Functions, Importance, Limitations of statistics, Data Collection, Sources, primary, Secondary, Techniques, Census, Sampling, Classification, Presentation, Tabulation, Diagrammatic, Graphic.
		CO2	Study about measure of central tendency and dispersion
		CO3	Understand the Skewness and Correlation and Methods of studying Skewness and correlation.
		CO4	Be aware of Regression Analysis
		CO5	Know the Analysis of Time Series, Components, Methods of determining Trend and Method of simple Average
CCRJC35	Cost Accounting	**CO1**	Learn and understand the basic cost concepts, objectives, scope, classification of cost and preparation of cost sheet.
		CO2	Get the knowledge about the various material control techniques like EOQ, Inventory turnover ratio, Pricing of material issues and the ascertainment of labour cost and various methods of remunerating labour.
		CO3	understandtheallocationandapportionmentofoverheadexpensestovarious cost centre or department and various methods of re-apportionment of service department expenses to production departments.
		CO4	Gain the knowledge about the various methods of costing like processing costing, Operating or Service costing.
		CO5	understand the concept of cost control and cost reduction and various techniques of cost reduction, concept of cost centres, profit centres, cost audit and

			financial audits.
CCRJS31	Fundamentals of Computer	**CO1**	gaintheknowledgeaboutthebasiccomponentsofthecomputerandworking of each device
		CO2	understand the representation ofdata in computer
		CO3	getcomparativeknowledgeabouttheassemblyandhighlevelprogramming language
		CO4	understand the functions of operatingsystem
		CO5	acquirethefundamentals of computer networking
CCRJC41	Business Mathematics	**CO1**	studyNumber systemsand equations
		CO2	understand Elements ofSet theory
		CO3	know theindices and logarithm
		CO4	come to know that commercial arithmetic
		CO5	be awareof determinantsand matrics
CCRJC43	Management Accounting	**CO1**	learn and understand the basic concepts of management accounting – objectives, functions, advantages, limitations andvarious tools and techniques of managementaccounting
		CO2	acquiretheconceptoffinancialstatementanalysis,techniquesusedanduse of different ratios
		CO3	understandthepreparationofcashflowstatements(asperrevisedstandardsand cash budget)
		CO4	gain the knowledge of marginal costing, concept of P/V ratio, BEP and managerial uses of marginal costing
		CO5	understand the various concepts of budgeting and budgetary control, classification and preparation ofvarious budgets
CCRJC44	Financial Accounting–IV	**CO1**	getthe knowledge about the basics of partnership accounting and maintenanceof partner capital account.
		CO2	understandthevariousaccountingtreatmentsatthetimeofadmissionofa partner
		CO3	knowthevariousaccountingtreatmentatthetimeofretirementanddeathof apartner

		CO4	understandaccountingprocedureforamalgamationandsaletofirminthe partnership firms
		CO5	learn the accounting treatment at the time of Dissolution, Insolvency of partners
CCRJC45	Service Marketing	**CO1**	understand the theoryand concept pertainingto servicemarketing
		CO2	getthe knowledgeabout Indian servicesector
		CO3	learn theskills in pricing services and servicepromotion
		CO4	understand the service sports and service intermediaries as successful services marketer
		CO5	gain the knowledge about specialization in finance, banking,health,educationtelecommunication and consult anyservices
CCRJS41	Financial Accounting–V	**CO1**	gainthe knowledgeabout the accountingof sharesissue, forfeiture and Re- issue
		CO2	understand the accountingfor different methods of redemption of debentures
		CO3	learn theaccountingforunderwritingof shares and the concept o profit or lossprior to incorporation and final accounts ofcompanies
		CO4	understand the differentmethods of valuation ofGoodwill and Shares
		CO5	understand the accountingfor amalgamation absorption andInternalReconstruction
CCRJC52	Business Law	**CO1**	understand the legal principles and concept of business law
		CO2	learn thelegal performanceof contract
		CO3	understand the special contract forthe bailment and pledge
		CO4	gettheknowledgeofvariousmethodsofcreationofagency andthetransfer of ownership
		CO5	learn therules regarding rights and duties of theseller and buyer

Subject Name: IncomeTax Law&Practice– I **Subject code: CCRJC53**

COURSE CODE	**COURSE NAME**	**COURSE OUTCOME**	
CCR8		**CO1**	learnbasicthingsofassessmentyear,previousyear,residentialstatusand capital and revenuereceipts

	IncomeTax Law&Practice–I	**CO2**	know the various exempted incomes u/s 10, 10A,10AA, 11, 12, 13, 13A
		CO3	understand the computation of income under the head salary and houseproperty
		CO4	know the computation of income under the head profits and gains from business or profession and depreciation and otherdeductions
		CO5	learnthecomputationofincomeundertheheadcapitalgainsandincome fromothersources

Subject Name: EntrepreneurshipDevelopment **Subject Code: CCRJC54**

COURSE CODE	COURSE NAME	COURSE OUTCOME	
CCR8	EntrepreneurshipDevelopment	**CO1**	understandtheconceptofentrepreneurship,meaning,importance,roleand types ofentrepreneurship
		CO2	get theknowledgeaboutthefactors affecting entrepreneurial growth and economic and non-economicfactors
		CO3	understand the institutions support to entrepreneurs from DIC,SISI, SIDCO,SIPCOT,SFC and otherinstitutions
		CO4	getthe knowledgeabout thepreparation ofproject, project identification
		CO5	understand the project appraisal, various analysis

SubjectName:Business Environment **SubjectCode:CCRJA52**

COURSE CODE	COURSE NAME	COURSE OUTCOME	
CCR8	Business Environment	**CO1**	understand the internal and external factorsaffectingbusiness
		CO2	learn the economic factorsinbusiness
		CO3	know theroleofgovernment in business

		CO4	understand the various thesocial responsibilityofbusiness
		CO5	acquiretheknowledgeonthedifferentformsofforeignprivateinvestment and globalization

Subject Name: Business Accounting **SubjectCode:CCRJN51**

COURSE CODE	**COURSE NAME**	**COURSE OUTCOME**	
CCR8	Business Accounting	**CO1**	understand the concept of book keepingandaccountancyand classification of accounts
		CO2	getknowledge about therules of book keeping and preparation ofjournal entries.
		CO3	learn about thepreparation ofvarious subsidiarybooks includingcash book
		CO4	understand the preparation ofledgeraccounts andtrial balance
		CO5	understand the preparation offinal accounts of soletraders with simple adjustments

Subject Name: Export-ImportProcedures andDocumentationSubject Code: CCRJS51

COURSE CODE	**COURSE NAME**	**COURSE OUTCOME**	
CCR8	Export-ImportProcedures andDocumentation	**CO1**	gettheknowledgeaboutthebasicsofExportandImportpolicy,itsaimsand various schemes in EXIM Policy
		CO2	understand the export procedure
		CO3	gain theknowledgeon the export documents used in export
		CO4	understand the import procedures
		CO5	know theimport documents used in import

Subject Name: LabourLaw **SubjectCode:CCRJC61**

COURSE CODE	COURSE NAME	COURSEOUTCOME	
CCR8	LabourLaw	**CO1**	understand the concept and object of industrial relation, reason for poorIndustrialrelation
		CO2	gaintheknowledgeoforiginanddevelopment ofTradeunionandroleof tradeunions inIndia
		CO3	get theknowledgeabout theIndustrial DisputeACT and its importance
		CO4	get the knowledge about the Collective Bargaining System and Factors influencingthe collectivebargainingsystem
		CO5	gaintheknowledgeofFactriesACT,Paymentof WagesACT andMinimumWages Act

Subject Name: IncomeTax Law&Practice– II **Subject code: CCRJC62**

COURSE CODE	COURSE NAME	COURSEOUTCOME	
CCR8	IncomeTax Law&Practice–II	**CO1**	learntheclubbingofincome,set-offandcarryforwardoflossesanddeductio from gross total income
		CO2	know the assessment andtaxliabilityof individual and Hindu Undivided family
		CO3	understandtheassessmentofandtaxliabilityofpartnershipfirms,Association of persons and Jointstock companies
		CO4	learn the online filingofreturns ofincomeand TDS
		CO5	gainknowledgeondeductionandcollectionoftaxatsource,advancepayment of taxand taxcreditand taxclearancecertificate

Subject Name:RetailMarketing **Subject Code: CCRJA62**

COURSE CODE	COURSE NAME	COURSE OUTCOME

CCR8	RetailMarketing	**CO1**	understand the theoryand concepts pertainingto retailingmarketing
		CO2	learn the consumer behaviourand types consumer
		CO3	know the strategies in themarketing an approaches
		CO4	acquirethe knowledgeinsupplychainmanagement
		CO5	understand the consumerismand ethics in retailing

Subject Name:FinancialMarkets and Services **Subject Code:CCRJA64**

COURSE CODE	**COURSE NAME**	**COURSE OUTCOME**	
CCR8	FinancialMarkets and Services	**CO1**	understand the financial system inIndia and its concept
		CO2	knowthefeaturesofdevelopedmoneymarket,haveknowledgeonvarious forms of moneymarket instrument
		CO3	acquirethe knowledge about thestock exchangeits functions
		CO4	learn themerchant bankingand its services includingfactoringand forfeiting
		CO5	understandthevariousformsofmutualfunds,organizationofthefundand net asset value

Subject Name:MS-officeandTally Theory **Subject Code: CCRJS61**

COURSE CODE	**COURSE NAME**	**COURSE OUTCOME**	
CCR8	MS-officeandTally Theory	**CO1**	learn to create a MS Word document with various features of word formatting,editing, pictureinsertion, tableinsertion
		CO2	gettheknowledgeon MSExcelincluding editing,inserting and deleting rows and columns , usingformula, inserting graphs
		CO3	learn creatingMS Powerpointpresentations with slide animations and effects

		CO4	knowthebasicsoftallysoftware,featuresoftally,creating ,alteringand shuttinga company
		CO5	learntheledgerandgroupcreation,tocreate,alteranddelet eavoucherand ledger entry

Subject Name:MS-officeandTally Lab **Subject Code: CCRJS6Q**

COURSE CODE	COURSE NAME	COURSE OUTCOME	
CCR8	MS-officeandTally Lab	**CO1**	create a MS Word document with various features of word formatting, editing, pictureinsertion, table insertion
		CO2	createandworkinMSExcelincludingediting,insertinga nddeletingrows and columns, usingformula, inserting graphs
		CO3	createMS Power point presentations with slide animations and effects
		CO4	create, alterand shut a company
		CO5	create various ledger andvouchers, and toentervoucher entries

Subject Name:CommercePractical **Subject Code: CCRJS6P**

COURSE CODE	COURSE NAME	COURSE OUTCOME	
CCR8	CommercePractical	**CO1**	understand the layout ofbusiness letter and various forms used in office
		CO2	gain theknowledgeof thepartnership deed andcompanystatement of affairs
		CO3	learn thepreparation ofcost sheet and its registers
		CO4	knowaboutthefillingupofanaccountofvariousformslik e,DD,chequeDeposit and moneyorders forms etc.

		CO5	get theknowledgeon thedifferent types of advertisement
		CO6	betrainedtoFillupshare&mutualfundsapplicationandcertificateforms and dividend and proxyforms etc
		CO7	learn about thefillingupofIncome tax, sales taxand refundof taxforms

Subject Name:Advertising andSalesmanship **Subject Code: CCRJN61**

COURSE CODE	COURSE NAME	COURSE OUTCOME	
CCR8	Advertising andSalesmanship	**CO1**	gainknowledgeon the basics of advertisingandcriticismagainstadvertising
		CO2	understand the various types of advertisingmedia
		CO3	know the concepts of salesmanship and criticismagainstsalesmanship
		CO4	understand the qualitiesof asuccessful salesman
		CO5	know the concept of sources and remuneration ofsalesman

MASTER OFCOMMERCE

Subject Name:BusinessFinance **Subject Code: TMCPC11**

COURSE CODE	COURSE NAME	COURSE OUTCOME	
TMCP	BusinessFinance	**CO1**	Explaintheimportantfinance concepts
		CO2	Estimateriskanddetermineitsimpacton return
		CO3	Examineleasingand othersourcesof financefor startups
		CO4	Summarizecash, receivable andinventorymanagement techniques
		CO5	Evaluate techniques of long term investment decision incorporatingriskfactor

Subject Name:Digital Marketing **Subject Code: TMCPC12**

COURSE CODE	COURSE NAME	COURSE OUTCOME	
TMCP	Digital Marketing	CO1	Explainthedynamicsofdigitalmarketing
		CO2	Examineonlinemarketingmix
		CO3	Comparedigitalmedia channels
		CO4	Explainonlineconsumerbehavior
		CO5	Analysesocialmediadata

Subject Name:Banking and Insurance **Subject Code: TMCPC13**

COURSE CODE	COURSE NAME	COURSE OUTCOME	
TMCP	Banking and Insurance	CO1	Relatethetransformationinbankingfrom traditionalto newage
		CO2	Applymodern techniques of digital banking
		CO3	Evaluatetheroleofinsurancesector
		CO4	Examinetheregulatorymechanism
		CO5	Assessriskmitigationstrategies

Subject Name:Security Analysis and Portfolio Management **Subject Code: TMCPT11**

COURSE CODE	COURSE NAME	COURSEOUTCOME	
TMCP	Security Analysis and Portfolio Management	CO1	Examineinvestment optionsand structureaportfolio
		CO2	AssessthevalueofEquityShares,PreferenceSharesand Bonds
		CO3	Examine stock performance through fundamental and technicalanalysis
		CO4	ExaminethevariousPortfolioTheories.
		CO5	Evaluatetheportfolioperformance.

Subject Name:Strategic Human Resource Management **Subject Code: TMCPT12**

COURSE CODE	COURSE NAME	COURSEOUTCOME	
TMCP	Strategic Human Resource Management	**CO1**	Recallthe fundamentals of strategic Human Resource Management
		CO2	Examine the conceptual framework of strategic Human Resource ManagementModels
		CO3	Apply the knowledge of various strategies in Human Resource Management in thecorporate arena
		CO4	Illustrate drafting of HR policies
		CO5	Analyse the latest trend in the strategic Human Resource Management.

Subject Name:Strategic Cost Management **Subject Code: TMCPC21**

COURSE CODE	COURSE NAME	COURSE OUTCOME	
TMCP	Strategic Cost Management	**CO1**	Explainstrategiccostmanagementand QC
		CO2	Choosetheappropriatetechniqueforcostcontrol
		CO3	Makeuse of activitybased costingin practice
		CO4	Choosetransferpricingmethods to solveproblems
		CO5	ConstructcoststructureforAgriculture and ITsector

Subject Name:Corporate Accounting **Subject Code: TMCPC22**

COURSE CODE	COURSE NAME	COURSE OUTCOME	
TMCP	Corporate Accounting	**CO1**	DetermineprofitandfinancialpositionbypreparingfinancialstatementsofcompaniesasperscheduleIIIofCompaniesAct,2013
		CO2	ApplytheprovisionsofIRDARegulationsinthepreparationoffinalaccountsof LifeInsuranceandGeneralInsuranceCompanies.
		CO3	DeterminetheoverallprofitabilityandfinancialpositionbypreparingconsolidatedfinancialstatementsofholdingcompaniesinaccordancewithAS21.
		CO4	Analysecontemporaryaccountingmethods
		CO5	ExamineFinancialReporting based onappropriateAccountingStandardsandprovisionsofCompaniesAct2013withrespecttoCorporateSocialResponsibility

Subject Name:Setting up of Business Entities **Subject Code: TMCPC23**

COURSE CODE	COURSE NAME	COURSE OUTCOME	
TMCP	Setting up of Business Entities	**CO1**	Comparethevariousavenuesofacquiringfinancetosetupa business entity
		CO2	Recallthelegalrequirements forSection8Company
		CO3	ExaminetheprovisionsforLLPandjoint venture
		CO4	Analysetheregistrationandlicensingprocedure
		CO5	Examinethecomplianceofregulatoryframeworkregardin genvironment

Subject Name:Auditing and Due Diligence **SubjectCode: TMCPS21**

COURSE CODE	COURSE NAME	COURSE OUTCOME	
TMCP	Auditing and Due Diligence	**CO1**	Comparedifferenttypesofaudit
		CO2	Assesstheprovisionsrelatingtosecretarialaudit
		CO3	Recallthebasicsofduediligence
		CO4	Explainthevarioustypesofduediligence
		CO5	Examineduediligencefortakeoversandpreparedue dilige nce report

Subject Name:Logistics &Supply Chain Management

SubjectCode:TMCPT24

COURSE CODE	COURSE NAME	COURSE OUTCOME	
TMCP	Logistics &Supply Chain Management	**CO1**	RecalltheconceptsandfeaturesofSCM
		CO2	SummariseglobalandIndianperspectivesofSCM
		CO3	Examinechanginglogisticsenvironmentpertainingtoma terials management,warehousinganddistribution
		CO4	ExplainstrategicwarehousingforSCM
		CO5	Outlinethe roleofinternetin SCM

Subject Name:Export and Import Documentations Subject Code: TMCPS21

COURSE CODE	COURSE NAME	COURSE OUTCOME	
TMCP	Export and Import Documentations	**CO1**	Learn Export – Import policies
		CO2	Understand Export procedures
		CO3	Prepare Export documentation
		CO4	Understand Import procedures
		CO5	Prepare Import documentation

Subject Name:AdvancedCorporate Accounting andReportingSubject Code:TMCJC31

COURSE CODE	COURSE NAME	COURSE OUTCOME	
TMC8	AdvancedCorporate Accounting andReporting	**CO1**	understandthe preparation offinal accounts of companies &corporatereporting
		CO2	knowthecalculationofprofitspriortoincorporationandvaluationofGoodwilland Shares
		CO3	knowthepreparationofaccountsofamalgamation,absorptionandreconstruction and alteration ofshare capital
		CO4	knowthepreparationofaccountsofbankingandinsurancecompaniesaspernew norms and preparetheconsolidated P&La/candBalancesheet
		CO5	understandthe accountingpricelevelchangesandHuman ResourceAccounting

Subject Name: Securityanalysis and portfoliomanagementSubject Code: TMCJC32

COURSE CODE	COURSE NAME	COURSE OUTCOME	
TMC8	Securityanalysis and portfoliomanagement	**CO1**	understand the investment management, primary market and secondary market and SEBIinIndia
		CO2	know the securityanalysis, technical analysisandequityand bonds
		CO3	know about theoptions and futures
		CO4	understandtheportfoliomanagementriskandreturnportfolioconstruction model and various theory
		CO5	gainknowledgeaboutportfolioprocessofevaluation,revisionandformula plan constant ratio and variable ratio

Subject Name: Strategic andHumanResources ManagementSubjectCode: TMCJC33

COURSE CODE	COURSE NAME	COURSE OUTCOME

TMC8	Strategic andHumanResources Management	**CO1**	understandthe meaning of Human ResourceManagement
		CO2	know theManpower planning
		CO3	understand the EmployeeMorale
		CO4	know theWorkers participation in management
		CO5	understandbeawareof theTradeunion
		CO6	know the concept ofConflict and Performanceanalysis

Subject Name:AppliedDirect TaxationandE-filing **Subject code: TMCJT31**

COURSE CODE	**COURSE NAME**	**COURSE OUTCOME**	
TMC8	AppliedDirect TaxationandE-filing	**CO1**	understand the introduction of Income Tax Act, residential status and incidenceof income for individuals, HUF, firms and companies
		CO2	know the computation oftaxable income under thevarious heads
		CO3	know the clubbing of income, set-off and carry forward of losses and deductions fromgross total income
		CO4	understandtheadvancetaxanditsvariousinstallmentsandpenaltyfornot adheringto advancetaxprovisions and TDSprovisions
		CO5	knowthevarioustypesofassessments,annualfilingofreturnsandE-filing procedure

Subject Name: InsuranceandRiskManagement **Subject code: TMCJN31**

COURSE CODE	**COURSE NAME**	**COURSE OUTCOME**	
TMC8	InsuranceandRiskManagement	**CO1**	learn thebasic concepts of risksand its types
		CO2	understandthe risk management and thestrategiesin risk management
		CO3	know about thelifeinsurance, types of policies in lifeinsurance,and annuity benefits
		CO4	acquiretheknowledgeaboutmarineinsurance,typesofpoliciesinmarine insurance
		CO5	knowaboutthefireinsuranceandreinsuranceanddoubleinsuranceconcepts of fireinsurance

Subject Name:Retail Marketing

COURSE CODE	COURSE NAME	COURSE OUTCOME	
TMCP	Retail Marketing	**CO1**	Learn concepts of Retail marketing
		CO2	Learn management services and quality in retailing
		CO3	Learn concept of Retail pricing and Retail Promotion
		CO4	Understand Methods and approaches to retail market planning
		CO5	Learn concepts of Retail marketing

Subject Name:ResearchMethodology **Subject code:TMCJC41**

COURSE CODE	COURSE NAME	COURSE OUTCOME	
TMC8	ResearchMethodology	**CO1**	acquaintwith thebasicconcepts of researchand its types
		CO2	learn theresearch process and the meaningof literaturereview, hypothesis
		CO3	know about thevarious samplingmethods and methods of data collection
		CO4	acquaintwith editing,classification, coding, tabulation
		CO5	know to writereport, characteristics, function, types and format of report

Subject Name: Operations Research **Subject code: TMCJC42**

COURSE CODE	COURSE NAME	COURSE OUTCOME	
TMC8	Operations Research	**CO1**	knowtheintroductiontoOperationsResearch,linearprogrammingandits formulation, assumptions and solutions to LPP
		CO2	understandthe transport and transshipment problems techniques
		CO3	learn the assignment andtravellingsalesman problem
		CO4	knowthequeuing theory anditsterminology,gametheory anditsvarious strategies
		CO5	understandthe network analysis– PERT / CPM and simulation techniques

Subject Name: Computerized Accounting and Office Automation

Subject Code: TMCJC43

COURSE CODE	**COURSE NAME**	**COURSE OUTCOME**	
TMC8	Computerized Accounting and Office Automation	**CO1**	understand the different types of office software used in computer and operating systems,understanduseofwordfortextediting,text formatting, pictureinsertion, alignment, mail merging
		CO2	get working knowledge on excel which includes cell editing, usage of formula and button function and drawing graphs etc.
		CO3	understand the PowerPoint presentation, insert picturetable chart, and soon
		CO4	know about thebasics oftallyandimportanceof tallyin today'scomputerizedenvironment and functions keysand short cut keys
		CO5	knowabouttheAccountingandInventoryvouchers,godowncreation.And preparefinal accounts, stock summary, cost category, daybook in tally

Subject Name:AdvancedManagement Accounting **Subject code: TMCJC44**

COURSE CODE	**COURSE NAME**	**COURSE OUTCOME**	
TMC8	AdvancedManagement Accounting	**CO1**	understandtheconceptofCostandManagementAccountingandrelationship between both
		CO2	getclearunderstandingofbreakevenanalysis,costanalysisanddecision makingprocess
		CO3	gaintheknowledgeaboutthebudgeting,budgetarycontrol, preparationof budgetand types of budget
		CO4	knowabouttheanalysisofdifferenttypesofcostingandknowledgeabout elements of costing
		CO5	understand the concept of cash flow statement

Subject Name:AppliedIndirect Taxation **Subject code: TMCJT41**

COURSE CODE	**COURSE NAME**	**COURSE OUTCOME**	
TMC8	AppliedIndirect Taxation	**CO1**	acquaintwith thebasicconcepts of various typesof indirect taxes
		CO2	learn the customs dutyand the problems in customs duty

		CO3	knowabouttheCentralGoodsandServicesTax(CGST),meaningofvalue of supply, persons eligibleto register in CGST
		CO4	gaintheknowledgeabouttheIntegratedGoodsandServicesTax(IGST), meaningof value of supply, personseligibleto register inIGST
		CO5	knowabouttheinputtaxcredit,preparationoftaxinvoiceand e-paymentof tax

B.Sc. ZOOLOGY with IMB

COURSE CODE	COURSE NAME	COURSEOUTCOME
	Development Biology	C.O 1 To understand ontogenesis, the development of animals including parthenogenesis C.O 2To study embryonic adaptations, human reproduction and reproductive technology in man. C.O 3To know about test tube babies and twins C.O 4To know about development of organs in frog
	CELL BIOLOGY	• To learn the structure and functions of various cellular components. • To understand the principles of different Microscopes. • To know about Cancer and its types, causes and diagnosis 2
	Genetics & Molecular biology	♣ To understand Mendelian principle in plant cross ♣ To study human chromosomes and syndromes. ♣ To know about DNA as a genetic material ♣ To know about Eugenics: Positive and Negative- Euthenics B. Sc. Zoology Major Part-
	Biochemistry	• To study the outline classification of carbohydrates, lipids and proteins • To understand the structure and biological importance of carbohydrates, lipids, proteins and amino acids. • To know the properties, classification, mechanism of

		enzyme action and enzyme inhibition. • To acquire knowledge about instruments in biochemistry
	MICROBIOLOGY AND IMMUNOLOGY	• To understand the bacterial classification • To acquire knowledge about the diseases caused by microbes • To know the immune system of our body • To get an idea about the Vaccines and Immunization
	Biotechnology	• To know about the tools and methods of gene transfer. • To understand the meaning of genetic engineering. • To get an idea of transgenic animals and their importance. • To acquire knowledge on tissue culture technology and transgenic plants • To study about recent advancements in biotechnology
	ANIMAL PHYSIOLOGY	• to explaining various aspects of physiological activities in animals • to know about the functions of kidney • to study about the nervous coordination system • to know about the functions of hormones 3 B.Scs
	ECOLOGY AND EVOLUTION	• To gain knowledge about the Abiotic factors. • To acquire knowledge on animal population and wild life • To know the evolutionary significance of Human • To understand the mechanism of evolution. I
	APICULTURE	• To inculcate importance of Bee keeping and Honey processing. • To encourage young learners to take up the small-scale industries after graduation. • To teach techniques of construction of Bee Hives and

		its maintenance. • To disseminate information on economic aspects of honey bee.
	SERICULTURE	• To know about the Mulberry and Non – mulberry silkworm types • To understand the mulberry cultivation and silkworm rearing • To acquire knowledge about silk reeling • To know about the diseases of silkworm.
	VERMICULTURE	• To know the earthworm species and its importance • To create awareness among students on organic vermicomposting. • To motivate the students for self-employment • To understand the production of organic fertilizer. . I
	Biostatistics and Computer Applications	• Illustrate the basic concepts of probability and biostatistics. • Describe statistical methods and probability distributions relevant for molecular biology data. • To understand MS word, net work topology, internet and MS Excel
	Economic Zoology	• To encourage young learners for self – Employment. • To impart knowledge on useful animals to Mankind. • To emphasize the importance of economic values of animals. • To disseminate information on modern techniques of Animal culture.
	Economic Entomology	• To become familiar with various developmental stages of insects • To understand the role of beneficial insects • To know about the principle and methods of pest

		control • To study on household insects and insects vectors of human diseases.
	Microbiology Cell biology,	• To gain knowledge about the bacterial and viral structure and diseases • To understand the structure and function of various cell organells. • To acquire knowledge on sex linked inheritance in man • To study the biotech applications.
	INVERTEBRATA	CO1Understand the basic concepts of invertebrate animal sand recall its structure and functions. CO2Illustrate and examine the systemic and functional morphology of various groups of invertebrata. CO3Differentiate and classify the animal's mode of life in various taxa and estimate the biodiversity. CO4To compare and distinguish the various physiological processes and organ systems in lower animals. CO5Infer and integrate the parasitic and economic importance of invertebrate animals.
	FOOD, NUTRITION AND HEALTH	Understand the role of food and nutrients in health and disease. Gain knowledge about hygiene, food safety, disease transmission. Perform food system management and leadership functions that consider sustainability in business, healthcare, community and institutional areas.
	FOUNDATION COURSE	The Foundation Course will also provide a sound foundation for learning in the B.Sc., Zoology course and later in their professional career. While the institutions are expected to abide by the general guidelines, local changes can

	CHORDATA	be made depending on the context and requirements. CO1 Classify, Identify and recall the name and distinct features of different subphylum belonging to phylum Chordata.PO1 CO2Explain, and relate the origin, structural organization and evolutionary aspects of vertebrates. PO1, PO2 CO3Analyze, compare and distinguish the developmental stages and describe the important biological process. PO3, PO4, PO5 CO4Correlate the different modes of life and parental care among different vertebrates. PO3, PO5, PO6 CO5Summarise the morphology and ecological adaptations in vertebrates and list out the economic importance. PO2, PO3, PO5, PO8
	BASIC COURSE IN ORNITHOLOGY	Recall the taxonomic position of birds, their external morphology and internal parts, types of bird behavior. Identify the external parts of the bird, internal structures of the bird and different types of bird behavior. Differentiate birds based on their morphology, foraging strategies and other behaviour Explain and discuss how birds evolved, bird adaptations to flight, different aspects of bird behaviour, threats to birds and the role of citizen science in ornithology Discuss and analyse case studies relating to bird conservation.

M.Sc. ZOOLOGY		
COURSE CODE	**COURSE NAME**	**COURSEOUTCOME**
	ANIMAL PHYSIOLOGY	CO 1: Learn the nutrition, feeding and digestion. CO 2: Appreciate the aspects of respiration and circulation. CO 3: Discuss the various aspects of excretion, Osmo and thermo regulation. CO 4: Demonstrate the nervous system and sense organ. CO 5: Discuss the endocrine glands and reproduction.

	IMMUNOLOGY AND MICROBIOLOGY	CO 1: Discuss the types of lymphoid organs and detection of antigen antibody reaction. CO 2: To appreciate the components of the human immune response and hypersensitivity. CO 3: Demonstrate the various immune techniques. CO 4: Elaborate the Classification of prokaryotes and culture methodology of microbes. CO 5: Illustrate the economic importance of microbes. Course Outcomes:
	BIOSTATISTICS AND BIOINFORMATICS	CO 1: Illustrate the basic concepts of probability and biostatistics. CO 2: Describe statistical methods and probability distributions relevant for molecular biology data. CO 3: Perform and interpret bioinformatics and statistical analyses with real Molecular biology data. CO 4: Know the applications and limitations of different bioinformatics and Statistical methods. CO 5: Discuss the theory behind fundamental bioinformatics analysis methods and Widely used bioinformatics databases.
	APPLIED ZOOLOGY	CO 1: Discuss the vermicomposting method and its application. CO 2: Illustrate the concepts of sericulture and life cycle of silk worm. CO 3: Elaborate the life history of honey bee, methods of bee keeping and its life threatening diseases. CO 4: Discuss the various methods of prawn culture, harvesting and preservation. CO 5: Illustrate pearl culture techniques and types of pearls. Course Outcomes:

	HUMAN GENETICS	CO 1: Learn genetic material and concept of gene. CO 2: Illustrate the chromosomal aberration and types of syndromes. CO 3: Know the basics of cancer, types and therapeutic advancements. CO 4: Discuss various genetic and metabolic disorders. CO 5: Summarize types, applications and ethics involved in PCR typing and genetic testing.
	EVOLUTION	CO 1: Discuss the history, concepts of evolution and know the theories of evolution. CO 2: Illustrate the concepts of mutation variation and role of isolation mechanism. CO 3: Discuss genetics, structure and ecology of speciation. CO 4: Discuss the origin of higher categories, connecting link and rates of evolution. CO 5: Summarize the cultural evolution and recent findings of fossil records of human evolution.
	DEVELOPMENTAL BIOLOGY	CO 1: Discuss the development of gametogenesis, Oogenesis, spermatogenesis and fertilization. CO 2: Illustrate the patterns of cleavage, neural induction and morphogenetic movements. CO 3: Discuss the chemical basis of differentiation, development of ageing and teratogenesis. CO 4: Summarize the morphogenetic process of ontogenesis and asexual reproduction. CO 5: Accentuate the developmental genetics of Drosophila, Zebra fish and tissue regeneration.
	Structure and Functions of Invertebrates	**Expected Course Outcome**: On the successful completion of the course, student will be able to: 1. Remember the general concepts and major groups in animal classification, origin, structure, functions and distribution of life in all its forms. K1 & K2 2.

		Understand the evolutionary process. All are linked in a sequence of life patterns. K2 & K4 3. Apply this for pre-professional work in agriculture and conservation of life forms. K3 & K5 K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create
	Comparative Anatomy of Vertebrates	Expected Course Outcome: On the successful completion of the course, student will be able to: 1. Remember the general concepts and major groups in animal classification, origin, structure, functions and distribution of life in all its forms. K1 & K2 2. Understand the evolutionary process. All are linked in a sequence of life patterns. K2 & K4 3. Apply this for pre-professional work in agriculture and conservation of life forms. K3 & K5 K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create
	Lab Course in Invertebrates & Vertebrates	Expected Course Outcome: On the successful completion of the course, student will be able to: 1. Able to dissect and open the animal K2 & K4 2. Learn the adaptive features of different groups of animals K1 & K2 19 3. Understand the structure and functions of various systems in animals K1 - Remember; K2 - Understand; K3 - Apply; K4 - Analyze; K5 - Evaluate; K6 – Create
	Molecules and their interaction relevant to Biology	Expected Course Outcome: On the successful completion of the course, student will be able to: I Learn the structure, properties, metabolism and bioenergetics of biomolecules K1 & K3 II Acquire knowledge on various classes and major types of enzymes, classification, their mechanism of action and regulation K1 & K2 III Understand the fundamentals of biophysical chemistry and biochemistry, importance and applications of methods in conforming the structure of biopolymers K4 & K5 K1 - Remember; K2 - Understand; K3 - ApplyK4-Analyze; K5-Evaluate; K6- Create

	Biostatistics	Expected Course Outcome: Upon completion of this course, Students would have I Clear understanding of design and application of biostatistics relevant to experimental and population studies. K2 & K3 II Acquired skills to perform various statistical analyses using modern statistical techniques and software. K3 III Knowledge on the merits and limitation of practical problems in biological/ health management study as well as to propose and implement appropriate statistical design/ methods of analysis. K4 & K5 K1-Remember; K2- Understand; K3- Apply K4-Analyze; K5-Evaluate; K6- Creat
	Intellectual Property Rights	Expected Course Outcome: On the successful completion of the course, student will be able to I Claim the rights for the protection of their invention done in their project work. K1 & K3 II Identify criterias‟ to fit one‟s own intellectual work in particular form of IPRs K2 & K3 III To get registration in our country and foreign countries of their invention, designs and thesis or theory written by students during their project. K1, K2 & K3 K1-Remember; K2- Understand; K3- Apply
	Cellular and Molecular Biology	Expected Course Outcome: Upon completion of this course, students could 1. Understand the general concepts of cell and molecular biology. K1, K2 32 2. Visualize the basic molecular processes in prokaryotic and eukaryotic cells, especially relevance of molecular and cellular structures influencing functional features. K3 & K4 3. Perceive the importance of physical and chemical signals at the molecular level resulting in modulation of response of cellular responses. K5 & K6 K1- Remember; K2- Understand; K3- Apply K4-Analyze; K5-Evaluate; K6- Create

	Developmental Biology	Expected Course Outcome: On the successful completion of the course, student will be able to 1. Define the concepts of embryonic development K1 2. Observe various stages of cell divisions under microscope K2 & K3 3. Understand the formation of zygote K & K5 K1- Remember; K2- Understand; K3- Apply K4-Analyze; K5-Evaluate; K6- Create
	Lab Course in Cellular and Molecular Biology - Developmental Biology	Expected Course Outcome: Upon completion of this lab course, students 1. Acquire knowledge to differentiate the cells of various living organisms and become awares of physiological processes of cells Develops the skill of measuring the size of animal cells K1& K2 2. Understand and observe the developmental stages of Chick K3 & K4 3. Develop handling - skills of egg blastoderm from the chick egg K5 & K6 K1 - Remember; K2 - Understand; K3 - ApplyK4-Analyze; K5-Evaluate; K6- Create
	Economic Entomology	Expected Course Outcome: On the successful completion of the course, student will be able to I Understand taxonomy, classification and life of insects in the animal kingdom. K1 & K2 II Know the life cycle, rearing and management of diseases of beneficial insects. K2 & K3 III Know the type of harmful insects, life cycle, damage potential and management of pests including natural pest control K3 & K4 K1 - Remember; K2 - Understand; K3 - ApplyK4-Analyze; K5-Evaluate; K6- Create
	Research Methodology	Expected Course Outcome: On the successful completion of the course, student will be able to 1. Understand the implications of GLP K1 2. Learn the working principles of different instruments K2 3. Gain the knowledge on techniques of histology and histochemistry K2 & K
	Poultry Farming	Expected Course Outcome: Upon completion of this course, Students would have I To understand

		the various practices in Poultry farming. To know the needs for Poultry farming and the status of India in global market. K2 & K3 II To be able to apply the techniques and practices needed or Poultry farming. K1, K2 & K3 III To know the difficulties in Poultry farming and be able to propose plans against it. K5 & K6 K1- Remember; K2-Understand; K3- Apply; K4-Analyze; K5-Evaluate; K6- Create

PROGRAMME NAME B.Sc. COMPUTER SCIENCE

COURSE CODE	COURSE NAME	COURSE OUTCOME
SCSPC11	Programming in C	• CO1: The Course is design to provide complete knowledg of C language. • CO2: Students will be able to develop logics which help them to create programs ,Application in C. • CO3: Also by learning the basic programming construct they can easily switch over to any other language in future.
SCSPC1P	Programming in C Lab	• CO1: Understand the fundamentals of C programming • CO2:Utilize looping and decision making statements to solve the problem‟‟ • CO3:Understand in array, function pointers, structures and unions • CO4:Acquire knowledge to implement file operations in C programming
SCSPF11	Problem solving Techniques	• CO1:On Completion of this course, students will • CO2:Learn the basic of computer; Construct the structure of the required things in computer. Learn how to use it. • CO3:Develop Organizational structure using for the devices present currently under input or output unit.
SCSPS11	Fundamentals of information and Technology	• CO1:Learn the basic of computer,learn How to use it • CO2: Develop organizational structure using for the devices present currently under I/O unit. • CO3: Concept of storing Data in Ram and Rom with Different types.

		• CO4: Work with Different software and Application of software • CO5: Usage of Operating system in Information Technology.
SCSJS3P	Multimedia lab	• CO1:Edit photo using photo editor tool • CO2:Create graphical designs • CO3:Apply various animation on images • CO4:Develop various effects on images using Flash
SCSJC31	Data Structure and Computer Algorithms	• CO1:Identify appropriate data structure as applied to specified problem definition • CO2:Acquire skill to Handle operations like searching, insertion, deletion, traversing mechanism etc. on various data structures • CO3:Gain knowledge to describe and simulate various linear data structures like stacks, queues, linked lists using static and dynamic allocation and use them in solving problems • CO4:Acquire knowledge to simulate nonlinear data structures like binary search tree and use them in designing applications like sorting, expression trees etc
SCSJC3P	Data Structure and Computer Algorithms Lab	• CO1:Understand recollect and Implement the algorithms concepts • CO2:Understand develop the practical skills in sorting concepts • CO3:It provides the student awareness about data Analysis
SCSJC51	Relational Database Management System	• CO1:Understand the database concepts • CO2:Gain adequate knowledge to design various database models, schemas and sql statements • CO3:Understand the insights of security and authorization • CO4:Improve database efficiency using normal form. • CO5:Qualify to write queries using algebraic and calculus notations • CO6:Access data from various databases.

SCSJC52	Operating System	• CO1:Learn different types of operating systems along with concept of file systems and CPU scheduling algorithms used in operating system • CO2:Acquire knowledge in memory management and deadlock handling algorithms. • CO3:Understand the process and scheduling algorithms,Dekkers Algorithms and Bankers Algorithms.
SCSJC53	Software Engineering	• CO1:Learn different software development process models and software engineering principles and develop an ability to apply them to software design of real life problems • CO2:Understanding towards teamwork and quality management in software project management • CO3:Create a test plan for the software • CO4:Analyze and test a software system, when it is evolved to accommodate a set of change requirements such as adding new functionalities, bug fixing
SCSJC5P	Relational Database Management System Lab	• CO1:Create table with necessary fields. • CO2:Obtain knowledge to Capable to create data from multiple tables using DDL,DML,DCL,DCL Commands • CO3:Understand the usage of triggers,cursor,procedures are used • CO4:Qualify to through built-in function,Date and Time
SCSJS5P	Python Programming	• CO1:Describe the Python language syntax including control statements, loops and functions to write programs for a wide variety problem in mathematics. • CO2:Examine the core data structures like lists, dictionaries, tuples and sets in Python to store, process and sort the data.
SCSJA51	Client server computing	• CO1:Impact and services available with client server technology and distributed computing. • CO2:Student will explore various type of client server implementation : SQL databases,transactionserver,distributedobjects,groupware, web Applications and web server

SCSJN51	Introduction to computer and office Automation	• CO1:to perform documentation · • CO2:to perform accounting operations · • CO3:to perform presentation skills
SCSPC21	Data Structure and Computer Algorithms	• CO1:Identify appropriate data structure as applied to specified problem definition • CO2:Acquire skill to Handle operations like searching, insertion, deletion, traversing mechanism etc. on various data structures • CO3:Gain knowledge to describe and simulate various linear data structures like stacks, queues, linked lists using static and dynamic allocation and use them in solving problems • CO4:Acquire knowledge to simulate nonlinear data structures like binary search tree and use them in designing applications like sorting, expression trees etc
SCSPC2P	Data Structure and Computer Algorithms-Lab	• CO1:Exposed to create classes and Objects • CO2:Gain familiar its with use and Access of Constructor and Destructor • CO3:Acquire skills to implement the concepts of Function overloading & operator Overloading Understand the Concepts of Inheritance
SCSPS2P	Advanced Excel lab	• CO1:Work with big data tools and it's Analysis Techniques. • CO2:Perform Analytics on Data Streams . • CO3:Learn and Apply Different mining Algorithms and Large Volume of Data.
SCSPS21	Office Automation	• CO1: Posses the Knowledge on the basic of computer and its components. • CO2: Gain Knowledge on creating Documents Spread Sheet and Presentation. • CO3: Learn the concept of Database and implement the query in Database. • CO4: Understanding of Different Animation Tool and Presentation purpose .

SCSJC42	System Software	• CO1:Understand system Architecture such as SIC,SIC/XE,VAX,Pentium pro, ultra spark etc., • CO2:Understand system software"s such as assembler, interpreter, linker, loader and compilers • CO3:Understanding towards design for Intermediate Code Generation in compiler.
SCSJC41	Java Programming	• CO1:Understand the difference between object oriented programming and procedural oriented languages • CO2:Understand the designing of complex classes: friend functions and static member functions, inline functions, constant functions • CO3:Understand the inheritance: single inheritance, multi-level inheritance, hierarchical inheritance, hybrid inheritance and multiple inheritance • CO4:Understand the file handling: Writing and reading data from the file, reading and writing the objects into the file • CO5:Ability to understand the Exception Handling: Catch, block, make user-defined exceptions. • CO6:Understand the concepts of Objects, Classes, Methods, Constructors and Destructors
SCSJC4P	Java Programming Lab	• CO1:Understanding the concepts of Operators • CO2:Gain skill to Implement the concepts of Method Overloading • CO3:Understanding in concepts of Various Inheritance • CO4:Implement the concepts of Interface • CO5:Implement the concepts of Multithreading • CO6:Work skilfully with Packages • CO7:Apply the concepts of String
SCSJS4P	PHP Lab	• CO1:Gain knowledge in Basic HTML Tags • CO2:Learn how to embed PHP coding with HTML Tags • CO3:Analyze the concepts of Cookies & Sessions and apply in Websites • CO4:Qualify to create Database in SQL and learn to insert, Update and Delete rows in SQL table from PHP

SCSJC61	Data Communication computer networks	• CO1:Learn the fundamentals of computer science. • CO2:Gain knowledge in the functionalities of each and every layer in network. • CO3:Ability to realize and compare different LAN topologies. • CO4:Implement and Compare the performance of Data Link Layer protocols. • CO5:Analyze the services and features of the various layers in the protocol stack. • CO6:Differentiate different routing algorithms and their usage.
SCSJC62	Data mining	• CO1:Understand warehouse architecture. • CO2:Gain knowledge on various data storage models. • CO3:Retrieve interesting patterns. • CO4:Acquire skills to plot data in multidimensional space. • CO5:Qualify to generate rule from data-set. • CO6:Gain Familiarity with classification algorithm.
SCSJA61	Computer Graphics	• CO1:Analyse the Basic output primitive, drawing algorithms along with 2D Transformation concepts • CO2:Learn the core concepts of CG Design algorithms for graphics applications • CO3:Gain knowledge of Windows Clipping & view object representation in relation to images displayed on screen • CO4:Create interactive graphics applications • CO5:Discern the rapid change of technology & methodology in multimedia environment
SCSJS61	Quantitative Apptitude	• CO1:Solve number problems, probability and profit and loss. • CO2:Develop reasoning ability. • CO3:Got introduction to the competitive exams. • CO4:Acquire knowledge to solve train and boat, work and age problem.

SCSJC6P	Web Technology-Lab	• CO1:Analyze a web page and identify its elements and attributes. · • CO2:Create web pages using HTML and Cascading Style Sheets. · • CO3:Build dynamic web pages using JavaScript (Client side programming). · • CO4:Create a webpage design using ASP.Net and Connect the SQL database
SCSJC6R	Project-Lab	• CO1:Gain knowledge in programming concepts and basics of software development life cycle model for the implementation of the project. • CO2:Acquire Knowledge in different software development process models and develop their ability to apply them in software design of real life problems. • CO3:Plan,analyze,design and implement a software project using programming languages like java,ASP,PHP,etc., Gain confidence at having conceptualized, designed and implemented a working major project with their team. • CO4:Ability to work as a team and to focus on getting a working project done within a stipulated period of time. • CO5:Ability to develop their own projects with their own ideas.
SCSJN61	Introduction to Internet	• CO1:Enrich knowledge in origin and growth of internet. • CO2:Gain knowledge to send mail and subscribe in news groups. • CO3:Develop simple websites. • CO4:Acquire knowledge to access internet connection.

PROGRAMME NAME : B.Sc. INFORMATION TECHNOLOGY

COURSE CODE	COURSE NAME	COURSEOUTCOME
SNTPS21	**Multimedia Systems**	Understand the concepts, importance, application andthe process of developing multimedia
		To have basic knowledge and understanding about image related processing
		To understand the framework of frames and bit images to animations

		Speaks about the multimedia projects and stages of requirement in phases of project.
		Understanding the concept of cost involved in multimedia planning, designing, and producing
SNTPS2P	**Advanced Excel**	Work with big data tools and its analysis techniques.
		Analyze data by utilizing clustering and classification algorithms.
		Learn and apply different mining algorithms and recommendation systems for large volumes of data.
		Perform analytics on data streams.
		Learn No SQL databases and management.
	Digital Logic Fundamentals	Identify the logic gates and their functionality.
		Perform number conversions from one system to anothersystem
		Understand the functions of combinational circuits
		Perform number conversions
		Perform Counter design and learn its operations
	WEB DESIGNING	Develop working knowledge of HTML
		Ability to Develop and publish Web pages using Hypertext Markup Language (HTML).
		Ability to optimize page styles and layout with Cascading Style Sheets (CSS).
		Ability to develop a java script
		An ability to develop web application using Ajax.
	Biometrics	To understand the basic concepts and the functionality of the Biometrics, Face Biometrics, Types, Architecture and Applications.
		To know the concepts Retina and Iris Biometrics and Vein and Fingerprint Biometrics.
		To analyze the Privacy Enhancement and Multimodal Biometrics.
		To get analytical idea on Water marking Techniques
		To Gain knowledge on Future scope of Biometrics, and Study of various BiometricTechniques.
	PROGRAMMING IN C	Outline the fundamental concepts of C programming languages, and its features
		Demonstrate the programming methodology.
		Identify suitable programming constructs for problem solving.
		Select the appropriate data representation, control structures, functions and concepts based on the problem requirement.
		Evaluate the program performance by fixing the errors.

	C Programming LAB	Demonstrate the understanding of syntax and semantics of C programs.
		Identify the problem and solve using C programming techniques.
		Identify suitable programming constructs for problem solving.
		Analyze various concepts of C language to solve the problem in an efficient way.
		Develop a C program for a given problem and test for its correctness.
	FUNDAMENTALS OF COMPUTERS	Outline the Computer fundamentals and various problem solving concepts in Computers
		Describe the basic computer organization, software, computer languages, softwaredevelopment life cycle and the need of structured programming in solving a computer problem
		Identify the types of computer languages, software, computer problems and examine how to set up expressions and equations to solve the problem.
		Choose most appropriate programming languages, constructs and features to solve the Problems in diversified domains.
		Analyze the design of modules and functions in structuring the solution and various Organizing tools in problem solving.
SNTPC21	**JAVAPROGRAMMING & DATA STRUCTURES**	Understand the concepts of Data Structures and simple linear data structure , Outline the basic terminologies of OOP, programming languagetechniques,JDBC and Internet programming concepts
		Solve problems using basic constructs, mechanisms, techniques and technologies of Java
		Analyze and explain the behavior of simple programs involving different techniques such as Inheritance, Packages,Interfaces,ExceptionHandlingandThreadandtechnologiessuchasJDBCandServlets
		Assess various problem-solving strategies involved in Java to develop a high-level application.
		DesignGUIbasedJDBCapplicationsandabletodevelopServletsusingsuitableOOP conceptsand techniques
SNTPC2P	**JAVA PROGRAMMING**	Identify and explain the way of solving the simple problems
		Use appropriate software development environment to write, compile and execute

	& DATA STRUCTURES PRACTICAL	object-oriented Java programs
		Analyze and identify necessary mechanisms of Java needed to solve real-world problem
		Test for defects and validate a Java program with different inputs
		Design, develop and compile Core Java , GUI , JDBC and servlet applications that utilize OOP and data structure concepts
	RELATIONAL DATABASE MANAGEMENT SYSTEM	Outline the fundamental RDBMS concepts and PL/SQL
		Apply database operations, mapping, normalization, SQL and PL/SQL
		Analyze the requirements to implement relational database concepts
		Evaluate the database based on various models and normalization.
		Design and construct normalized tables and manipulate it effectively using SQL andPL/SQL database objects
	RELATIONAL DATABASE MANAGEMENT SYSTEMPRACTICAL	Choose appropriate SQL queries and PL/SQL blocks for the database.
		Implement SQL and PL/SQL blocks for the given problem effectively.
		Analyse the problem and Exceptions using queries and PL/SQL blocks.
		Validate the database for normalization using SQL and PL/SQL blocks.
		Design Database tables, create Procedures, user-defined functions and Triggers.
SNTJC51	**Computer Networks**	To understand computer network basics, network architecture, TCP/IP and OSI reference models.
		To identify and understand various techniques and modes of Transmission
		To describe data link protocols, multi-channel access protocols and IEEE 802 standards for LAN
		To describe routing and congestion in network layer with routing algorithms and classify IPV4 addressing scheme.
		To understand network security and define various protocols such as FTP, HTTP, Telnet, DNS.
SNTJC52		To understand software engineering process life cycle
		To able to elicit

	SOFTWARE ENGINEERING	To analyze and translate a specification into a design
		To know how to develop the code from the design and effectively apply relevant standards and perform testing
		To able to use modern engineering tools necessary for software project management
SNTJC53	**RDBMS**	To understand RDBMS architecture, physical and logical database designs, database modeling, relational, hierarchical and network models.
		To identify basic database storage structures and access techniques such as file organizations, indexing methods including B-tree, and hashing.
		To learn and apply structured query language (SQL) for database definition and database manipulation.
		To demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database.
		To understand various transaction processing, concurrency control
SNTJC5P	**RDBMS LAB**	To understand the DDL commands, Primary key and Candidate keys
		To apply the various DML commands for retrieval of information
		To perform all the Table join operations ,set operation
		To perform all the Table String function
		To develop simple applications using PL/SQL procedure
SNTJA51	**MOBILE COMPUTING**	To understand wireless networking and MAC protocols.
		To understand the Mobile internet protocols and Transport layer
		To understand Mobile Tele communication system.
		To gain the knowledge about mobile AD-hoc network.
		To develop the mobile platform and Applications.
SNTJS2P	**NETWORKING LAB**	To understand the concept of client and server using java program
		To send data from client to server using UDP and TCP
		To manipulate the mathematical operations using RMI concepts.
		To find the IP address using TCP/IP protocols.
		To find the routing using CISCO Packet Tracer.

SNTJN51	**Introduction to Information Technology**	To gain the knowledge of types computer and its usage
		To understand the working principles of secondary storage devices
		To gain the knowledge about various types of input and output devices
		To understand the basic telecommunication and network structure(Internet & WWW)
		To create basic templates .(Web page)

PROGRAMME NAME : B.C.A

COURSE CODE	COURSE NAME	COURSEOUTCOME
SCAPC11	Python programming	CO1 : Learn the basics of python, Do simple programs on python CO2 : Develop program using selection statement, Work with Looping and jump statements, Do programs on Loops and jump statements. CO3 : Concept of function, function arguments, Implementing the concept strings in various application, Significance of Modules, Work with functions, Strings and modules. CO4: Work with List, tuples and dictionary, Write program using list, tuples and dictionary. CO5 : Usage of File handlings in python, Concept of reading and writing files, Do programs using files.
SCAPC1P	Python programming lab	CO1 : Learn the basics of python, Do simple programs on python CO2 : Develop program using selection statement, Work with Looping and jump statements, Do programs on Loops and jump statements. CO3 : Concept of function, function arguments, Implementing the concept strings in various

		application, Significance of Modules, Work with functions, Strings and modules. CO4: Work with List, tuples and dictionary, Write program using list, tuples and dictionary. CO5 : Usage of File handlings in python, Concept of reading and writing files, Do programs using files.
SCAPT11	Digital logic fundamentals	CO1) Understand various types of number systems and their conversions. CO2) Simplify the Boolean expressions and apply the Boolean theorems through logical gates CO3) Design and implement variety of logical devices using combinational circuits concepts. CO4) Analyze the design procedures of Combinational and Sequential circuits. CO5) Design the finite state machine using algorithmic state machine charts and perform simple projects with a few flip-flops.
SCAPF11	Structured programming in C	CO1) Remember the program structure of C with its syntax and semantics CO2) Understand the programming principles in C (data types, operators, branching and looping, arrays, functions, structures, pointers and files) CO3) Apply the programming principles learnt in real-time problems CO4) Analyze the various methods of solving a problem and choose the best method CO5) Code, debug and test the programs with appropriate test cases
SCAPS11	Office Automation	CO1) Possess the knowledge on the basics of computers and its components CO2) Gain knowledge on Creating Documents, spreadsheet and presentation. CO3) Learn the concepts of Database and implement the Query in Database. CO4) Demonstrate the understanding of different automation tools. CO5) Utilize the automation tools for documentation, calculation and presentation purpose.

SCAPC21	Object Oriented Programming using C++	CO1) Remember the program structure of C with its syntax and semantics CO2) Understand the programming principles in C (data types, operators, branching and looping, arrays, functions, structures, pointers and files) CO3) Apply the programming principles learnt in realtime problems CO4) Analyze the various methods of solving a problem and choose the best method CO5) Code, debug and test the programs with appropriate test cases
SCAPC2P	C++ Programming lab	CO1) Remember the program structure of C with its syntax and semantics CO2) Understand the programming principles in C (data types, operators, branching and looping, arrays, functions, structures, pointers and files) CO3) Apply the programming principles learnt in realtime problems CO4) Analyze the various methods of solving a problem and choose the best method CO5) Code, debug and test the programs with appropriate test cases
SCAPS21	Introduction to HTML	CO1) Knows the basic concept in HTML Concept of resources in HTML CO2) Knows Design concept. Concept of Meta Data Understand the concept of saves the files. CO3) Understand the page formatting. Concept of list CO4) Creating Links. Know the concept of creating link to email address CO5) Concept of adding images Understand the table creation
SCAPT21	Financial Accounting	CO1) Learners understand the dissolution of firms CO2) Got the knowledge of the piecemeal distribution of cash for settlement of liabilities CO3) Understanding conversion of a firm into a ltd company CO4) Learners learned to maintain accounts in the books of purchasing firm CO5) Helps to understand the application of rate for foreign currency into reporting
SCAPS22	Multimedia systems	CO1) understand the concepts, importance, application and the process of developing multimedia CO2) to have basic knowledge and understanding about image related processing CO3) To understand the framework of frames and bit images to animations

		CO4) Speaks about the multimedia projects and stages of requirement in phases of project. CO5) Understanding the concept of cost involved in multimedia planning, designing, and producing
	Data structures and Algorithm	CO1) Understand the concept of Dynamic memory management, data types, algorithms, Big O notation CO2) Understand basic data structures such as arrays, linked lists, stacks and queues CO3) Describe the hash function and concepts of collision and its resolution methods CO4) Solve problem involving graphs, trees and heaps CO5) Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data
	Data structures and Algorithm lab	CO1) Understand the concept of Dynamic memory management, data types, algorithms, Big O notation CO2) Understand basic data structures such as arrays, linked lists, stacks and queues CO3) Describe the hash function and concepts of collision and its resolution methods CO4) Solve problem involving graphs, trees and heaps CO5) Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data
	Understanding Internet	CO1) Knows the basic concept in internet Concept of mass medium and world wide web CO2) Knows the concept of internet as a technology. CO3) Understand the concept of infotainment and classification based on content and style CO4) Can be able to know about Demographic and psychographic description of internet CO5) Understand the concept of cyber-crime and future possibilities
	Biometrics	CO1) To understand the basic concepts and the functionality of the Biometrics, Face Biometrics, Types, Architecture and Applications. CO2) To know the concepts Retina and Iris Biometrics and Vein and Fingerprint Biometrics. CO3) To analyze the Privacy Enhancement and Multimodal Biometrics. CO4) To get analytical idea on Water marking Techniques CO5) To Gain knowledge on Future scope of Biometrics, and Study of various Biometric Techniques.
	Numerical methods	CO1) Understanding the theoretical and practical aspects of the use of numerical methods.

		CO2) Implementing numerical methods for a variety of multidisciplinary applications. CO3) Establishing the limitations, advantages, and disadvantages of numerical methods. CO4) Apply appropriate numerical methods to solve the problem with most accuracy. CO5) Be able to derive Least – Squares curve fitting procedures, fitting a straight line, fitting a parabola, nonlinear curve fitting, Curve fitting by a sum of exponentials.
	Programming in Java	CO1) Understand the basic Object-oriented concepts. Implement the basic constructs of Core Java. CO2) Implement inheritance, packages, interfaces and exception handling of Core Java CO3) Implement multi-threading and I/O Streams of Core Java CO4) Implement AWT and Event handling. CO5) Use Swing to create GUI.
	Programming in Java lab	CO1) Understand the basic Object-oriented concepts. Implement the basic constructs of Core Java. CO2) Implement inheritance, packages, interfaces and exception handling of Core Java CO3) Implement multi-threading and I/O Streams of Core Java CO4) Implement AWT and Event handling. CO5) Use Swing to create GUI.
	PHP programming	CO1) Write PHP scripts to handle HTML forms CO2) Write regular expressions including modifiers, operators, and meta characters. CO3) Create PHP Program using the concept of array. CO4) Create PHP programs that use various PHP library functions CO5) Manipulate files and directories.
	Resource Management Techniques	CO1) Solve linear programming problems using appropriate techniques and optimization solvers, interpret the results obtained. CO2) Determine optimal strategy for Minimization of Cost of shipping of products from source to Destination/ Maximization of profits of shipping products using various methods, Finding initial basic feasible and optimal solution of the Transportation problems CO3) Optimize the allocation of resources to Demand points in the best possible way using various techniques and minimize the cost or time of completion of number of jobs by number of persons.

		CO4) Model competitive real-world phenomena using concepts from game theory. Analyse pure and mixed strategy games CO5) Formulate Network models for service and manufacturing systems, and apply operations research techniques and algorithms to solve these Network problems
	Advanced Excel	CO1) Work with big data tools and its analysis techniques. CO2) Analyze data by utilizing clustering and classification algorithms. CO3) Learn and apply different mining algorithms and recommendation systems for large volumes of data. CO4) Perform analytics on data streams CO5) Learn No-SQL databases and management.
	Operating system	CO1) Define the fundamentals of OS and identify the concepts relevant to process , process life cycle, Scheduling Algorithms, Deadlock and Memory management CO2) know the critical analysis of process involving various algorithms, an exposure to threads and semaphores CO3) Have a complete study about Deadlock and its impact over OS. Knowledge of handling Deadlock with respective algorithms and measures to retrieve from deadlock. CO4) Have complete knowledge of Scheduling Algorithms and its types. CO5) understand memory organization and management
	ASP .Net Programming	CO1) Develop working knowledge of C# programming constructs and the .NET Framework CO2) To develop a software to solve real-world problems using ASP.NET CO3) To Work On Various Controls Files CO4) To create a web application using MicrosoftADO.NET. CO5) To develop web applications using XML
	ASP .Net Programming lab	CO1) Develop working knowledge of C# programming constructs and the .NET Framework CO2) To develop a software to solve real-world problems using ASP.NET CO3) To Work On Various Controls Files CO4) To create a web application using MicrosoftADO.NET. CO5) To develop web applications using XML
	Software Project	CO1) Understand the principles and concepts of project management

	Management	CO2) Knowledge gained to train software project managers CO3) Apply software project management methodologies CO4) Able to create comprehensive project plans CO5) Evaluate and mitigate risks associated with software development process
	Database Management System	CO1) Understand the various basic concepts of Data Base System. Difference between file system and DBMS and compare various data models CO2) Define the integrity constraints. Understand the basic concepts of Relational Data Model, EntityRelationship Model CO3) Design database schema considering normalization and relationships within database. Understand and construct database using Structured Query Language. Attain a good practical skill of managing and retrieving of data using Data Manipulation Language (DML) CO4) Classify the different functions and various join operations and enhance the knowledge of handling multiple tables. CO5) Learn to design Data base operations and implement using PL/SQL programs. Learn basics of PL/SQL and develop programs using Cursors, Exceptions
	Computer Networks	CO1) To Understand the basics of Computer Network architecture, OSI and TCP/IP reference model CO2) To gain knowledge on Telephone systems using wireless network CO3) To understand the concept of MAC CO4) To analyze the characteristics of Routing and Congestion control algorithms CO5) To understand network security and define various protocols such as FTP, HTTP, Telnet, DNS
	DATA ANALYTICS USING R Programming	CO1) Work with big data tools and its analysis techniques. CO2) Analyze data by utilizing clustering and classification algorithms. CO3) Learn and apply different mining algorithms and recommendation systems for large volumes of data. CO4) Perform analytics on data streams. CO5) Learn NoSQL databases and management
	R Programming lab	CO1) Work with big data tools and its analysis techniques. CO2) Analyze data by utilizing clustering and classification algorithms. CO3) Learn and apply different mining algorithms and recommendation systems for large volumes of data. CO4) Perform analytics on data streams. CO5) Learn NoSQL databases and management.

	Cloud Computing	CO1) Understand the fundamental concepts and Technologies in Cloud Computing. CO2) Able to understand various cloud service types and their uses and pitfalls. CO3) Able to understand Cloud Architecture and Application design. CO4) Understand the various aspects of application design, benchmarking and security in the Cloud. CO5) Understand various Case Studies in Cloud Computing.
	Internet of Things and its applications	CO1) Work with big data tools and its analysis techniques. CO2) Analyze data by utilizing clustering and classification algorithms. CO3) Learn and apply different mining algorithms and recommendation systems for large volumes of data. CO4) Perform analytics on data streams. CO5) Learn No SQL databases and management.
	Software Testing	CO1) Students learn to apply software testing knowledge and engineering methods CO2) Have an ability to identify the needs of software test automation, and define and develop a test tool to support test automation CO3) Have ability understand and identify various software testing problems, and solve these problems by designing and selecting software test models, criteria, strategies, and methods. CO4) Have basic understanding and knowledge of contemporary issues in software testing, such as component-based software testing problems CO5) Have an ability to use software testing methods and modern software testing tools for their testing projects.

PROGRAMME NAME: B.A. ENGLISH

COURSE CODE	COURSE NAME	COURSEOUTCOME
UTMJE31	English for Communication & Pleasure – III	• learn English as second language • understand the various genres of English language • increase their language skills
AENJC31	Poetry- II	• consume the taste of the poetry • understand the poetry own • appreciate the poetry in various angles

AENJA31	Advanced English Grammar and Usage	• learn Grammar as a course • speak without mistakes • frame the error free sentences
AENJT31	History of English Literature	• understand the various ages of literature • explore origin and the growth of literature • get clear idea in the area of English literature from Chaucer
AENJS31	Word Power	• know the functions of word • understand the proper usage of words • consume vocabularies from English
AENJS32	Creative Writing	• write on their own • acquire the tools of good writing • develop their creative writing skills
UENJE41	Part II English- Communicative English Paper I	• empower themselves for competitive examinations • develop their literary sensibility • enhance their competence in English through grammar and usage
AENJC41	Indian Writing in English	• understand how imperial English evince many changes among the Indian writer • identify the literary engagements of the prominent Indian poets • understand the cultural diversity of India as found in the play • identify the Indianness in the prescribed pieces
AENJC42	Twentieth Century Literature	• comprehend the socio-political spirit of the modern era • understand the changing literary scenario and the introduction of various ‘isms’ • read and appreciate the new type of novelenjoy the newness in language
AENJA41	Phonetics and Spoken English	• explain how English speech sounds are articulated and used to create meaning • specify phonemic transcription • apply their knowledge of English phonetics and phonology to improve their own pronunciation
AENJT41	The History of English Literature -II	• delineate major writers and their works in chronological order • analyse how the religious, social and political history of England influences the English writers from 19^{th}-21^{st} centuries • classify all major literary genres

		• compare English literature of one period with that of another
AENJS41	Presentation Skills	• deal with nerves and think more positively about public speaking • consider ways of grabbing the listener's attention, holding their interest and concluding strongly • use body language and tone of voice to enhance their presentationuse slides and visual aids effectively
AENJS42	Job Seeking Skills	• develop and revise appropriate job search plans and materials • prepare for execute effective informational and job interviews • identify career opportunities and target specific jobs that match current skills and career goals • identify strategies to manage their public information
AENPC11	Introduction to Literature	• Appreciate and analyse and the basic elements of poetry, including meter, rhyme, and theme. • Gain knowledge of the elements of fiction including narrative structure, character analysis and comparison between different but related texts. • Explore the features of literary language. • Use library resource store search and develop arguments about literary works. • Work skilfully within a team, Respect co-worker, delegate work and contribute to a group project.
AENPC12	Indian Writingin English	• Appreciate the historical trajectory of various genres of Indian Writing in English from colonial times to till the present. • Analyze Indian literary texts written in English in terms of colonialism, post-colonialism, regionalism, and nationalism. • Explore the role of English as a medium for political awakening and the use of English in India for creative writing. • Analyze how the sociological, historical, cultural and political context impacted. • Evaluate critically the contributions of major Indian English poets and dramatists.

AENPT11	Social History of England-I (Elective)	• Gain knowledge of various features of social and political history of England. • Awareness of the relation between socio- religious events and socio- political works. • Compare history with Literature. • Enable to assess the emergence, reasons, development and the impact of social movements. • Assess the overall emergence of English society as a nation.

PROGRAMME NAME : B.A. TAMIL

COURSE CODE	COURSE NAME	COURSEOUTCOME
	இக்கால இலக்கியம்	C.O1 : தமிழின் மரபுக் கவிதைகள்இபுதுக்கவிதைகளைக் கற்றல் C.O 2 : சிறுகதைகளையும் அதன் கட்டமைப்புக்களையும் அறிதல் C.O 3 : புதினங்களைக் கற்றுஅதன் தனித்துவத்தைஅறிந்துகொள்ளுதல் C.O 4: பயணஇலக்கியத்தின் தன்மையையும் சிறப்புகளையும் அறிதல் C.O 5 :நாடகங்களையும் அதன் சிறப்பியல்புகளையும் அறிதல்
	தமிழகவரலாறும் பண்பாடும்	C.O 1 : தமிழகவரலாற்றைஅறிந்துகொள்வர் C.O 2˙:தமிழிரின் தொன்மையைஅறிவர் C.O 3 ˙:பிறபண்பாட்டுத் தாக்கம் ஏற்படும் முறையைஅறிதல் C.O 4:தமிழ் மக்களின் பண்பாடுபற்றிஅறிதல் C.O 5 : தமிழரின் வரலாற்றுப் பழமைபற்றிஅறிவர்
	தமிழகவரலாறும் பண்பாடும்	C.O 1 : தமிழகவரலாற்றைஅறிந்துகொள்வர் C.O 2˙:தமிழிரின் தொன்மையைஅறிவர் C.O 3 ˙:பிறபண்பாட்டுத் தாக்கம் ஏற்படும் முறையைஅறிதல் C.O 4:தமிழ் மக்களின் பண்பாடுபற்றிஅறிதல் C.O 5 : தமிழரின் வரலாற்றுப் பழமைபற்றிஅறிவர்
	தமிழரின் மேலாண்மைச் சிந்தனைகள்	C.O 1˙:தமிழர் தம் மேலாண்மைச் சிந்தனைகளைஅறிவர் C.O 2˙:மேலாண்மைகுறித்தஅடையாளங்களைநினைவு கூர்தல் C.O 3˙:தமிழர் மேலாண்மையைப் பற்றிபல இலக்கியங்களின் வழி உணர்வர் C.O 4:தலைமைப் பண்புகளைப் பாகுபடுத்திவளர்த்துக் கொள்வர்

		C.O 5 :தலைமைப் பண்புளையும் நிர்வாகத் திறனையும் இலக்கியங்கள் வழி மதிப்பீடுசெய்வர்
	தமிழில் சிறார் இலக்கியங்கள்	C.O 1 :தமிழில் வெளிவந்துள்ளசிறார் இலக்கியங்களைப் பற்றிஅறிவர் C.O 2 :சிறார் இலக்கியப் படைப்பாளர்களைஅறிதல் C.O 3 :இலக்கியவரலாற்றில் சிறார்இலக்கியத்தின் இன்றியமையாத இடத்தையும் பங்கையும் அறிவர் C.O 4:தமிழில் சிறார் இலக்கியம் படைக்கும் ஆற்றலைஉணர்ந்துகொள்வர் C.O 5 :சிறார் இலக்கியத்தின் பண்புகள்இஉத்திகள்இதனித்தன்மைகளைமதிப்பிடுவர்
	சுற்றுலாவியலும் தமிழர் உணவியலும்	C.O 1 :சுற்றுலாவின் பயன்களைப் பற்றிஅறிதல் C.O 2 :சுற்றுலாநிறுவனங்கள்இவழிகாட்டிகள்இதிட்டமிடல் பற்றிஅறிதல் C.O 3 :தமிழ்க் கலைபண்பாட்டுவிழுமியங்கள் உலகளாவியநிலையில் இருப்பதைஅறிந்துகொள்ளுதல் C.O 4:தமிழகசுற்றுலாத்தலங்கள்இசுற்றுலாத்துறையில் உள்ளபணிவாய்ப்புகளைஅறிதல் C.O 5 :தமிழர் தம் உணவுமுறைகள்இபிறநாட்டுஉணவுகள்இஉணவுக்கலாச்சாரம் பற்றிஉணரந்துகொள்ளல்
	செம்மொழித் தமிழ்	C.O 1 :உலகமொழிகளில் செம்மொழித்தமிழின் சிறப்பைஅடையாளம் காணுதல் C.O 2 :மொழிப்போராட்டத்தில் தமிழ் அறிஞர்களின் பங்களிப்பைஅறிதல் C.O 3 :செம்மொழித் தமிழ் இலக்கியங்கள் பற்றிஅறிதல் C.O 4:தமிழின் தகுதிகளைப் பிறமொழிகளில் கண்டறிதல் C.O 5 :செம்மொரித் தமிழின் பயன்பாட்டைஅறிதல்
	அறஇலக்கியம்	C.O 1 :பழந்தமிழரின் வாழ்வியல் அறக் கருத்துக்களைப் புரிந்துகொள்ளுதல் C.O 2 :அறஇலக்கியங்கள் வாயிலாகதற்காலவாழ்வியலைஅறம் சார்ந்ததாகஅமைத்துக் கொள்ளல் C.O 3 :வாழ்வின் அனைத்துநிலைகளிலும் அறத்தின் இன்றியமையாமையைஉணர்வர் C.O4:அரசியல்இஅறிவியல்இசமூகபொருளாதாரநிலைகளில் அறத்தைப் பேணக் பற்றுக் கொள்ளுதல் C.O 5 :அறக்கோட்பாடுகளைஅறிந்துதனிமனிதஒழுக்கத்தில் மேம்பாடுஅடைதல்
	தமிழ் இலக்கியவரலாறு .	C.O 1 :சங்க இலக்கியங்களின் சிறப்புகள்இபடைப்புநோக்கங்கள் பற்றிஅறிந்துகொள்ளுதல் C.O 2 :அறஇலகியங்கள் பற்றியும் அதன் சிறப்புகளைப் பற்றியும் அறிந்துகொள்வர் C.O 3 :காப்பியங்கள் சிற்றிலக்கியங்கள் நாட்டுப்புறவியல் இலக்கியங்கள் குறித்தும் அறிந்துகொள்வர்

		C.O 4:பக்தி இலக்கியங்கள் இலக்கய நூல்கள் நிகண்டுகள் போன்றவைபற்றியதெளிவைப் பெறுதல் C.O 5 :அச்சுஊடகவளர்ச்சிபற்றிஅறிதல்
	அறிவியல்தமிழ்	C.O 1˙:தாய்மொழிவழியாகஅறிவியல் பற்றிச் சிந்திக்கும் திறன் பெறுதல் C.O 2˙:அறிவியல் கலைச் சொல்லாக்கம் பற்றியவிதிகள்இநுணுக்கங்களைஅறிதல் C.O 3˙:அறிவியல் தமிழ் வளர்ச்சியில் மொழியமைப்பின் பங்குபற்றிஅறிதல் C.O 4:எந்தஒருசெயலையும் அறிவியல் கண்கொண்டுபார்க்கும் திறன் பெற்றிருப்பர் C.O 5 :தமிழில் அறிவியல் படைப்பிலக்கியங்களைப் படைக்கும் திறன் பெறுதல்
	பேச்சுக்கலைத்திறன்	C.O 1˙:பேச்சுமொழியைக் கையாளும் திறன் பெறுவர் C.O 2˙:தகவல் திரட்டும் நுட்பங்களையும் சூழலுக்குஏற்பமனதளவில் தயாராகுதலையும் அறிதல் C.O 3˙:குறிப்பெடுப்பதைப் பற்றிஅறிதல் C.O 4:மொழிஞராகவும் நல்லஆளுமைஉடையவராகவும் உயர்வர் C.O 5:தனித்தன்மையுடையவராய் விளங்குதல்
	பேச்சுக்கலைத்திறன்	C.O 1˙:பேச்சுமொழியைக் கையாளும் திறன் பெறுவர் C.O 2˙:தகவல் திரட்டும் நுட்பங்களையும் சூழலுக்குஏற்பமனதளவில் தயாராகுதலையும் அறிதல் C.O 3˙:குறிப்பெடுப்பதைப் பற்றிஅறிதல் C.O 4:மொழிஞராகவும் நல்லஆளுமைஉடையவராகவும் உயர்வர் C.O 5:தனித்தன்மையுடையவராய் விளங்குதல்
	˙ பக்தி இலக்கியம்	CO1 :;;மாணவர்கள் பக்தி இலக்கிய காலகட்டத்தினை , .பின்புலத்தினை அறிந்து கொள்ள இயலும் CO2 :;சைவ வைணவப் பாடல்களில் பதிவு பெற்றுள்ள சூழலியல் சிந்தனைகளை பகுத்தாராய முடியும். CO3 :;சைவ வைணவக் கொள்கைகளை ஒப்பீடு செய்ய வழிவகை உண்டு CO4:;பக்தி பாடல்களின் வழி இறையடியவர்களின் உணர்வு மொழியை மதிப்பீடு செய்ய இயலும். CO5:பக்தி பாடல்கள் மூலம் இறையடியவர்கள் மேற்கொண்ட அறநெறிகளை மாணவர்கள் மனதில் உருவாக்க இயலும்
	˙ யாப்பு	CO1 :;;இலக்கணம் குறித்த அச்சத்தைப் போக்கியது CO2 :;நூற்பாக்களை மனனம் செய்து நினைவாற்றலை வளர்க்க உதவியது.CO3 :எதிர்காலத்தில் ஆசிரியராக வந்தால் எளிமையாக இலக்கணத்தை கற்றுக் கொடுக்கலாம் என்ற நம்பிக்கை தோன்றியது.

		CO4:;செய்யுளைப் பொருள்கொள்ளும் அணுகுமுறையைத் தெரிந்து கொண்டdu; CO5 :போட்டித் தேர்வுகளை எதிர்கொள்ளும் நம்பிக்கை உதித்தது.
	˙மக்கள் தகவல் தொடர்பியல்	CO1;தகவல்தொடர்புகுறித்தானவரலாற்றினைஅறிந்து கொள்ளமுடியும் CO2மக்கள்தகவலியல்கருவிகளைப்பற்றியானஅறிவினைப்பெற்றுக்கொள்ளஇயலும் CO3ஊடகநிகழ்ச்சிகளைவிமர்சனம்செய்யும்திறனாய்வுஆற்றலைப்பெறஇயலும். CO4:;தகவல்தொடர்புசாதனங்களால்உண்டானஅறிவியல்தொழில்நுட்பமாற்றங்களைபகுத்துஆராயமுடியும் CO5பல்வேறுவகையானஊடகக்கருவிகளைமாணவர்கள் திறம்படகையாளமுடியும்
	மொழிபெயர்ப்பியல்	CO1 :;;பல மொழிகளைக் கற்றுக் கொள்ள வேண்டும் என்ற ஆர்வம் ஏற்பட்டது CO2 :;மொழிபெயர்ப்பாளனாகும் பணி வாய்ப்பு கிடைப்பதை அறிந்து கொள்ள முடிந்தது. CO3 :;இலக்கியங்களை ஆழ்ந்து படிக்கும் நுட்பத்தை உண்டாக்கியது CO4:;அறியப்படாத நூல்களை அறிந்து கொள்ள முடிந்தது CO5 : நூல் பல கற்கும் வேட்கையைத் தூண்டியது
	˙காப்பிய இலக்கியம்	CO1 :;;தமிழில் இரட்டைக் காப்பியங்களை ஒப்பிட்டு அறிய வாய்ப்பு உண்டு CO2 :;தமிழ் காப்பியங்களில் கம்பராமாயண பாத்திரங்களைப் பட்டியலிட்டு காண முடியும் CO3 :;.நாயன்மார்களின் வரலாற்றை அறிய முடிந்தது CO4:;இயேசு கிறிஸ்துவின் வாழ்க்கையை அறிதல் . CO5 :கிறித்துவ மற்றும் இஸ்லாமிய காப்பியங்களின் சுவைகளை விவாதித்து உணர முடியும்.
	˙அணி	CO 1˙:அணிகளைஅறிந்துபடைப்புகளை மேற்கொள்ளமுயல்வா CO 2˙:இலக்கியங்களைஉருவாக்கும் போதும் சுவைக்கும் போதும் அணியிலக்கணஅறிவுஅவசியமானதுஎன்பதைஅறிந்து பயன்படுத்துவர். CO 3˙:அணி இலக்கணம் மரபாகவளஉச்சிபெற்றநிலைகள் குறித்து அறிந்துகொள்வர் CO 4:பழந்தமிழ் நூல்களில் புதைந்துள்ள அணிகளைச் சுவைப்பதற்கும் ஆராய்வதற்கும் பயிற்சிஅளிப்பர்

		CO 5 : பழந்தமிழரின் அழகியல் உணவுவுகளைத் தண்டிஅலங்காரம்வழிப் புரிந்துகொள்வதுடன் அணிகளைமரபுக் கவிதை, புதுக்கவிதை, உரைநடைஆகியவற்றில் பயன்படுத்திமொழி ஆற்றலைப் பெறுவவ
	நாட்டுப்புறவியல்	CO1நாட்டுப்புறப்பாடல்களின்வழிபாமரமக்களின்வாழ்வியலைவிளங்கிக்கொள்ளமுடியும் CO2நாட்டுப்புறக்கலைகளைக்கற்றுஅதனைதொழில்வாய்ப்பாகபயன்படுத்தஇயலும். CO3நாட்டுப்புறஇலக்கியவகைகள்குறித்தானஅறிவைப் பெறஇயலும் CO4:நாட்டுப்புறப்பாடல்களின்வழிஉணர்வுசார்கருத்தாக்கங்களைஉண்டாக்கஇயலும். CO5:உறவுகளின்தேவை ,பாசஉணர்வு குறித்தான சிந்தனையை அறிய இயலும்
	அறிவியல்தமிழ்	CO1 :;;மொழிசார் அறிவியல் வளர்ச்சியினை பகுத்தாராய முடியும். CO2 :;அறிவியல் தொழில்நுட்ப வளர்ச்சியினைத் தமிழ் மொழியில் உண்டாக்கும் அறிவினைப் பெறுதல். CO3 :;அறிவியல் கண்டுபிடிப்புகளைத் தமிழில் மொழியாக்கம் செய்யும் ஆற்றலைப் பெற முடியும். CO4:;அறிவியல்சார் மதிப்பீடுகளைத் தமிழ் மொழிக்கு ஏற்றார் போல் எளிமைப்படுத்தி அறிவியல் தமிழைப் பரவலாக்க இயலும். CO5:அறிவியல் கலைச்சொல்லாக்கங்களை உருவாக்கி தனியொரு கலைச்சொல் அகராதி உருவாக்கும் திறனைப் பெற இயலும்.
	˙ சிற்றிலக்கியம்	CO 1˙:சிற்றிலக்கியங்களின் மரபினைத் தெரிந்துகொள்வவ. CO 2˙:பாட்டியல் நூல்களின் அடிப்படையில் சிற்றிலக்கியவகைமைகளை விளக்குவவ. CO 3˙:சிற்றிலக்கியங்களின் வடிவம்,உத்தி,கொள்கை,உள்ளடக்கம் ஆகியவற்றைஉணவுவவ. CO 4: சிற்றிலக்கியத்தின் எடுத்துரைப்பியலைப் பாகுபடுத்திக் காண்பவ. CO 5 : சிற்றிலக்கியங்களின் வழி புலனாகும் அறக்கருத்துக்களை மதிப்பிட்டுஉரைப்பவ.
	நம்பியகப்பொருள்	CO 1˙:பண்டைத் தமிழ் இலக்கியங்களைஅறிந்துகொள்வவ. CO 2˙:அகப்பொருளைவிளக்கிக் கூறுவவ. CO 3˙:பண்டைத் தமிழ் அகப்பாடல்களை இனம் காண்பவ CO 4: பண்டைத் தமிழ் அகப்பாடல்களின் தன்மையைப்

		பாகுபடுத்துவஉ CO 5:பழந்தமிழ் இலக்கியங்களின் பாடுபொருளை மதிப்பிடுவஉ
	˙ தமிழ்மொழிவரலாறும் இலக்கணவரலாறும்	CO 1˙:மொழிவரலாறுபற்றிஅறிவர் CO 2˙:தமழ்மொழியின் தொன்மையும் வளமையும் பற்றிஅறிந்துகொள்வர் CO 3˙:பழமையானதமிழ் இலக்கியங்களின் வளர்ச்சிகுறித்துஅறிவர் CO 4:தமிழ்மொழிவளர்சியின் வரலாற்றைசான்றுகளுடன் தெரிந்துகொள்வர் CO 5˙:தமிழ் இலக்கியங்களின் மேன்மையையும் மதிபீட்டையும் அறிந்துகொள்வர்
	ஆளுமைதிறன்	CO1 :;; *ஆளுமைத் திறனை வளர்த்துக்கொள்ள முடிந்தது* CO2 :; *பல்வேறு படைப்பாளர்கள் ஆளுமையை ஒப்பாய்வு செய்யத் தூண்டியது* CO3 :; *பல்வேறு படைப்பாளர்கள் பற்றிய திறனாய்விற்கு வழி வகுத்தது* CO4:; *அரசுப் பணி விரிவுரையாளர் தகுதித் தேர்வுகளை சந்திக்க உதவியாக இருத்தது* CO5 :;*பல்வேறு படைப்பாளர்களின் ஆய்வுத் திறன் மூலம் நம் படைப்பாக்க ஆளுமையை வளர்த்துக்க கொள்ள உதவியாக இருத்தது*
	இலக்கியத் திறனாய்வியல்	CO 1˙:தமிழ்த் திறனாய்வுமுறைகளைஅறிந்துகொள்வஉ. CO 2˙:திறனாய்வுஅணுகுமுறைகளையும் அறிவஉ CO 3˙:திறனாய்வுக் கோட்பாட்டுகளைஅறிந்துகொள்வஉ. CO 4:அயல் நாட்டுத் திறனாய்வுஅணுகுமுறைகளைஅறிவஉ. CO5: ˙ திறனாய்வு அணுகுமுறைகளின் இன்றியமையாமையை மதிப்பிடுவர்
	கவின்கலைகள்	CO 1˙:தமிழகக் கலைகளின் அடிப்படைகளைத் தெரிந்துகொள்வர். CO 2˙:தமிழகக் கலைமரபுகளைஅறிந்துஅடையாளம் காண்பர். CO 3˙:கலைக் கூறுகளை இலக்கியம்,பண்பாடுஆகியவற்றோடு விளக்குவர். CO 4:கட்டிடக்கலைஓவியக்கலைநுட்பம் உணர்ந்துஅவற்றின் சிறப்பைக் கண்டறிந்து வேறுபடுத்துவர். CO 5˙:கலைகளைமதிப்பீடுசெய்வர்.
	˙ சங்கஇலக்கியம்	CO 1˙:பழமையான இலக்கியங்கள் பற்றிஅறிவர் CO 2˙:எட்டுத்தொகை நூல்களின் அடிப்படைகளைஅறிவர் CO 3˙:பத்துப்பாட்டு நூல்களின் அடிப்படைகளைஅறிந்துகொள்வர் CO 4:தமிழர்களின் இலக்கியச் செழுமையைஅறிவர் CO 5˙:பழந்தமிழரின் வாழ்வியல் விழுமியங்களைஅறிவர்

	˙ புறப்பொருள் வெண்பாமாலை	CO 1˙:பண்டையத் தமிழ் இலக்கியங்களைஅறிவஉ. CO 2˙:புறப்பொருள் மற்றும் ஆற்றுப்படை இலக்கணத்தை இலக்கியங்கள் வழி தெரிந்துகொள்வஉ. CO 3˙:பண்டையத்தமிழ் மன்னர்களின் சிறப்பினை இனம் காண்பர் CO 4: பண்டையத்தமிழ் புறப்பாடல்களின் தன்மையைஎடுத்துரைப்பஉ. CO 5:செம்மொழித்தமிழ் என்பதற்கானதன்மையைமதிப்பிடுவஉ
	˙ பேச்சுக்கலை	CO 1˙:தாய்மொழிவழியாகஅறிவியல் பற்றிச் சிந்திக்கும் திறன் பெறுதல் CO 2:தகவல் திரட்டும் நுட்பங்களையும் சூழலுக்குஏற்பமனதளவில் தயாராகுதலையும் அறிதல் CO 3˙:குறிப்பெடுப்பதைப் பற்றிஅறிதல் CO 4:மொழிஞராகவும் நல்லஆளுமைஉடையவராகவும் உயர்வர் CO 5:தனித்தன்மையுடையவராய் விளங்குதல்
	மொழிப்பயன்பாடு	CO 1˙:மொழிப் பயன்பாட்டின் அவசியத்தைஅறிவர் CO 2˙:கடிதம் எழுதும் முறையைஅறிந்துகொள்வர் CO 3˙:பத்திரிக்கைத் துறையில் மொழிப்பயன்பாட்டின் அவசியத்தைஉணர்வர் CO 4:வானொலிநிகழ்ச்சியியில் பங்கேற்கும் விதம் அறிவர் CO 5˙:தொலைக்காட்சிநிகழ்ச்சியியில் பங்கேற்கும் விதம் அறிவர்
	˙ இதழியல்	CO 1 ˙:இதழியல்பற்றியும்செய்திகள்குறித்தும்தெரிந்துகொள்கின்றனர். CO 2˙: செய்திசேகரித்தல்இவடிவாக்கம்இபக்கபுனைவுஇதலைப்புஅமைத்தல்குறித்துஅறிந்துகொள்கிறார் CO 3˙: விளம்பரங்களினால்செய்திநிறுவனங்களும்உற்பத்தியாளர்களும்பெரும்பயனைபுரிந்துகொள்கிறார் CO 4: சட்டங்கள்இதழ்களுக்குவிதித்தநெறிமுறைகளைதொகுத்துஅறிந்துகொள்கிறார் CO 5˙:இன்றைய இதழ்களின் நிலவரம் குறித்து பல்வேறு செய்திகளை உணர்ந்து கொள்கிறார்
	திரைப்படக்கலையும் விமர்சனமும்	CO 1˙:திரைப்படக்கலைவரலாறுபற்றிஅறிந்துகொள்வர் CO 2˙:திரைப்படக் கலைநுட்பங்களைப் பற்றிஅறிதல் CO 3˙:திரைப்படங்களின் வளர்ச்சிஅறிந்துகொள்வர் CO 4:திரைப்படங்களின் சமூகதொடர்பைஅறிவர் CO 5˙:புகழ்பெற்றதிரைப்பட இயக்குனர்களைஅறிவர்

	தமிழக கோயிற்கலைகள்	CO 1: சங்ககால கோயில் அமைப்பு பள்ளிப்படைக்கோயில்கள் பற்றியசெய்திகளைதெரிந்துகொள்கிறார் CO 2: பல்லவர் கால கோயில் அமைப்பு மண்டபங்கள் தூண்கள் கட்டுமான அமைப்பு ஓவியங்களில் இடம்பெரும்உருவாகிசிறப்புகள்பற்றிவிளக்கம்பெறுகிறார் CO 3: பாண்டியர்கால கோயில்அமைப்ப்பு ஓவியச்சிறப்புகளைத்ததிறன்பற்றிபுரிந்துகொள்கிறார் CO 4: சோழர்கால சிற்பங்கள் பிரதிமை உருவங்கள் முழுஉருவசிற்பங்கள்ஓவியங்களின்தனித்தன்மைகுறித்தசிறப்பானதகவல்களைதெரிந்துகொள்கிறார் CO 5:விஜயநகர நாயக்கமன்னர்களின் கலைத்திறன் தொழில்நுட்பம்கற்பனைவளம்குறித்தநுட்பங்களை உணர்ந்துஇன்புறுகிறார்