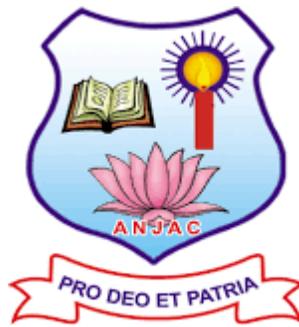


Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



PROGRAMME OUTCOMES

UNDERGRADUATE DEGREE PROGRAMMES

PROGRAMME OUTCOMES (PO)

Programme Outcomes are narrower statements that describe the capabilities the students are expected to acquire by the time of graduation. On completion of the Undergraduate Degree Programmes the student would be able to acquire the following Programme Outcomes (POs):

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

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

PO3: Critical thinking, Problem solving and Analytical reasoning : Capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies, theories and philosophies

PO4: Acquiring research-related skills, scientific reasoning and reflective thinking: A sense of inquiry and capability for asking relevant/appropriate questions, ability to recognise cause-and-effect relationships, define problems, formulate and test hypotheses, analyse, interpret and draw conclusions from data; ability to plan, execute and report the results of an experiment or investigation.

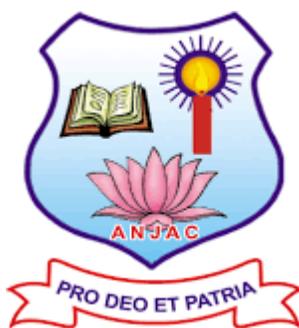
PO5:Multicultural competence with moral and ethical awareness/ reasoning: Possess knowledge of the values and beliefs of multiple cultures and gain global perspective; capability to effectively engage in a multicultural society and interact respectfully with diverse groups; ability to embrace moral/ethical values in one's life and career.

PO6:Cooperation/Team work with leadership qualities: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.

PO7: Self-directed lifelong learning with information/digital learning: Capability to use ICT in a variety of learning situations; ability to work independently, identify appropriate resources required for a project; ability to acquire knowledge and skills, through self-paced and self-directed learning aimed at personal development.

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



B.Sc Mathematics

**PROGRAMME SPECIFIC OUTCOMES AND
COURSE OUTCOMES**

B.Sc. DEGREE PROGRAMME IN MATHEMATICS

PROGRAMME CODE: UGP001

PROGRAMME SPECIFIC OUTCOMES

On successful completion of B.Sc. Mathematics Programme, the students would have

PSO1: exhibited the knowledge of classical and abstract concepts of Mathematics and apply them in various fields

PSO2: communicated Mathematical thoughts with appropriate justifications and Mathematical logic

PSO3: applied analytical and theoretical skills to develop various models and solve Mathematical problems

PSO4: recognized the power of abstraction and generalization and visualize Mathematical structures

PSO5: cultivated an attitude to mingle with diverse Mathematical community and nurture their interests

PSO6: collaborated effectively and make decisions through healthy discussions with academic peers

PSO7: solved computational problems using digital techniques.

20UMC101 - ELEMENTS OF MATHEMATICS

COURSE OUTCOMES

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

- CO1: demonstrate the basic concepts of logic, relations, functions, correlation, regression and trigonometry
- CO2: apply the mathematical induction technique and the concepts correlation and regression; use connectives in logic and expand trigonometric functions
- CO3: examine the nature of relations and functions and analyze the data by correlation and regression
- CO4: evaluate the correlation coefficient between two variables and estimate limits for some trigonometric functions
- CO5: construct regression lines and some trigonometric equations.

20UMC102 - CLASSICAL ALGEBRA

COURSE OUTCOMES

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

- CO1: expand the functions using theorems on binomial, exponential and logarithmic series
- CO2: solve polynomial and numerical equations
- CO3: identify the given series with binomial, exponential and logarithmic series and nature of the roots of an equation
- CO4: determine the sum of series and determine approximate value of a real root by Newton's method and Horner's method
- CO5: form different kinds of equations using transformations.

20UMC203 - CALCULUS

COURSE OUTCOMES

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

- CO1: demonstrate the properties of derivatives and integrals of functions
- CO2: apply differential and integration techniques to find curvatures, slope of the tangent, area and volume
- CO3: check maxima and minima of functions
- CO4: determine involute and evolute of a curve and evaluate integrals using Beta, Gamma functions
- CO5: construct various reduction formulae and transform problems to other coordinate systems.

20UMC204 - MATRICES AND VECTOR CALCULUS

COURSE OUTCOMES

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

- CO1: explain the properties of matrices and vectors
- CO2: apply the concepts of matrices and vectors to model, solve, and analyze real-world situations
- CO3: check the consistency of matrices and verify the irrotationality and solenoidality of vectors
- CO4: evaluate mathematical expressions to compute quantities that deal with linear systems, eigen value problems and vectors.
- CO5: construct examples of mathematical expressions that involve vectors, matrices and systems of linear equations.

20UMC305 - ANALYTICAL GEOMETRY

COURSE OUTCOMES

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

- CO1: illustrate the concepts of two and three dimensional geometry
- CO2: apply appropriate techniques, tools and formulas to determine measurements in geometry
- CO3: examine characteristics and properties of two and three dimensional geometric shapes
- CO4: change the equation of a conic from Cartesian into polar coordinates and *vice versa*
- CO5: formulate the equations of straight line, plane, cone, sphere and cylinder to the specific requirements.

20UMC306 - SEQUENCES AND SERIES

COURSE OUTCOMES

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

- CO1: explain the concepts of convergence and divergence of sequences and series and prove theorems related to these concepts
- CO2: apply various tests to examine the convergence of series
- CO3: distinguish between absolute convergence and ordinary convergence of series and check the behavior of sequences
- CO4: evaluate the limits of sequences and sum of the series
- CO5: discuss the convergence and divergence of sequences and series.

20UMC407 - ABSTRACT ALGEBRA

COURSE OUTCOMES

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

- CO1: demonstrate the abstract structures of algebra
- CO2: prove standard theorems of groups and rings
- CO3: check irreducibility of polynomial and verify whether a function is an isomorphism or not
- CO4: determine cosets, automorphism, kernel, maximal and prime ideals
- CO5: develop examples of groups and rings with specific criteria.

20UMP401 - COMBINATORICS

COURSE OUTCOMES

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

- CO1: explain the basic principles of combinatorial mathematics
- CO2: evaluate problems using combinations, permutations, generating functions, recurrence relations, derangements and the inclusion - exclusion principle
- CO3: analyze real life problems for various possibilities using combinatorial techniques
- CO4: make use of Hall's theorem, Konig's-Egervary max-min theorem, Latin square and rook polynomials to solve problems
- CO5: construct rook polynomials, recurrence relations and generating functions.

20UMC508 - LINEAR ALGEBRA AND LATTICE THEORY

COURSE OUTCOMES

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

- CO1: define basic concepts of vector spaces, linear transformations, inner product spaces, lattices
- CO2: prove standard theorems in Linear Algebra and Lattices
- CO3: distinguish linear independence and dependence; singular and nonsingular linear transformations; quadratic and diagonal forms, lattices and Boolean algebra
- CO4: determine basis and dimension of vector space, orthogonal basis, eigen values, eigen vector and posets
- CO5: construct orthonormal basis from a given basis; to reduce a quadratic form to diagonal form.

20UMC509 - REAL ANALYSIS

COURSE OUTCOMES

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

- CO1: explain the concepts such as real valued functions, continuity, connectedness, compactness, etc.
- CO2: prove standard theorems in real analysis
- CO3: distinguish between upper bound and lower bound; continuity and uniform continuity of a function; limit point and interior point; and bounded and totally bounded
- CO4: characterize structures of connected sets, nowhere dense sets, continuity of a function, compact sets and category of sets
- CO5: generate sets and functions of required nature

20UMC510 - MECHANICS

COURSE OUTCOMES

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

- CO1: demonstrate the concepts of statics and dynamics
- CO2: find the resultant of forces and couples and calculate various parameters of friction
- CO3: check the equilibrium of forces, couples and analyse the characteristics of motion of a projectile
- CO4: determine the resultant of a couple and a force, coefficient of friction and to solve differential equation of central orbits
- CO5: form the differential equation of central forces and solve them.

20UMC511 - DIFFERENTIAL EQUATIONS

COURSE OUTCOMES

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

- CO1: define the order, degree and various forms of differential equations
- CO2: solve differential equations in some standard forms
- CO3: classify differential equations into different types
- CO4: solve differential equations using Lagrange's methods and Laplace transforms
- CO5: form differential equations for a given application and solve.

20UMC512 - COMPREHENSION AND *viva voce* – I

COURSE OUTCOMES

Upon completion of the course the students will be able to

- CO1: explain various core concepts of Mathematics
- CO2: identify and apply suitable formulas and laws
- CO3: compare related concepts of Mathematics
- CO4: assess different methods for limitations
- CO5: construct examples for given situation.

20UMP502 – COMPUTATIONAL MATHEMATICS WITH SAGEMATH

COURSE OUTCOMES

Upon completion of the course the students will be able to

- CO1: demonstrate expressions, symbolic variables and symbolic expressions involved in SageMath
- CO2: apply SageMath techniques to find derivative of a function, compute operations on matrices and solve simple differential equations
- CO3: analyze sequential concepts and derivatives of functions
- CO4: evaluate differential and integral equations, limit of a sequence, determine the power series expansion of a given function and basis of a matrix
- CO5: develop programming skill to find derivatives, partial derivatives, integrals and limits of a function.

20UMC613 - COMPLEX ANALYSIS

COURSE OUTCOMES

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

- CO1: demonstrate differentiation and integration of functions of a complex variable
- CO2: make use of various transformations to find the images of given regions
- CO3: analyze complex functions for poles and singularities and know consequences of continuity
- CO4: evaluate integrals using Cauchy's theorem, Cauchy's integral formula and evaluation of real definite integrals by residue theorem
- CO5: construct an analytic function using various methods.

20UMC614 - OPERATIONS RESEARCH

COURSE OUTCOMES

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

- CO1: demonstrate the basic concepts of LPP, game theory, queuing models and networks
- CO2: make use of different methods to get optimality in LPP, TP, AP and games
- CO3: check the existence of alternate / infeasible / unbounded solutions
- CO4: evaluate the solution of primal using duality, optimal solution by Modi method and characteristics of queuing system
- CO5: convert possible real life problems into OR model.

20UMC615 - MATHEMATICAL STATISTICS

COURSE OUTCOMES

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

- CO1: explain the principles and procedures of probability and statistics
- CO2: apply Baye's theorem, properties of variance, mean, median and mode in solving the problems of Probability and statistics
- CO3: identify the relevant distribution and test the hypothesis in large and small samples
- CO4: evaluate the probabilities, expected values, marginal and conditional pdf for one dimensional and two dimensional random variables
- CO5: reveal the correctness of hypothesis using test of significance.

20UMC616 - INTERNSHIP
COURSE OUTCOMES

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

- CO1: explain the scope of Mathematics and its ethical issues of the chosen field
- CO2: use the proper Mathematical tool in the work environment
- CO3: identify the different ways of solving problems
- CO4: prepare a flow chart / model about the nature of job
- CO5: draft and submit project report.

20UMC617 - COMPREHENSION AND *viva voce* - II
COURSE OUTCOMES

Upon completion of the course the students will be able to

- CO1: explain various core concepts of Mathematics
- CO2: identify and apply suitable formulas and laws
- CO3: compare related concepts of Mathematics
- CO4: assess different methods for limitations
- CO5: construct examples for given situation.

20UML601 - ANALYTIC NUMBER THEORY
COURSE OUTCOMES

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

- CO1: demonstrate the concepts and state important theorems and conjectures in number theory
- CO2: apply various concepts and techniques of number theory in real life situation such as check digits, ISBN system etc.
- CO3: analyze the solutions of system of linear congruences and the existence of primitive roots
- CO4: determine the solutions of different number theoretic functions
- CO5: discuss the relation connecting $\vartheta(x)$ and $\pi(x)$ and various forms of prime number theorem.

20UML602 - PROJECT AND *viva voce*
COURSE OUTCOMES

Upon completion of the course the students will be able to

- CO1: demonstrate the core concepts of Mathematics
- CO2: apply the Mathematical knowledge in the problem chosen
- CO3: express their ideas to anyone/group effectively
- CO4: assess the existing development in Mathematics
- CO5: develop in-depth study on a chosen field

20UMA101 - BUSINESS MATHEMATICS

COURSE OUTCOMES

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

- CO1: explain the basic mathematical tools and techniques
- CO2: experiment with LP model by graphical method, apply enumeration techniques, solve some simple problems related to business and economics
- CO3: analyze the concepts of relation using diagrammatical and matrix representations
- CO4: evaluate profit and revenues in business problems using the techniques of differentiation and integration
- CO5: solve economic revenue problems.

20UMA102 - MATHEMATICAL FOUNDATION FOR COMPUTER SCIENCE

COURSE OUTCOMES

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

- CO1: explain sets, relations, functions and discrete structures
- CO2: apply principles of mathematical induction, statistical tools and use connectives
- CO3: check the consistency of system of equations, verify a statement as tautology or not and a mapping as a homomorphism or not
- CO4: solve problems in matrices, mathematical logic and basic statistics
- CO5: develop special matrices.

20UMA203 - BUSINESS STATISTICS

COURSE OUTCOMES

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

- CO1: demonstrate various classifications of data
- CO2: apply statistical rules to solve business and economical problems
- CO3: compare the data using correlations and regressions and test the consistency of data by the methods in index number
- CO4: evaluate the central measures, variation, dispersion, correlation and regression for a given discrete or continuous data
- CO5: manipulate the quantitative characteristics of data.

20UMA204 - OPERATIONS RESEARCH

COURSE OUTCOMES

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

- CO1: demonstrate the basic concepts in LPP, game theory, queuing models and networks
- CO2: make use of different methods to get optimality in LPP, TP, AP and games
- CO3: check the existence of alternate / infeasible / unbounded solutions
- CO4: evaluate the solution of primal using duality, optimal solution by Modi method and characteristics of queuing system
- CO5: convert possible real life problems into OR model.

20UMA305 - ALGEBRA AND CALCULUS FOR PHYSICAL SCIENCES

COURSE OUTCOMES

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

- CO1: write expansions using binomial, logarithmic and exponential theorems.
- CO2: compute summation of series, radius and centre of curvature of a curve and directional derivative of a function
- CO3: examine the solenoidal and irrotationality of a vector
- CO4: evaluate line, surface and volume integrals using standard theorems, double and triple integrals using change of variable techniques
- CO5: establish various reduction formulae.

20UMA306 - COMPUTATIONAL TECHNIQUES

COURSE OUTCOMES

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

- CO1: acquire the basic knowledge of the statistical measures such as correlation and regression, difference operators and numerical techniques
- CO2: apply various interpolation techniques to find the value of the given function at a particular point
- CO3: analyze the data by Correlation and Regression; examine the maxima and minima of the interpolating polynomial and examine the relation between difference operators
- CO4: evaluate correlation coefficient, numerical differentiation and numerical integration by adapting appropriate method
- CO5: construct regression lines; develop approximate numerical solution for ordinary differential equations.

20UMA407 - ANALYTICAL SOLID GEOMETRY AND DIFFERENTIAL EQUATIONS FOR PHYSICAL SCIENCES

COURSE OUTCOMES

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

- CO1: explain the basic concepts of analytical geometry and differential equation
- CO2: implement the methods of Laplace transforms to solve differential equations
- CO3: check for coplanarity of straight lines; classify the standard forms of partial differential equations
- CO4: estimate the shortest distance between two lines and find the solution of differential equations
- CO5: formulate partial differential equations; transform differential equations from one form to another.

20UMA408 - DISCRETE MATHEMATICS

COURSE OUTCOMES

Upon Completion of the course, the students will be able to

- CO1: demonstrate the concepts of relations, functions, lattices and graphs
- CO2: write a statement using logical notation and determine if the statement is valid or not
- CO3: verify simple mathematical properties of functions, relations, groups, lattices, Boolean algebra and graphs
- CO4: compute normal forms and deduce the equivalence of logical formulas
- CO5: create statements, formulas, sets, relations, functions, lattices and graphs.

20UME401 - CONTINUOUS AND DISCRETE TRANSFORMS

COURSE OUTCOMES

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

- CO1: write given function in terms of sine and cosine functions in Fourier series and also get knowledge in Fourier transforms
- CO2: solve finite difference equations using Z-transforms and Hankel transforms
- CO3: distinguish continuous and discrete transforms
- CO4: determine series representation of a function using different transformations
- CO5: discuss how general functions can be decomposed into trigonometric or exponential functions with definite frequencies.

20UME502 - ASTRONOMY

COURSE OUTCOMES

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

- CO1: demonstrate the basic properties of the Sun and other celestial objects
- CO2: apply basic physical principles from a broad range of topics in physics to astronomical situations
- CO3: examine the concepts of astronomical refraction, age, phase of the moon, geocentric paradox and eclipses
- CO4: formulate astronomical problems in mathematical terms and apply analytical and numerical methods towards its solution
- CO5: discuss various astronomical phenomena and develop models.

20UME603 - GRAPH THEORY

COURSE OUTCOMES

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

- CO1: demonstrate basic concepts in graph theory
- CO2: prove standard theorems by applying proper logic
- CO3: characterize various graphs
- CO4: evaluate connectivity, chromatic number and chromatic polynomial of a graph
- CO5: construct graphs of specific nature

20UMN201 - QUANTITATIVE APTITUDE

COURSE OUTCOMES

Upon Completion of the course, the students will be able to

- CO1: explain basic knowledge of quantitative aptitude
- CO2: use arithmetical, algebraic and statistical methods to solve problems
- CO3: analyze the data and hence derive the solution
- CO4: demonstrate their competence and confidence to approach the problem
- CO5: develop and evaluate inferences and predictions that are based on data

20UMJ601 - STATISTICAL TOOLS WITH R-PROGRAMMING

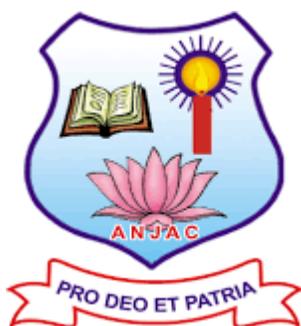
COURSE OUTCOMES

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

- CO1: explain various statistical tools, commands and functions in R language
- CO2: apply the programming knowledge to enter, import, access and represent the data sets by R codes
- CO3: distinguish the commands of mean, median, mode, range, quartiles, deviations, coefficients of correlation and hypothesis tests for quantitative data
- CO4: handle large data sets and find central measures, dispersion, correlation, regression and probabilities for it
- CO5: plot different values of mean for binomial, Poisson and normal distributions using R.

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



B.Sc Physics

PROGRAMME SPECIFIC OUTCOMES

AND

COURSE OUTCOMES

B.Sc. DEGREE PROGRAMME IN PHYSICS

Programme Code: UGP002

PROGRAMME SPECIFIC OUTCOMES

On successful completion of B.Sc., Physics Programme, the students would have

PSO1: learnt the basic concepts and principles of Physical sciences

PSO2: acquired the necessary communication skills to communicate their knowledge

PSO3: understood various concepts and apply it to solve problems related to Physics

PSO4: obtained the ability to carry out experiments, analyse and interpret the results

PSO5: developed the ability to understand values of Physics for contribution to the betterment of society

PSO6: built the ability to work in groups to solve problems related to Physics described the capability to use ICT and other related resources for self-study and for life-long learning

20UPC101 - MECHANICS AND PROPERTIES OF MATTER

COURSE OUTCOMES

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

CO1: know the laws of mechanics

CO2: apply the laws of mechanics to various physical systems

CO3: compare Poisson ratio for different materials

CO4: evaluate the value of 'g' at various places

CO5: design simple experiments related to mechanics and properties of matter

20UPC202 - THERMODYNAMICS AND STATISTICAL PHYSICS

COURSE OUTCOMES

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

CO1 : explain the basic principles and laws of thermodynamics

CO2 : apply various laws of thermodynamics

CO3 : explicate the laws of thermodynamics for macroscopic and microscopic systems

CO4 : evaluate the relation between thermodynamic parameters such as pressure, temperature, entropy and heat capacity from the distribution function

CO5 : develop critical thinking and appropriate problem solving skills

20UPC203 - CORE PRACTICAL – I (Mechanics, Properties of Matter and Heat)

COURSE OUTCOMES

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

- CO1: find 'g' value and centre of mass for various objects
- CO2: apply the theories learnt and skills acquired to do the experiments
- CO3: compute the coefficients involved in various elastic moduli
- CO4: estimate the errors in the values of the results of various experiments
- CO5: design simple experiments to measure physical quantities

20UPC304 - ELECTRICITY AND MAGNETISM

COURSE OUTCOMES

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

- CO1: recall the use of Coulomb's law and Gauss' law for the electrostatic force
- CO2: apply the knowledge of electricity and magnetism to explain natural physical processes and related technological advances.
- CO3: analyze electric circuits to compute currents and voltage drops, both in stationary and time-dependent situations
- CO4: estimate electric field from electric potential and vice versa
- CO5: develop problem solving skills in electromagnetism

20UPC305 - INTEGRATED ELECTRONICS

COURSE OUTCOMES

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

- CO1: know the working of analog and digital circuits
- CO2: select amplifiers, oscillators and flip-flops depending on application
- CO3: analyze the analog and digital circuits
- CO4: solve problems in electronics
- CO5: design transistor, operational amplifiers and timers

20UPC406 - OPTICS

COURSE OUTCOMES

Upon completion of the course the students will be able to

- CO1: explain the basic properties of light
- CO2: apply the properties of light to characterize materials
- CO3: differentiate between Fraunhofer and Fresnel diffraction
- CO4: evaluate the effect of polarization, interference and diffraction on the intensity of the incident light
- CO5: design optical devices

20UPC407 - CORE PRACTICAL – II (Electricity, Magnetism and Optics)

COURSE OUTCOMES

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

- CO1: explain the construction and working principle of the devices used in the experiments
- CO2: apply knowledge of Mathematics and Physics to carry out experiments
- CO3: examine various experimental methods and correlate with theory
- CO4: test different measuring devices, monitor and record data with precision
- CO5: develop skills in a systematic way to make measurements by minimizing errors

20UPO401 - INTRODUCTION TO NANOSCIENCE

COURSE OUTCOMES

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

- CO1: identify various modern engineering nanomaterials
- CO2: explain the properties of different forms of nanostructured materials
- CO3: illustrate safety and technological issues associated with nanoscience and nanotechnology
- CO4: evaluate the impact of nanomaterials on environment
- CO5: outline the applications of nanomaterials in various fields

20UPC508 - CONCEPTS OF MODERN PHYSICS

COURSE OUTCOMES

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

- CO1: explain the concepts of modern Physics
- CO2: calculate the effects of special relativity on mass and energy of fast moving objects
- CO3: compare and correlate theoretical predictions with experimental measurements
- CO4: determine the behavior of many electron system
- CO5: discuss the band structure of metals and non-metals

20UPC509 - SPECTROSCOPY

COURSE OUTCOMES

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

- CO1: list the different types of spectra
- CO2: examine the molecular structure from their spectrum
- CO3: evaluate rotational constant, vibrational frequency and g factor of a molecule
- CO4: apply suitable instrumental techniques to measure the spectrum
- CO5: express spectroscopic properties in terms of molecular symmetry

20UPC510 - PROGRAMMING IN C++

COURSE OUTCOMES

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

- CO1 : recall identifiers, various types of expressions and functions in C++
- CO2 : identify ways to solve computational problems in Physics
- CO3 : examine any C++ program code for errors and debug the code
- CO4 : assess the extendibility of a program developed using object oriented concepts
- CO5 : create classes and functions to real life problems

20UPC511 - CORE PRACTICAL - III (Analog Electronics and C++)

COURSE OUTCOMES

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

- CO1: recall the functions of electronic components
- CO2: design and construct simple analog circuits
- CO3: analyse basic characteristics of operational amplifier and transistor
- CO4: write and debug C++ programs
- CO5: develop observational skills and report writing

20UPC512 - COMPREHENSION AND *viva voce* - I

COURSE OUTCOMES

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

- CO1 : show in-depth understanding of the subjects studied
- CO2 : establish confidence in their knowledge of the subject matter
- CO3 : analyse qualitative and quantitative data systematically to arrive at a solution
- CO4 : justify the benefits of multiple choice questions in Physics
- CO5 : plan their study of the subject to tackle multiple choice questions

20UPO502 - MATHEMATICAL PHYSICS

COURSE OUTCOMES

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

- CO1 : examine proper variable changes required to solve a given problem
- CO2 : compute the coefficients involved in mathematical physics problems
- CO3 : illustrate the concepts involved in mathematical techniques
- CO4 : recommend mathematical concepts needed for a proper understanding of physics.
- CO5 : create mathematical formulations for physics problems

20UPC613 - NUCLEAR PHYSICS

COURSE OUTCOMES

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

- CO1 : recall the basic properties of nucleus, nuclear models and radioactivity
- CO2 : explain the mechanism and kinematics of nuclear reactions
- CO3 : analyze the different modes of decay and interaction of nuclear radiations with matter
- CO4 : estimate the achievements and failures of various nuclear models
- CO5 : justify the advantages of nuclear power generation

20UPC614 - COMPUTATIONAL PHYSICS

COURSE OUTCOMES

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

- CO1: learn various mathematical techniques related to computational Physics
- CO2: apply mathematical techniques to physical problems
- CO3: analyze periodic functions by Fourier series and learn Fourier transform
- CO4: select different numerical methods to solve different types of physical and technical problems
- CO5: develop and write simple programs to solve physical problems

20UPC615 - CORE PRACTICAL - IV (Digital Electronics & Computational Physics)

COURSE OUTCOMES

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

- CO1: recall the functions of electronic components
- CO2: apply Boolean laws and K-maps to simplify digital circuits
- CO3: discover the operation of different digital ICs
- CO4: improve programming proficiency
- CO5: develop user friendly programs in C++

20UPC616 - INTERNSHIP

COURSE OUTCOMES

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

- CO1: integrate theory and practice and establish contacts for career prospects
- CO2: develop interpersonal communication and other critical skills required for a job
- CO3: learn to appreciate work and its function in the economy and develop work habits and attitudes
- CO4: build a record of work experience and explore career alternatives prior to graduation
- CO5: write down a report of performance outcomes related to their job assignment

20UPC617 - COMPREHENSION AND *viva voce* - II

COURSE OUTCOMES

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

- CO1 : show in-depth understanding of the subjects studied
- CO2 : establish confidence in their knowledge of the subject matter
- CO3 : analyse qualitative and quantitative data systematically to arrive at a solution
- CO4 : justify the benefits of multiple choice questions in Physics
- CO5 : plan their study of the subject to tackle multiple choice questions

20UPL601 - MICROPROCESSOR

COURSE OUTCOMES

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

- CO1 : explain the architecture, functions and instruction set of microprocessor 8085
- CO2 : apply the instruction set of the microprocessor to write simple programs
- CO3 : analyse an assembly language program and apply it to other practical situations
- CO4 : evaluate various schemes and appropriate instructions in programming
- CO5 : develop skills to interface a microprocessor to an I/O device

20UPL602 - PROJECT AND *viva voce*

COURSE OUTCOMES

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

- CO1 : demonstrate a sound technical knowledge in their selected project topic
- CO2 : undertake problem identification, formulation and solution
- CO3 : break down a complex work into many simple tasks
- CO4 : estimate the physical resources required to carry out a project
- CO5 : develop plans with relevant people to achieve the goals of the project

20UPA101 - CLASSICAL PHYSICS

COURSE OUTCOMES

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

- CO1: explain the principles of elasticity through the study of various moduli of elasticity
- CO2: relate the general properties of gases to the kinetic theory
- CO3: compare the fundamental phenomena of interference and diffraction
- CO4: justify bright and dark bands of light by the principle of superposition of waves
- CO5: develop the knowledge to explain natural physical processes by applying the concepts properties of matter, heat and optics

20UPA102 - DIGITAL ELECTRONICS

COURSE OUTCOMES

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

- CO1 : acquire knowledge related to digital fundamentals
- CO2 : relate truth tables of various digital circuits
- CO3 : analyse the working of various digital circuits
- CO4 : inspect combinational and sequential data processing circuits
- CO5 : design digital circuits for various applications

20UPA203 - MODERN PHYSICS AND ELECTRONICS

COURSE OUTCOMES

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

- CO1: explain the concepts of modern Physics
- CO2: make use of modern concepts of physics to solve problems.
- CO3: distinguish different atomic models
- CO4: justify the dual nature of matter and waves
- CO5: design transistor amplifiers and logic circuits

20UPA204 - ALLIED PHYSICS PRACTICAL

COURSE OUTCOMES

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

- CO1: use vernier caliper and screw gauge for various measurements
- CO2: apply the concepts of Physics in a practical situation
- CO3: analyse the results of various Physics experiments
- CO4: evaluate various physical properties of materials through experiments
- CO5: construct logic circuits using universal NAND or NOR gates.

20UPA205 - MICROPROCESSOR AND MICROCONTROLLER

COURSE OUTCOMES

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

- CO1 : know the architecture and functions of a microprocessor and a microcontroller
- CO2 : classify the instruction set of 8085 microprocessor
- CO3 : differentiate microprocessors from microcontrollers
- CO4 : evaluate various schemes to write programs
- CO5 : design interfacing circuits to send or receive data to or from I/O ports

20UPA206 - ALLIED PRACTICAL
COURSE OUTCOMES

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

- CO1 : draw digital circuit diagrams using ICs
- CO2 : tabulate possible input combinations and expected output
- CO3 : explicate truth tables of various logical circuits
- CO4 : write and execute simple programs in 8085 assembly language
- CO5 : design multiplexing and de-multiplexing circuits

20UPE401 - ENERGY PHYSICS
COURSE OUTCOMES

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

- CO1: know the various sources of conventional and non-conventional energy
- CO2: interpret the different energy conversion methods and its applications
- CO3: distinguish conventional and non-conventional energy sources
- CO4: debate the challenges and problems associated with the use of various energy sources
- CO5: discuss the need of renewable energy resources for both domestic and industrial application

20UPE502 - BIOPHYSICS
COURSE OUTCOMES

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

- CO1 : explain the structure of biomolecules and basics of bioelectronics
- CO2 : apply fundamental bioelectronic concepts to neural communication
- CO3 : analyse the purpose of various microscopic and imaging techniques
- CO4 : appraise the information storage ability in biological systems
- CO5 : compile the effect of radiations on the biological systems

20UPE603 - COMMUNICATION PHYSICS
COURSE OUTCOMES

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

- CO1: recollect frequency range in communication systems
- CO2: classify the different types of modulations
- CO3: analyse various satellite launching methods
- CO4: determine techniques to retrieve signal at the receiver
- CO5: propose a communication method for a particular application

20UPN201 - BASIC PHYSICS

COURSE OUTCOMES

Upon completion of the course the students will be able to

- CO1 : learn the basics of units and dimensions in physics.
- CO2 : calculate the magnetic field produced by magnetic dipoles and electric currents
- CO3 : differentiate statics and dynamics
- CO4 : justify the importance of Mathematics in learning Physics
- CO5 : develop a conceptual understanding of the fundamental physical principles

20UPJ601 - ELECTRICAL WIRING

COURSE OUTCOMES

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

- CO1: explain the concepts of current, voltage and power
- CO2: identify the live, neutral and earth terminals on power Socket
- CO3: test and identify faults in domestic wiring
- CO4: measure various electrical parameters using multi-meter
- CO5: construct a wiring for a house

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



B.Sc Chemistry

PROGRAMME SPECIFIC OUTCOMES

AND

COURSE OUTCOMES

B.Sc. DEGREE PROGRAMME IN CHEMISTRY

PROGRAMME CODE: UGP003

PROGRAMME SPECIFIC OUTCOMES

On successful completion of B.Sc., Chemistry Programme, the students would have

PSO1: gained fundamental knowledge in organic, inorganic and physical chemistry

PSO2: acquired the ability to communicate the basic concepts of chemistry in a clear and concise manner

PSO3: attained the skills to analyze the compounds qualitatively and quantitatively by laboratory techniques

PSO4: developed the confidence to execute and report the results of an experiment

PSO5: incorporated their knowledge of chemistry to conserve the environment

PSO6: able to work effectively and respectfully as a team in an organization

PSO7: moulded themselves to appear for competitive examinations and to also become entrepreneur.

20UCC101 - THEORETICAL CHEMISTRY

COURSE OUTCOMES

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

- CO1: outline the various atomic models, chemical bonding and IUPAC nomenclature of organic compounds
- CO2: compute oxidation number, bond order and molecular formula
- CO3: compare the periodic properties of s - block elements, types of bonding and various organic reactions
- CO4: estimate the hardness of water, ozone, hydrogen peroxide and interpret the electronic effects
- CO5: discuss the dual character of electron and construct MO diagram of diatomic molecules

20UCC202 - HYDROCARBONS, p-BLOCK ELEMENTS AND GASEOUS STATE

COURSE OUTCOMES

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

- CO1: summarize the properties of aliphatic and aromatic hydrocarbons, alcohols and ethers
- CO2: solve the numerical problems on velocities, critical constants of gaseous molecules and identify the aromaticity of organic compounds
- CO3: analyse the periodic properties of IIIA, IVA and VA group elements
- CO4: justify the mechanism for reactions of aromatic compounds and the need for real gas equations
- CO5: discuss hydroxyl and alkoxy groups and elaborate the structure of boranes

20UCC203 - CORE PRACTICAL – I (Inorganic Qualitative Analysis)

COURSE OUTCOMES

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

- CO1: explain the procedure of qualitative analysis of inorganic salts and toxicity of various chemicals
- CO2: identify the anions and cations of unknown inorganic salt mixture
- CO3: analyse the anions into interfering and non-interfering radicals, cations into groups
- CO4: justify the confirmation test in inorganic qualitative analysis
- CO5: adapt the safety procedures while handling chemicals in laboratory and first-aid methods in case of accidents

20UCC304 - CARBONYL COMPOUNDS, HALOGENS AND THERMODYNAMICS

COURSE OUTCOMES

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

- CO1: explain the preparation and properties of carbonyl compounds, halogen derivatives and polynuclear aromatic hydrocarbons and the laws of thermodynamics
- CO2: apply the concepts of thermochemistry to calculate heat capacity and enthalpy of the system.
- CO3: compare E_1 and E_2 reactions, S_N1 and S_N2 reactions and properties of alkyl and aryl halides
- CO4: estimate the available chlorine in bleaching powder
- CO5: discuss the structures of oxides of halogens and interhalogen compounds and mechanism of nucleophilic addition to carbonyl compounds

20UCC305 - CARBOXYLIC ACIDS, OXYGEN FAMILY AND LIQUID STATE

COURSE OUTCOMES

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

- CO1: explain the electrical, optical properties of colloids and chemistry of carboxylic acids
- CO2: apply chromatographic techniques to separate organic compounds
- CO3: categorize the theories of acids and bases
- CO4: criticize the importance of oxygen family and zero group elements
- CO5: elaborate the physical properties of liquids, micelles and various purification techniques.

20UCC406 - HETEROCYCLIC COMPOUNDS, d-BLOCK ELEMENTS AND EQUILIBRIUM STATES

COURSE OUTCOMES

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

- CO1: explain the chemistry of transition elements and heterocyclic compounds
- CO2: identify the CST and partition coefficient of binary liquids
- CO3: compare the chemical properties of nitrogen compounds
- CO4: determine the equilibrium constant for reactions and estimate the amount of urea
- CO5: discuss the phase diagrams of one and two component systems and synthetic applications of diazo compounds.

20UCC407 - CORE PRACTICAL – II

(Volumetric Estimation and Organic Qualitative Analysis)

COURSE OUTCOMES

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

- CO1: explain basic principles of volumetric titrations and organic compound analysis
- CO2: apply the principles to carry out experiments on organic synthesis
- CO3: distinguish the functional group present in organic compounds
- CO4: estimate the unknown amount of sample present in the given solution
- CO5: adapt the chemistry practical knowledge to design new the chemistry experiments.

20UCO401 - COMPUTER APPLICATIONS IN CHEMISTRY

COURSE OUTCOMES

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

- CO1: outline the basic components of C- Language
- CO2: compute control statements in C-programme
- CO3: compare the functions and arrays for writing the C-programme
- CO4: estimate the programme level by writing chemistry related C-programmes
- CO5: discuss visualization and drawing of chemical structures using ChemDraw software

20UCC508 - MOLECULAR REARRANGEMENTS AND STEREOCHEMISTRY

COURSE OUTCOMES

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

- CO1: explain the molecular rearrangement, stereoisomerism and tautomerism
- CO2: demonstrate the conformational and configurational isomers of organic compounds
- CO3: distinguish the properties of monosaccharides and structure of di- and polysaccharides
- CO4: determine the types of tautomerism in a molecule and the structure of mono-, disaccharides
- CO5: discuss the mechanism of molecular rearrangement, theories of colour and constitution.

20UCC509 - SOLID STATE AND COORDINATION CHEMISTRY

COURSE OUTCOMES

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

- CO1: illustrate the basic properties of crystals and solids.
- CO2: apply the knowledge of VBT, CFT and LFT to justify the properties of coordination and organometallic compounds.
- CO3: examine the structure and stability of inorganic complexes.
- CO4: appraise the types of crystals and coordination compounds.
- CO5: discuss the arrangement of atoms in crystals and solids and reactions of organometallic compounds.

20UCC510 - GROUP THEORY AND REACTION KINETICS

COURSE OUTCOMES

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

- CO1: explain the theories of chemical kinetics and postulates of quantum mechanics
- CO2: apply the principles of colligative properties to physical chemistry experiments
- CO3: compare the various types of catalysts
- CO4: determine the pH of solutions
- CO5: predict the point group of simple molecules

20UCC511 - CORE PRACTICAL – III

(Physical Chemistry Practical)

COURSE OUTCOMES

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

- CO1: explain the basic principles of electrochemistry and non-electrochemistry experiments
- CO2: apply the principle to carryout physical chemistry experiments
- CO3: analyse the data of the experiments
- CO4: interpret the result of the experiments
- CO5: design physical chemistry related experiments.

20UCC512 - COMPREHENSION AND *viva voce* - I

COURSE OUTCOMES

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

- CO1: summarize the concepts of organic, inorganic and physical chemistry
- CO2: compute the problems related to organic, inorganic and physical chemistry
- CO3: infer the appropriate answers for the multiple choice questions through online
- CO4: defend the questions in *viva voce* examination
- CO5: improve their confidence level to attend interview and group discussion

20UCO502 - GREEN AND SUPRAMOLECULAR CHEMISTRY

COURSE OUTCOMES

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

- CO1: explain the various organic transformations through green chemistry experiments
- CO2: apply the concept of green chemistry principles and supramolecules in various chemical reactions
- CO3: list the supramolecular host-guest compounds
- CO4: appraise the significance of green solvents and supramolecular assembly
- CO5: discuss the various supramolecular interactions.

20UCC613 - NATURAL PRODUCTS AND ELECTROCHEMISTRY

COURSE OUTCOMES

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

- CO1: explain the basic principles of retrosynthesis and laws of electrochemistry
- CO2: identify the applications of electrolytic, galvanic cells and importance of biomolecules
- CO3: distinguish between conductance and EMF of electrochemical cells
- CO4: determine the structure of alkaloids and terpenes
- CO5: discuss the applications of fuel cells and the structure of proteins.

20UCC614 - ANALYTICAL AND NUCLEAR CHEMISTRY

COURSE OUTCOMES

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

- CO1: explain the principles of volumetric, gravimetric and thermo analytical methods
- CO2: identify the biological role of metal ions and radioactivity
- CO3: analyze the applications of Polarography, TGA and DTA
- CO4: appraise the properties and reactions of the rare earth elements Hb and MB
- CO5: Discuss the theories and applications of nuclear reactions

20UCC615 - CORE PRACTICAL – IV
(Gravimetric Estimation and Organic Preparation)

COURSE OUTCOMES

Upon Completion of the course, the students will be able to

- CO1: demonstrate the estimation of metal ions by gravimetrically and preparation of organic compounds.
- CO2: apply the knowledge on reaction conditions for the synthesis of new organic compounds and estimation of metal ions.
- CO3: analyze the course of the reaction and purity of product by thin layer chromatography.
- CO4: estimate the bivalent metal ions using oxinate and chromate.
- CO5: design experimental set up for the estimation of metal ions and preparation of organic compounds.

20UCC616 – INTERNSHIP

COURSE OUTCOMES

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

- CO1: relate the gained theoretical knowledge with the projects in industry / institutions
- CO2: solve the problems related to experimental techniques
- CO3: analyze the synthesized samples through various instruments
- CO4: estimate the budget for the development of reactions in large scale production
- CO5: discuss the mechanistic aspects of chemical reactions through industrial view.

20UCC617 - COMPREHENSION AND *viva voce* - II

COURSE OUTCOMES

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

- CO1: summarize the concepts of organic, inorganic and physical chemistry
- CO2: compute the problems related to organic, inorganic and physical chemistry
- CO3: infer the appropriate answers for the multiple choice questions through online
- CO4: defend the questions in *viva voce* examination
- CO5: improve their confidence level to attend interview and group discussion.

20UCL601 - NANO CHEMISTRY AND SPECTROSCOPY

COURSE OUTCOMES

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

- CO1: explain the synthesis and properties of nanomaterials
- CO2: make use of the mechanism of photochemical reactions
- CO3: analyse the number of IR and Raman bands for simple molecules
- CO4: appraise the significance of chemical shift, coupling constant and nanomaterials
- CO5: discuss the applications of UV, IR and NMR spectroscopic techniques.

20UCL602 - PROJECT AND *viva voce*

COURSE OUTCOMES

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

- CO 1: relate the experiments in connection with the projects undertaken
- CO 2: plan for literature survey, experimental work and documentation of results
- CO 3: analyze the compounds using instruments effectively
- CO4: defend the questions raised in *viva voce* examination
- CO5: develop the experiments independently in the thrust areas of Chemistry

20UCA101 - CHEMISTRY FOR PHYSICISTS – I

COURSE OUTCOMES

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

- CO1: explain the fundamental concepts in stereochemistry, chemical bonding and adsorption
- CO2: identify the elements like nitrogen, sulphur and halogens using Lassaigne's method
- CO3: classify the organic reactions and polymers
- CO4: estimate the hardness of water and determine the pH of solutions
- CO5: construct the MO energy level diagram of diatomic molecules.

20UCA202 - CHEMISTRY FOR PHYSICISTS – II

COURSE OUTCOMES

Upon completion of the course the students will be able to

- CO1: explain the theories of chemical kinetics and laws of photochemistry
- CO2: identify the method of extraction of metals from its ore
- CO3: classify the types of catalyst and colloids
- CO4: determine the various types of conductance of solution
- CO5: construct the galvanic cell and measure the emf

20UCA203 - CHEMISTRY PRACTICAL FOR PHYSICISTS

COURSE OUTCOMES

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

- CO1: explain the basic principles of volumetric titration and organic compound analysis
- CO2: apply the principles to carry out experiments
- CO3: examine the functional groups present in organic compounds
- CO4: estimate the unknown amount of sample present in the given solution
- CO5: adapt the chemistry practical knowledge to carry out physical experiments.

20UCA304 - CHEMISTRY FOR BIOLOGISTS – I

COURSE OUTCOMES

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

- CO1: explain the preparation and properties of heterocyclic compounds and various methods involved in metal extraction
- CO2: apply the knowledge of acid base concepts and nuclear chemistry
- CO3: categorize the biomolecules, insecticides, fungicides and fertilizers
- CO4: appraise the applications of radioactivity and biomolecules
- CO5: discuss the structure of monosaccharides and polysaccharides.

20UCA405 - CHEMISTRY FOR BIOLOGISTS– II

COURSE OUTCOMES

Upon completion of the course the students will be able to

- CO1: explain the types of chemical bond, organic reactions and catalysis
- CO2: apply the theories of chemical bonding and clinical uses of drug molecules
- CO3: examine the stereochemistry of organic compounds, photochemical reactions and biological importance of vitamin and hormones
- CO4: criticize the photophysical, chemical processes and various water softening methods
- CO5: discuss the methods of detection of elements, hardness of water and types of organic reactions.

20UCA406 - CHEMISTRY PRACTICAL FOR BIOLOGISTS

COURSE OUTCOMES

Upon completion of the course the students will be able to

- CO1: explain the basic principles of volumetric titration and organic compound analysis
- CO2: apply the principles to carry out experiments.
- CO3: examine the functional group present in organic compounds
- CO4: estimate the unknown amount of sample present in the given solution
- CO5: adapt the chemistry practical knowledge to carry out biochemical experiments.

20UCE401 - MEDICINAL CHEMISTRY

COURSE OUTCOMES

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

- CO1: explain the nature of drugs, general pharmacology and constituents of blood
- CO2: identify the therapeutical uses of anesthetics, analgesics, antibiotics and sulpha drugs
- CO3: compare the mechanism of action of antibiotics and sulpha drugs
- CO4: justify the different first aid for accidents and various agents for diagnostic tests
- CO5: adapt the gained knowledge in pharmaceutical industries.

20UCE502 - APPLIED CHEMISTRY

COURSE OUTCOMES

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

- CO1: explain the preparation of cement, soap, detergents, paint, paper and leather
- CO2: identify the raw materials of industrial products
- CO3: examine the ill effects of fertilizers, pesticides and role of elements in plant growth
- CO4: appreciate the importance of chemistry in petroleum refinery
- CO5: develop small scale industrial products.

20UCE603 – POLYMER CHEMISTRY AND RENEWABLE ENERGY

COURSE OUTCOMES

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

- CO1 : list the factors affecting T_g of the polymers
- CO2 : identify the chemistry of chain polymerisation
- CO3 : categorize the commercial polymers based on their importance
- CO4 : appraise the importance of fuel cells and biodegradable polymers
- CO5 : discuss the advantages and disadvantages of H₂ as fuel and geothermal energy

20UCN201 - DRUGS AND COSMETICS

COURSE OUTCOMES

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

- CO1: outline the various common diseases and medicinal plants
- CO2: identify the first aid for injuries and drugs for common diseases
- CO3: list the chemotherapy of drugs and the raw materials for cosmetics
- CO4: criticize the preparation of different types of soaps and cosmetics
- CO5: elaborate the applications of drugs and cosmetics

20UCJ601 – MINI ANALYTICAL CHEMISTRY

COURSE OUTCOMES

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

- CO1: understand the techniques in the manufacture of matches
- CO2: make use of common precautions and safety procedures of fireworks
- CO3: examine the defects in matches
- CO4: estimate the quality of matches and fireworks
- CO5: discuss the functions of raw materials and their specifications in pyrotechnic mixture

20UCJ602 - CHEMISTRY OF PRINTING INKS

COURSE OUTCOMES

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

- CO1: outline the manufacture and terminology related to printing ink
- CO2: apply the concept for the analysis of raw materials used in printing
- CO3: compare the colour, strength, specific gravity of printing inks
- CO4: determine the acid value, saponification, iodine value, peroxide value of printing ink
- CO5: discuss the types and drying of printing inks.

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



B.Sc Plant Biology and Plant Biotechnology

**PROGRAMME SPECIFIC OUTCOMES
AND
COURSE OUTCOMES**

**B.Sc. DEGREE PROGRAMME IN
PLANT BIOLOGY AND PLANT BIOTECHNOLOGY**

Programme Code : UGP004

PROGRAMME SPECIFIC OUTCOMES

On successful completion of B.Sc., Plant Biology and Plant Biotechnology Programme, the students would have

PSO1: demonstrated holistic knowledge on the various facets of Plant Science

PSO2: developed the ability to communicate effectively and coherently the concepts pertaining to the Botanical disciplines

PSO3: applied the knowledge to solve the problems using critical thinking and analytical reasoning

PSO4: honed their skills to apply scientific reasoning and reflective thinking for the commercial exploitation of concepts and phenomenon pertaining to Plant Sciences

PSO5: imbued the moral and ethical values to lead a successful life in a world of multicultural competence

PSO6: acquired analytical skills, credentials and qualities to become a good researcher in Plant Sciences

PSO7: assimilated the disciplinary knowledge to face the competitive examinations confidently to get employment / become successful entrepreneur.

20UBC101 - ALGAE, FUNGI, LICHENS AND BRYOPHYTES

COURSE OUTCOMES

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

- CO1: illustrate the life history of thallophytes, interrelate their thallus organization and spell out their reproduction
- CO2: construct the internal organization of vegetative and reproductive structure of the thallophytes and identify their structural significance
- CO3: compare and contrast the life cycle patterns of thallophytes
- CO4: assess the various phases of life cycle of thallophytes
- CO5: discuss the ecological importance of lichens.

20UBC202 - PTERIDOPHYTES, GYMNOSPERMS AND PALEOBOTANY

COURSE OUTCOMES

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

- CO1: summarize the general features and illustrate the structure and reproduction of Pteridophytes and Gymnosperms
- CO2: demonstrate the types of stele and spore
- CO3: analyze the process of fossilization and categorize the methods of fossilization
- CO4: assess the reproductive structure of Gymnosperms
- CO5: compile geological era and elaborate the features of fossil Gymnosperms

20UBC203 – CORE PRACTICAL – I

(Algae, Fungi, Lichens, Bryophytes, Pteridophytes, Gymnosperms and Paleobotany)

COURSE OUTCOMES

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

- CO1: interpret the structure of thallophytes
- CO2: identify the distinguishing features of thallophytes
- CO3: analyze the external and internal structures of fossil Pteridophytes and Gymnosperms
- CO4: evaluate the internal structure of stem, reproductive structure and interpret the organization of various tissues in plants
- CO5: elaborate the organization of tissues using micro preparation and discuss their features

20UBC304 - PLANT ANATOMY AND EMBRYOLOGY

COURSE OUTCOMES

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

- CO1: list down the features of normal and anomalous secondary thickening and illustrate their structure
- CO2: identify the different types of cells and make use of their internal morphology
- CO3: examine the types of pollination and methods to overcome incompatibility
- CO4: assess the role of polyembryony in horticulture plants
- CO5: discuss the developmental stages of reproductive organs.

20UBC305 - CELL BIOLOGY, GENETICS AND EVOLUTION

COURSE OUTCOMES

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

- CO1: illustrate the ultra structure of cell and nucleus
- CO2: demonstrate Mendel's law of inheritance
- CO3: analyse the mechanism of mutation and chromosomal aberrations
- CO4: evaluate the process of evolution using the evidences and theories
- CO5: elaborate the extrachromosomal inheritance.

20UBC406 - MICROBIOLOGY AND PHYTOPATHOLOGY

COURSE OUTCOMES

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

- CO1: illustrate the characteristic features of microorganisms and summarize the contributions of Microbiologists
- CO2: identify the microorganisms and translate their role in industries
- CO3: examine the structure of plant viruses and adjudicate the measures of controlling plant diseases
- CO4: evaluate the causes, disease cycle and control measures of plant diseases
- CO5: adapt a suitable pure culture techniques to detect the pathogens.

20UBC407 – CORE PRACTICAL – II

(Plant Anatomy, Embryology, Cell Biology, Genetics, Evolution, Microbiology and Phytopathology)

COURSE OUTCOMES

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

- CO1: relate the plants with their anatomical features
- CO2: identify the stages of pollen development
- CO3: inspect the stages of mitosis and meiosis and distinguish the components of cell inclusions
- CO4: determine the motility of bacteria
- CO5: formulate the media composition for culture of microbes.

20UBO401 - FOOD PROCESSING TECHNOLOGY

COURSE OUTCOMES

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

- CO1: relate the principles of processing of fruits, vegetables and dairy products
- CO2: apply suitable preservation methods for fruits, vegetables and dairy products
- CO3: categorize the preparation and processing of single cell proteins from algae, fungi and bacteria.
- CO4: evaluate the quality control measures of food products
- CO5: adapt a suitable preservation technique for the food products.

20UBC508 - PLANT SYSTEMATICS

COURSE OUTCOMES

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

- CO1: outline the morphology of plant parts in Angiosperm families
- CO2: apply the natural system of classification, identify and infer the characters of common plants
- CO3: analyze the role of ICN in plant nomenclature
- CO4: evaluate the distinguishing features of dicotyledonous and monocotyledonous families and assess their economic importance
- CO5: construct the floral diagram, compile the floral formula and discuss the floral features of given families

20UBC509 - BIOCHEMISTRY AND BIOPHYSICS

COURSE OUTCOMES

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

- CO1: spell out the types of energy rich compounds and summarize its importance
- CO2: identify the nature of carbohydrates using qualitative analysis
- CO3: classify the aminoacids, protein and lipids and distinguish their properties
- CO4: evaluate the structure of macromolecules and interpret their types
- CO5: elaborate the mechanism of enzyme catalysis and inhibition.

20UBC510 - PLANT BIOTECHNOLOGY

COURSE OUTCOMES

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

- CO1: infer the gene transfer methods
- CO2: apply the knowledge of Genetic engineering
- CO3: examine the merits and demerits of transgenic plants
- CO4: assess the usage of plasmids in rDNA technology
- CO5: design the suitable protocol for the production of Genetically Engineered crops.

20UBC511 – CORE PRACTICAL – III

(Plant Systematics, Biochemistry, Biophysics and Plant Biotechnology)

COURSE OUTCOMES

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

- CO1: identify the plants
- CO2: group and ungroup the plants
- CO3: distinguish the carbohydrates and analyze the types of carbohydrates and fatty acids present in the plant tissues
- CO4: evaluate the role of AGE in the isolation of nucleic acids
- CO5: formulate the composition of tissue culture media.

20UBC512 – COMPREHENSION AND *viva voce* - I

COURSE OUTCOMES

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

- CO1: demonstrate a literal comprehension of reading
- CO2: apply knowledge of vocabulary used in botany subjects
- CO3: identify main idea in reading materials, books and other sources
- CO4: depict the level of understanding in the subject matter
- CO5: develop skills in succeeding in the interviews.

20UBO502 - FORESTRY

COURSE OUTCOMES

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

- CO1: outline the value of forests in the human welfare
- CO2: classify the forest types of India
- CO3: analyze agroforestry systems and silviculture techniques
- CO4: evaluate the different methods of propagation used for agroforestry and silviculture
- CO5: discuss the role of people in the management of forest.

20UBC613 - PLANT PHYSIOLOGY

COURSE OUTCOMES

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

- CO1: explain the mechanism of photosynthesis and the role of nutrients in plant growth
- CO2: demonstrate C₃ and C₄ plants using Kranz anatomy
- CO3:
 ategorize the types of respiration and Nitrogen metabolism
- CO4: assess the role of hormones in plant growth and development
- CO5: elaborate the water relations in plants and discuss its significance.

20UBC614 - ENVIRONMENTAL BIOLOGY

COURSE OUTCOMES

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

- CO1: list down the types of ecosystems and summarize its functions
- CO2: make use of Clementsian units of vegetation in plant formation
- CO3: compare and contrast the adaptation of plants to different environments
- CO4: assess the role of bioindicators in pollution control
- CO5: compile the sources of energy resources.

20UBC615 – CORE PRACTICAL – IV
(Plant Physiology and Environmental Biology)
COURSE OUTCOMES

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

- CO1: interpret the osmotic potential of plants
- CO2: apply the basic techniques in plant physiology and identify stomatal index and stomatal frequency
- CO3: compare and contrast C₃ and C₄ plants
- CO4: determine the adaptation of plants and evaluate the vegetation
- CO5: examine the components of an aquatic ecosystem

20UBC616 – INTERNSHIP
COURSE OUTCOMES

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

- CO1: relate the theoretical knowledge with the technical know-how adopted in industries
- CO2: identify the common problems encountered in bio industries
- CO3: analyze the quality of samples produced in the industries adopting standard quality control measures
- CO4: prepare the budget for the industrial production of plant based products
- CO5: decipher the chemical background of the processes adopted in the industries.

20UBC617 – COMPREHENSION AND *viva voce* - II
COURSE OUTCOMES

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

- CO1: demonstrate a literal comprehension of reading
- CO2: apply knowledge of vocabulary used in botany subjects
- CO3: identify main idea in reading materials, books and other sources
- CO4: depict the level of understanding in the subject matter
- CO5: develop skills in succeeding in the interviews.

20UBL601 - BIODIVERSITY CONSERVATION AND MANAGEMENT
COURSE OUTCOMES

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

- CO1: spell out the concept and types of Biodiversity
- CO2: apply GIS and GPS for landscape mapping
- CO3: analyse the current status of natural habitats in India
- CO4: assess species richness and evenness to deduce the distribution of biodiversity
- CO5: adapt a suitable strategy for the conservation of biodiversity.

20UBL602 - PROJECT AND *viva voce*

COURSE OUTCOMES

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

- CO1: ascertain the experiments required for the projects undertaken
- CO2: plan for literature survey, experimental work and documentation of results
- CO3: analyze the compounds using the instruments
- CO4: develop the experiments independently in the thrust areas of Plant science
- CO5: defend the questions raised in *viva voce* examination

20UBA101 - ALLIED BOTANY FOR ZOOLOGY – I

COURSE OUTCOMES

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

- CO1: outline the classification of thallophytes and illustrate their structure
- CO2: identify the internal structure of thallophytes
- CO3: compare and contrast the characteristic features of different kinds of Lichens
- CO4: criticize the different methods of fossilization
- CO5: construct the life cycle patterns of thallophytes and pteridophytes

20UBA202 - ALLIED BOTANY FOR ZOOLOGY – II

COURSE OUTCOMES

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

- CO1: understand the mechanism of light reaction, photoperiodism and vernalization in plants
- CO2: experiment with the morphological features of the flowering plants
- CO3: categorize the spermatophytes and compare their reproductive features
- CO4: assess the economic values of plants
- CO5: discuss the structure of stomata and the mechanism of transpiration

20UBA203 - ALLIED BOTANY PRACTICAL FOR ZOOLOGY

COURSE OUTCOMES

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

- CO1: relate the structure of thallophytes using micropreparations
- CO2: identify the different forms of thallophytes
- CO3: dissect and analyze the vegetative and reproductive features of spermatophytes
- CO4: assess the mechanism of transpiration
- CO5: develop herbaria of the local flora

20UBE401 - TECHNIQUES IN PLANT SCIENCES

COURSE OUTCOMES

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

- CO1: relate the types of centrifugation and centrifuges
- CO2: select a suitable electrophoretic technique for separation of nucleic acids and protein
- CO3: analyze the different imaging techniques for the biological samples
- CO4: appraise different statistical tools used in plant sciences
- CO5: adapt a suitable chromatography techniques for the separation of biomolecules.

20UBE502 - ORGANIC FARMING

COURSE OUTCOMES

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

- CO1: illustrate the soil profile
- CO2: identify and select crop specific BGA inoculants
- CO3: compare and contrast the applications of symbiotic and non-symbiotic biofertilizers
- CO4: critically analyze the agronomic importance of biofertilizers
- CO5: develop the strategies for the commercial production of biofertilizers

20UBE603 – INDUSTRIAL BOTANY

COURSE OUTCOMES

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

- CO1: outline the useful parts of economically important plants
- CO2: make use of the different mass cultivation methods of algae
- CO3: analyse the techniques of processing and preservation of food products
- CO4: assess the cultivation techniques of medicinal plants
- CO5: develop methods and techniques of mass production of flowers.

20UBN201 - HERBAL BOTANY

COURSE OUTCOMES

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

- CO1: relate the role of plants in Indian Systems of Medicine
- CO2: classify the raw drugs based on parts of medicinal plants
- CO3: analyze the adulteration in herbal drugs
- CO4: assess the cultivation technology of medicinal plants
- CO5: discuss the processing and storage of herbal drugs

20UBJ601 - MUSHROOM CULTIVATION TECHNOLOGY

COURSE OUTCOMES

Upon completion of the course the students will be able to

- CO1: illustrate the morphology of edible and non-edible mushrooms
- CO2: identify the importance of mushrooms
- CO3: inspect the developmental stages of mushrooms
- CO4: appraise the substrates used for spawn preparation
- CO5: develop the infrastructure of mushroom cultivation centre.

20UBJ602 - HORTICULTURE TECHNOLOGY

COURSE OUTCOMES

Upon completion of the course the students will be able to

- CO1: explain the basics of horticulture
- CO2: categorize the types of irrigation practices and manures
- CO3: compare the modes of application of biofertilizers and biopesticides
- CO4: determine the role of plant growth hormones in horticulture
- CO5: propagate the ornamental plants in the field.

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



B.Sc Zoology

PROGRAMME SPECIFIC OUTCOMES

AND

COURSE OUTCOMES

B.Sc. DEGREE PROGRAMME IN ZOOLOGY

Programme Code: UGP005

PROGRAMME SPECIFIC OUTCOMES

On successful completion of B.Sc., Zoology Programme, the students would have

PSO1: acquired knowledge on the diversity of animals in relation to their Phyla and its classification

PSO2: understood the domain knowledge and skills to identify the animals and investigate their nature of relationship, connecting link, etc.,

PSO3: identified the environmental issues recognize the relationship between animals and their physiological functions

PSO4: expertise in conducting experiments in the areas of Biochemistry, Cell biology, Physiology and Environmental Biology, etc.,

PSO5: become familiar with the knowledge related to molecular levels, Moral/Ethical values and skills on Applied Zoology

PSO6: gained knowledge and skills to mitigate the economic potential of Animal Science to become successful bio-entrepreneurs

PSO7: widened their perspective to face the scientific challenges and incorporate ICT skills to qualify the national, global level Post-graduate examinations and also to pursue research in the leading Universities.

20UZC101 - DIVERSITY OF INVERTEBRATES

COURSE OUTCOMES

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

CO1: define the structural organization and classification of invertebrates

CO2: identify the parasitic adaptations of invertebrates

CO3: examine the life cycles of major invertebrate phyla

CO4: analyze the different larval forms and its significance in invertebrates

CO5: discuss the structural organization of minor phyla.

20UZC202 - DIVERSITY OF CHORDATES

COURSE OUTCOMES

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

- CO1: explain the characters of chordates and its affinity
- CO2: classify the major classes of chordates
- CO3: identify the adaptations in chordates
- CO4: inspect the functioning of various physiological systems of chordates
- CO5: appraise the specialization of vertebrates.

20UZC203 - CORE PRACTICAL - I (DIVERSITY OF INVERTEBRATES AND CHORDATES)

COURSE OUTCOMES

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

- CO1: summarize the organization of invertebrates
- CO2: illustrate the specialization of structures by mounting
- CO3: analyze the characters of museum specimens and mounted slides
- CO4: appraise the knowledge on taxonomy and biodiversity
- CO5: maximize skills for observing the animals.

20UZC304 - CELL BIOLOGY AND EMBRYOLOGY

COURSE OUTCOMES

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

- CO1: define the structure and functions of cell organelles
- CO2: summarize the different animal cells and nature of cell division
- CO3: analyze the significance of intracellular communication
- CO4: interpret the mechanisms involved in organ development in animals
- CO5: discuss the changes occur during morphogenetic movements

20UZC305 - ENVIRONMENTAL BIOLOGY AND BIostatISTICS

COURSE OUTCOMES

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

- CO1: find the importance of abiotic factors
- CO2: identify the interaction of organisms in the environment
- CO3: analyze the biodiversity and its conservation
- CO4: assess the levels of environmental pollution and its management
- CO5: discuss the biological parameters with the help of statistical tools.

20UZC406 - BIOCHEMISTRY

COURSE OUTCOMES

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

- CO1: find the chemical nature of macro molecules
- CO2: classify the biomolecules based on the various criteria
- CO3: categorize the types of macromolecules and their functions
- CO4: examine the sequential reactions of metabolism
- CO5: elaborate on physiological functions enzymes and vitamins.

20UZC407 - CORE PRACTICAL – II

(CELL BIOLOGY, EMBRYOLOGY, ENVIRONMENTAL BIOLOGY, BIostatISTICS AND BIOCHEMISTRY)

COURSE OUTCOMES

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

- CO1: explain the various types of cells
- CO2: examine the life cycle and metamorphosis of animals
- CO3: assess the qualities of water samples collected from various sources
- CO4: interpret the biological variations using statistical tools
- CO5: elaborate the importance of macromolecules and micromolecules.

20UZO401 - ANIMAL BEHAVIOUR

COURSE OUTCOMES

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

- CO1: explain the patterns, communication, chronobiology and control of behaviour
- CO2: apply the knowledge of animal behaviour in day today life
- CO3: categorize the patterns of behaviour, development and communication in animals
- CO4: determine the innate, defensive, social biology and reproductive behaviour
- CO5: discuss the importance of animal behaviour.

20UZC508 - GENETICS AND MOLECULAR BIOLOGY

COURSE OUTCOMES

Upon Completion of the course, the students will be able to

- CO1: list the principles of inheritance and genetic interactions
- CO2: apply the law of inheritance in a population and community
- CO3: correlate the concept of population genetics and cytogenetics
- CO4: appraise the regulatory mechanisms involved during cellular process
- CO5: relate the gene regulation in different species with their habitat

20UZC509 - PHYSIOLOGY

COURSE OUTCOMES

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

- CO1: summarize the structure and functions of various organs of human being
- CO2: analyze the mechanisms involved in osmo and thermoregulations in animals
- CO3: examine the structure and functions of eye and ear
- CO4: determine the types of biological rhythm in animal behaviour
- CO5: explore the knowledge on cardiac cycle and blood pressure.

20UZC510 - MICROBIOLOGY AND IMMUNOLOGY

COURSE OUTCOMES

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

- CO1: understand the microbial activities and immune system
- CO2: classify the microbes based on their structure and functions
- CO3: apply the microbes in industry and agricultural fields
- CO4: assess the lymphoid organs and its functions
- CO5: interpret the various levels of immunity.

20UZC511 - CORE PRACTICAL – III

(GENETICS AND MOLECULAR BIOLOGY, PHYSIOLOGY, MICROBIOLOGY AND IMMUNOLOGY)

COURSE OUTCOMES

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

- CO1: find the microbes using different staining methods
- CO2: identify the blood groups and its significance
- CO3: analyze the biological variations among large populations
- CO4: list the importance of biomolecules
- CO5: prove the metabolic activities using various biochemical experiments.

20UZC512 – COMPREHENSION AND *viva voce* - I

COURSE OUTCOMES

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

- CO1: demonstrate a literal comprehension of reading
- CO2: apply the knowledge of vocabulary used in curriculum
- CO3: identify main idea in reading materials, books and other sources
- CO4: depict the level of understanding in the subject matter
- CO5: develop skills in succeeding in the interviews.

20UZO502 – HEALTH AND NUTRITION

COURSE OUTCOMES

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

- CO1: explain the importance of health and nutrition
- CO2: identify the health problems and importance of hygienic practices
- CO3: categorize the nutritional disorders
- CO4: interpret the importance of nutrients in good life
- CO5: elaborate the health problems and managing methods

20UZC613 - BIOTECHNOLOGY

COURSE OUTCOMES

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

- CO1: understand the concept of genetic engineering
- CO2: apply the gene transfer principles in rDNA technology
- CO3: examine the importance of genetically modified organisms
- CO4: analyze the significance of cell culture technology
- CO5: assess the assisted reproductive technology and biosafety.

20UZC614 - EVOLUTION

COURSE OUTCOMES

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

- CO1: explain the various concepts of evolution
- CO2: identify the evidences and results of evolution
- CO3: categorize the mechanisms involved in evolution
- CO4: interpret the evolutionary trends in the origin of new species
- CO5: elaborate the fossil evidences and future of mankind

20UZC615 - CORE PRACTICAL – IV

(BIOTECHNOLOGY, EVOLUTION AND GENERAL AND APPLIED ENTOMOLOGY)

COURSE OUTCOMES

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

- CO1: identify the different techniques used for the separation of macromolecules
- CO2: interpret population using natural selection
- CO3: evaluate the insect fauna in the environment
- CO4: examine the evidence of organic evolution
- CO5: improve the qualities of pollution free environment.

20UZC616 - INTERNSHIP
COURSE OUTCOMES

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

- CO1: examine the obtained knowledge through the projects in institutions/ R&D organizations
- CO2: elaborate the experimental data and interpret the results
- CO3: determine the samples through sophisticated instruments
- CO4: illustrate the cost to extrapolate the findings in large scale to the desired field
- CO5: justify the modes of internship usage to become an entrepreneur

20UZC617 – COMPREHENSION AND *viva voce* - II
COURSE OUTCOMES

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

- CO1: demonstrate a literal comprehension of reading
- CO2: apply the knowledge of vocabulary used in curriculum
- CO3: identify main idea in reading materials, books and other sources
- CO4: depict the level of understanding in the subject matter
- CO5: develop skills in succeeding in the interviews.

20UZL601- GENERAL AND APPLIED ENTOMOLOGY
COURSE OUTCOMES

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

- CO1: explain the types and classification of insects
- CO2: apply the beneficial, productive and harmful aspects of insects
- CO3: categorize the major insect pests of agricultural crops
- CO4: distinguish the household insects and insect vector
- CO5: evaluate the importance of integrated pest management.

20UZL602 - PROJECT AND *viva voce*
COURSE OUTCOMES

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

- CO1: relate the experiments in connection with the projects undertaken
- CO2: plan for literature survey, experimental work and documentation of results
- CO3: analyse the research components using analytical instruments effectively
- CO4: defend the questions raised in *viva voce* examination
- CO5: develop the experiments independently in thrust areas of Zoology

20UZA101 – FUNDAMENTAL ZOOLOGY

COURSE OUTCOMES

Upon Completion of the course the students will be able to

- CO1: understand the animal organization and its classification
- CO2: identify the structure and functions of animals in their habitat
- CO3: inspect the parasitic life of animals and its hosts
- CO4: assess the functioning of peculiar organ system in an animals
- CO5: organize the habit and habitat of animals.

20UZA202 - APPLIED ZOOLOGY

COURSE OUTCOMES

Upon Completion of the course the students will be able to

- CO1: find the thrust areas of Zoology
- CO2: identify the harmful and medically important insects
- CO3: examine the economic importance of cultivable animals
- CO4: analyze the important strategies of rearing animals
- CO5: improve the quality of products by recent techniques

20UZA203 - ALLIED ZOOLOGY PRACTICAL FOR BOTANY

COURSE OUTCOMES

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

- CO1: develop skills for the observation of the animals
- CO2: learn the technique of mounting small parts of animals
- CO3: identify the important animals using their key characters
- CO4: Dissect the cultured animals and elaborate the different types of parts
- CO5: demonstrate the animal organization and its structural functions.

20UZE401 - ORNAMENTAL FISH CULTURE

COURSE OUTCOMES

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

- CO1: demonstrate the art of fish keeping and setting up of fish tanks
- CO2: organize the various common Ornamental fishes
- CO3: identify the methods of Oxygen packing
- CO4: evaluate the breeding techniques for some ornamental fishes
- CO5: compose the common diseases of ornamental fishes and their control

20UZE502 - APICULTURE

COURSE OUTCOMES

Upon Completion of the course the students will be able to

- CO1: recall economic importance of bee products
- CO2: experiment with behavior of honey bee
- CO3: make use of bee hives and bee keepers tools
- CO4: interpret the pests and diseases of honey bees
- CO5: predict the uses of various honey bee products

20UZE603 - POULTRY SCIENCE

COURSE OUTCOMES

Upon Completion of the course the students will be able to

- CO1: recall the rearing methods of poultry
- CO2: experiment with the various incubation methods
- CO3: make use of the different chicken breeds
- CO4: interpret the nature of fowl ecto and endo parasites
- CO5: predict the modes of poultry marketing

20UZN201 - PARASITOLOGY

COURSE OUTCOMES

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

- CO1: explain the life cycle of various parasites
- CO2: summarize the role of vectors in disease transmission
- CO3: analyze the control measures for various parasitic diseases
- CO4: evaluate the mode of transmission of diseases
- CO5: compile the list of parasites and its pathogenicity

20UZJ601 - SERICULTURE

COURSE OUTCOMES

Upon completion of the course the students will be able to

- CO1: know the biology and economic importance of silkworm
- CO2: illustrate the scope of sericulture
- CO3: experiment with moriculture techniques
- CO4: analyze the various diseases of silk worm and its control measures
- CO5: assess the role of Central Silk Board and the quality of silk.

20UZJ602 - VERMICOMPOSTING
COURSE OUTCOMES

Upon completion of the course the students will be able to

- CO1: infer the biological and economic importance of earthworm
- CO2: utilize the knowledge on vermicomposting
- CO3: categorize the basic requirements and conditions for vermicomposting
- CO4: experiment with the methods of vermitechnology
- CO5: assess the socio-economic value of vermitechnology.

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



B.Sc Microbiology

PROGRAMME SPECIFIC OUTCOMES

AND

COURSE OUTCOMES

B.Sc. DEGREE PROGRAMME IN MICROBIOLOGY

Programme Code : UGP006

PROGRAMME SPECIFIC OUTCOMES

On successful completion of B.Sc. Microbiology programme, the students would have

PSO1: gained the knowledge on general and applied aspects of Microbiology and allied subjects

PSO2: ability to communicate the experimental ideas and write their findings in reports

PSO3: capability to apply the concepts in Microbiology in experiments and analyze the findings critically

PSO4: acquired the knowledge to design the experiments individually and interpret the findings

PSO5: became familiar with ethical issues, IPR and patent in applied fields of Microbiology

PSO6: developed the skills of team work in pursuing experiments, marketing *etc.*,

PSO7: gained an insight to appear for competitive examinations.

20UYC101 - FUNDAMENTALS OF MICROBIOLOGY

COURSE OUTCOMES

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

- CO1: explain the contribution of microbiologists and microbial diversity
- CO2: organize different groups of prokaryotes and eukaryotes based on their taxonomy
- CO3: examine the microbial growth requirements and culture techniques
- CO4: evaluate the composition and types of media used in microbial cultures
- CO5: discuss the significance of bacteria, algae, fungi and protozoa to the human society.

20UYC202 - BIOCHEMISTRY AND MICROBIAL PHYSIOLOGY

COURSE OUTCOMES

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

- CO1: explain the structure, functions and metabolism of biomolecules
- CO2: identify the significance of biomolecules in living system
- CO3: compare the physiological responses of microbes towards various factors
- CO4: evaluate the significance of biomolecules for the growth of microbes
- CO5: predict the metabolic requirements of microbes

20UYC203 - CORE PRACTICAL – I
(Microbiology, Biochemistry and Microbial Physiology)

COURSE OUTCOMES

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

- CO1: demonstrate the pure culture techniques in microbiology
- CO2: apply the staining techniques for identifying microbes
- CO3: analyze the effect of various physical parameters on bacterial growth
- CO4: evaluate the different phases of bacterial growth curve in culture media
- CO5: develop protocols for assessing the biomolecules

20UYC304 - BACTERIOLOGY AND VIROLOGY

COURSE OUTCOMES

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

- CO1: explain the characteristic features of microorganisms
- CO2: identify the major characteristics used in microbial taxonomy
- CO3: analyse the features of various microbial community
- CO4: criticize the structural components of microorganism
- CO5: discuss the life cycle and cultivation methods of microbes

20UYC305 - CELL AND MOLECULAR BIOLOGY

COURSE OUTCOMES

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

- CO1: explain the basic concepts in cell and molecular biology
- CO2: identify the significance of prokaryotic and eukaryotic cellular organelles
- CO3: examine the replication, transcription, translation and cell cycle processes
- CO4: interpret the regulatory mechanism behind the functions of cell
- CO5: discuss the components and significances of cellular events

20UYC406 - BIostatISTICS AND TECHNIQUES IN MICROBIOLOGY

COURSE OUTCOMES

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

- CO1: explain the various techniques and statistical tools used in microbiology
- CO2: identify the suitable techniques for microbial characterization
- CO3: compare the results obtained in experiments using biostatistical tools
- CO4: evaluate the importance of biophysical techniques and biostatistics applied in Microbiology
- CO5: adapt the modern techniques for analyzing microbes and biomolecules

20UYC407 - CORE PRACTICAL - II
(Bacteriology, Virology, Cell and Molecular Biology, Microbiological Techniques and Biostatistics)

COURSE OUTCOMES

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

- CO1: select the suitable techniques to analyse the cell
- CO2: apply suitable microscopic techniques and biochemical tests to identify bacteria
- CO3: dissect the cell for observing the cell division
- CO4: interpret the different kinds of data using statistical tools
- CO5: develop the new techniques for studying microbes

20UYO401 - MICROBIAL FUEL CELL TECHNOLOGY

COURSE OUTCOMES

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

- CO1: explain the characters and applications of fuel cell
- CO2: classify the microbial fuel cell based on mediators, anode and cathode
- CO3: analyse the working principle of microbial fuel cell
- CO4: criticize the mechanism behind the functioning of Microbial Electrolysis cell
- CO5: develop the microbial fuel cell for societal significance

20UYC508 - IMMUNOLOGY

COURSE OUTCOMES

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

- CO1: explain the structural components of immune system
- CO2: identify the role of immunology in human welfare
- CO3: inspect the various diseases associated in immune system
- CO4: interpret the knowledge of antigen and antibody interactions for diagnostic purpose
- CO5: discuss the mechanism of immune responses

20UYC509 - FOOD AND DAIRY MICROBIOLOGY

COURSE OUTCOMES

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

- CO1: explain the role of microorganisms in food and dairy products
- CO2: apply appropriate methods for preparing oriented foods and fermented milk products
- CO3: analyze the role of microbiologist and government regulatory practices in accessing the quality of food products
- CO4: criticize the microbes associated with the food borne diseases
- CO5: formulate the preservation methods and hygienic practices for quality foods.

20UYC510 - MICROBIAL GENETICS

COURSE OUTCOMES

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

- CO1: explain the genetics of prokaryotic and eukaryotic model organisms
- CO2: apply the knowledge on gene transfer mechanisms
- CO3: analyse the components of microbial genome
- CO4: evaluate the nature and significance of the transposable elements
- CO5: discuss the mutation and transposable elements in gene

20UYC511 - CORE PRACTICAL - III

(Immunology, Food and Dairy Microbiology and Microbial Genetics)

COURSE OUTCOMES

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

- CO1: explain the criteria for quality of water and milk
- CO2: utilize the different techniques in analyzing samples
- CO3: examine the microorganisms from various spoiled food samples
- CO4: evaluate the antigen and antibody interactions in disease diagnosis
- CO5: construct the experiments using gene transfer techniques

20UYC512 - COMPREHENSION AND *viva voce* - I

COURSE OUTCOMES

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

- CO1: demonstrate a precise knowledge on the course
- CO2: apply knowledge of course used in curriculum
- CO3: examine the ability of usage of appropriate learning resources
- CO4: assess the learning concept in all aspects
- CO5: develop bench skills for career opportunities

20UYO502 - NANOTECHNOLOGY FOR MICROBIOLOGY

COURSE OUTCOMES

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

- CO1: explain the terminologies and mechanism of nanoparticle synthesis
- CO2: identify the method of microbial mediated synthesis of nanoparticle
- CO3: analyse the mechanism of synthesis, characterization and applications of nanoparticles
- CO4: evaluate the different types of nanoparticles used in diversified fields
- CO5: discuss the applications, merits and demerits of microbial nanotechnology.

20UYC613 - INDUSTRIAL MICROBIOLOGY

COURSE OUTCOMES

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

- CO1: explain the basic requirements of bioprocess technology
- CO2: identify suitable fermenter for a particular application
- CO3: analyse the various fermentation processes followed in industries
- CO4: evaluate various microbial products and their significance
- CO5: formulate cheap raw materials for fermentation process

20UYC614 - ENVIRONMENTAL AND AGRICULTURAL MICROBIOLOGY

COURSE OUTCOMES

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

- CO1: explain the characteristic features of airborne and aquatic microbes
- CO2: apply the knowledge of microbes in bioremediation and biofertilizers
- CO3: analyse the microbial diseases and biopesticides
- CO4: evaluate the importance of nitrogen fixation and biodegradation
- CO5: elaborate the applications of microorganisms for improving environment and agriculture

20UYC615 - CORE PRACTICAL – IV

(Industrial, Soil, Agricultural, Medical and Veterinary Microbiology Lab)

COURSE OUTCOMES

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

- CO1: demonstrate the various techniques used in industrial, agriculture, medical and veterinary microbiology
- CO2: identify the microorganism using biochemical characterization
- CO3: analyse the morphology of infected plants
- CO4: evaluate the working principle of fermentor in industrial microbiology
- CO5: design appropriate methods for identifying the microbial diseases

20UYC616 - INTERNSHIP

COURSE OUTCOMES

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

- CO1 : explain the scope of microbiology in various fields
- CO2: experiment with modern facilities available in large scale industries
- CO3 : examine the laboratory and industrial skills
- CO4 : decide their level of skills in different jobs
- CO5 : predict the opportunities to be an entrepreneur

20UYC617 - COMPREHENSION AND *viva voce* - II

COURSE OUTCOMES

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

- CO1: demonstrate a precise knowledge on the course
- CO2: apply knowledge of course used in curriculum
- CO3: examine the ability of usage of appropriate learning resources
- CO4: assess the learning concept in all aspects
- CO5: develop bench skills for career opportunities

20UYL601 - MEDICAL AND VETERINARY MICROBIOLOGY

COURSE OUTCOMES

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

- CO1: explain the classification of animal pathogens
- CO2: identify the nature and pathogenesis of disease-causing microorganisms
- CO3: examine the importance of laboratory practices in microbiological laboratory
- CO4: evaluate the diagnosis and treatment methods of microbial diseases
- CO5: discuss the effect of microbial diseases and preventive measures

20UYL602 - PROJECT AND *viva voce*

COURSE OUTCOMES

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

- CO1: relate the experiments in connection with the projects undertaken
- CO2: plan for literature survey, experimental work and documentation of results
- CO3: analyse the research components using analytical instruments effectively
- CO4: defend the questions raised in *viva voce* examination
- CO5: develop the experiments independently in thrust areas of Microbiology

20UYA101 - GENERAL MICROBIOLOGY

COURSE OUTCOMES

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

- CO1: explain the basic concepts of microbiology
- CO2: identify the characteristic features of bacteria, algae and fungi
- CO3: examine the microbes based on their growth requirements and culture techniques
- CO4: determine the nutrient requirements and media formulation for isolating bacteria, algae and fungi
- CO5: discuss the significance of bacteria, algae, fungi and protozoa to the human society.

20UYA202 - APPLIED MICROBIOLOGY

COURSE OUTCOMES

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

- CO1: explain the applications of microbiology in various fields
- CO2: apply the knowledge in applied aspects of microbiology
- CO3: analyse the methodology behind various microbial products
- CO4: assess the different regulatory standards for microbial products
- CO5: predict the effect of microbes for the betterment of society.

20UYA203 - ALLIED MICROBIOLOGY PRACTICAL

COURSE OUTCOMES

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

- CO1: explain the basic microbiology laboratory practices and techniques
- CO2: identify the morphology of microbes through different staining techniques
- CO3: examine the microbes based on their cultural and biochemical characters
- CO4: assess the quality of food products
- CO5: predict the quality of air in indoor and outdoor environment.

20UYE401 - BASIC BIOLOGY

COURSE OUTCOMES

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

- CO1: explain the vital concepts in biology
- CO2: identify the role of biological systems in life
- CO3: analyse the structural components of different biotic system
- CO4: criticize the biology behind evolution, ecology, plants, animals and inheritance
- CO5: discuss the mechanism behind the function of living system.

20UYE502 - ENTREPRENEURSHIP IN MICROBIOLOGY

COURSE OUTCOMES

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

- CO1: explain the skills and the role of various institutional support for an entrepreneur
- CO2: plan the procedure for preparing various microbial products
- CO3: analyze the applications of microbial products for human well being
- CO4: assess the role of microbiology in entrepreneur development
- CO5: formulate the strategy to apply the industrially important products in society

20UYE603 - PHARMACEUTICAL MICROBIOLOGY

COURSE OUTCOMES

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

- CO1: explain the structure and types of various pharmaceutical products
- CO2: select the method of production and quality testing of pharmaceutical products
- CO3: examine the mechanism behind the action of pharmaceutical products
- CO4: assess the techniques and regulatory practices in pharma industry
- CO5: discuss the role of pharma industry in medical field.

20UYN201 - MICROBIOLOGY FOR SOCIETY

COURSE OUTCOMES

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

- CO1: summarize the different types of microorganisms and their properties
- CO2: utilize the significant property of microbes in various domestic and industrial purpose
- CO3: examine the function of microbes in clinical, agricultural and environmental field
- CO4: criticize the efficiency of significant microbes
- CO5: adapt the role of microbes in day today life.

20UYJ601 - QUALITY CONTROL FOR FOOD AND INDUSTRIAL PRODUCTS

COURSE OUTCOMES

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

- CO1: explain the role of quality control officer and agencies controlling food quality
- CO2: apply the various methods for analyzing food and industrial products
- CO3: examine the sterility of the environment
- CO4: recommend industrial safety and hygiene
- CO5: adapt the methods for maintaining quality in industrial environment.

20UYJ602 - SPIRULINA PRODUCTION TECHNOLOGY

COURSE OUTCOMES

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

- CO1: explain the parameters that regulate the growth of spirulina
- CO2: identify the algae based on their external morphology
- CO3: examine the procedures for cultivating spirulina
- CO4: measure the quality of the spirulina
- CO5: maximize the production of spirulina with economically feasible substrates.

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



B.Sc Biotechnology

PROGRAMME SPECIFIC OUTCOMES

AND

COURSE OUTCOMES

B.Sc. DEGREE PROGRAMME IN BIOTECHNOLOGY

Programme Code : UGP007

PROGRAMME SPECIFIC OUTCOMES

On successful completion of B.Sc. Degree Programme in Biotechnology, the students would have

PSO1: applied the knowledge of different domains like Molecular Biology, Genetics, Immunology, Biochemistry, Environmental Biotechnology and Bioinformatics to resolve composite Biotechnological problems.

PSO2: imparted the ability of disseminating the Biotechnological information in writing as well as in oral presentation effectively.

PSO3: identified and analyzed the societal issues and express their novel conclusions with fundamental knowledge attained from Biotechnology.

PSO4: acquired knowledge in various branches of Biotechnology enabling their applications in Industry

PSO5: recognized the importance of bioethics and environment to empower to acquire technical skills by studying interdisciplinary aspects of Biotechnology

PSO6: designed and developed a clear solution for health issues by applying modern biotechnological tools by working as a team.

PSO7: become biotechnology innovators and entrepreneurs and to scale up the innovative skills by using ICT tools to get a final product or life-long learning .

20UTC101 - CELL BIOLOGY AND HISTOCHEMISTRY

COURSE OUTCOMES

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

- CO1: explain the kinds of ion transport mechanism, prokaryotic and eukaryotic cells
- CO2: identify the various cell organelles and its composition
- CO3: analyze the principle, components of microscopes and examine the stains, fixatives and embedding
- CO4: determine the histochemical localization of carbohydrates, proteins and lipids
- CO5: discuss the causes of cancer and cell cycle dependent diseases

20UTC202 – CLASSICAL GENETICS

COURSE OUTCOMES

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

- CO1: recall the concepts of Mendelism, population genetics and genic interactions
- CO2: identify the blood groups, concept of sex determination and apply the Hardy-Weinberg law in population genetics
- CO3: analyze the causes of syndromes and metabolic disorders
- CO4: evaluate the mechanism of crossing over and importance of amniocentesis
- CO5: elaborate on transposon, pedigree analysis, genetic counselling and eugenics

20UTC203 - CORE PRACTICAL – I

(Cell biology and histochemistry and Classical Genetics)

COURSE OUTCOMES

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

- CO1: list out the different types of syndromes and microscope
- CO2: identify different organelles of an animal cell and polytene chromosome in *Chironomus* larva
- CO3: compare and verify the Mendelian monohybrid and dihybrid ratio
- CO4: interpret the stages of mitosis, blood grouping and Mendelian traits among the students
- CO5: develop a comprehensive knowledge on pedigree chart, inheritance of colour blindness and cell fractionation technique

20UTC304 - BIOCHEMISTRY

COURSE OUTCOMES

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

- CO1: outline the classification of macromolecules
- CO2: identify the structure and metabolism of macromolecules
- CO3: distinguish between saponifiable and non-saponifiable lipids, saturated and unsaturated fatty acids and competitive and non-competitive inhibitors
- CO4: evaluate the biosynthesis, biological importance of growth hormones, insulin and vitamins
- CO5: discuss the mechanism of enzyme action and ketogenesis

20UTC305 - BIOSTATISTICS

COURSE OUTCOMES

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

- CO1: summarize the basic concepts of biostatistics and process the data for diagrammatic presentation
- CO2: organize the data and graph construction methods
- CO3: compare the statistical tests for significance and measure the regression level
- CO4: justify the correlation coefficient and averages of biological data
- CO5: compile the measures of dispersion methods and design the graphs

20UTC406 - MOLECULARBIOLOGY

COURSE OUTCOMES

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

- CO1: demonstrate the concepts of DNA as genetic material, gene expression and operon models
- CO2: apply the mechanism of replication, transcription and translation
- CO3: distinguish the mechanism of transcription in prokaryotes and eukaryotes; types of mutation
- CO4: assess the importance of genetic code and the molecular mechanisms underlying mutations, DNA damage and repair mechanisms
- CO5: discuss the mutagenesis methods and patenting.

20UTC407 – CORE PRACTICAL –II

(Biochemistry, Biostatistics and Molecular Biology)

COURSE OUTCOMES

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

- CO1: demonstrate the SDS – PAGE and PCR
- CO2: identify the qualitative analysis of macromolecules
- CO3: examine the various statistical functions using MS-Excel and isolate the microbial genomic and plasmid DNA
- CO4: estimate the levels of macromolecules quantitatively
- CO5: discuss the principle of paper chromatography and compile data preparation and chart labelling using MS-Excel

20UTO401 - PHARMACEUTICAL BIOTECHNOLOGY

COURSE OUTCOMES

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

- CO1: illustrate the drug manufacture, formulations and production of therapeutic agents
- CO2: apply the analytical techniques to separate the pharmaceutical products
- CO3: infer the requirements for pharmacokinetics and pharmacodynamics in drug discovery
- CO4: justify the development of biopharmaceuticals through pharmacogenomics
- CO5: discuss the challenges faced during drug interaction, drug delivery and gene related diseases.

20UTC508 – GENETIC ENGINEERING

COURSE OUTCOMES

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

- CO1: list out the various types of DNA modifying enzymes and gene library construction
- CO2: utilize the cloning and expression vectors in genetic engineering
- CO3: analyse the various modes of gene transfer methods and compare the working mechanism of blotting techniques
- CO4: evaluate the screening and selection methods of clones
- CO5: elaborate the PCR techniques and hazards of genetic engineering

20UTC509 - IMMUNOLOGY AND IMMUNOTECHNOLOGY

COURSE OUTCOMES

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

- CO1: outline the cells and organs of the immune system and immunological techniques
- CO2: identify the types of immunity, antigen antibody interaction and the role of major histocompatibility complexes
- CO3: examine the role of complement system and hypersensitivity reactions in human system
- CO4: assess the importance of immune system in organ transplantation, tumor immunology and vaccines production
- CO5: construct a comprehensive knowledge on hybridoma cells and immuno diagnostic techniques.

20UTC510 - STEM CELLS BIOLOGY

COURSE OUTCOMES

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

- CO1: explain the ambient conditions for stem cell growth, characteristics, types and sources and biology of stem cells
- CO2: identify the importance of aseptic conditions, pathways in stem cell self-renewal, pluripotency and stem cell niche
- CO3: analyze the quality control, cell cycle regulators, bioprinting technology and its applications in tissue engineering and regenerative medicine
- CO4: evaluate their knowledge about the potentials of stem cells, products and bioreactors used in stem cell and tissue engineering
- CO5: discuss the importance of stem cells in therapeutic applications, drug testing and ethical issues governing stem cell research

20UTC511 - CORE PRACTICAL –III

(Genetic engineering, immunology and stem cells biology)

COURSE OUTCOMES

Upon Completion of the course, the students will be able to

- CO1: find out the DNA fragment by using agarose gel electrophoresis
- CO2: apply the ELISA and southern blotting
- CO3: examine PCR techniques and rocket immuno electrophoresis
- CO4: evaluate their knowledge in organization of stem cell culture lab
- CO5: develop novel nutrient media composition for culturing cells

20UTC512 - COMPREHENSION AND *viva voce* – I

COURSE OUTCOMES

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

- CO1: demonstrate a literal comprehension of reading
- CO2: apply knowledge of vocabulary used in curriculum
- CO3: examine the indigenous ideologies in reading materials, books and other sources
- CO4: verify the level of understanding in the subject matter
- CO5: develop skills in succeeding in the interviews

20UTO502 - INTELLECTUAL PROPERTY RIGHTS

COURSE OUTCOMES

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

- CO1: summarize the concept of intellectual property rights and to demonstrate the various types of patent.
- CO2: apply the strategy of foreign patent protection and patents for higher plants
- CO3: analyze the role of IPR in Indian health care industry and patents for transgenic organisms
- CO4: assess the protection of plant variety and farmer's right act
- CO5: discuss the patenting of biological materials and biotechnology patent law

20UTC613 – PLANT BIOTECHNOLOGY

COURSE OUTCOMES

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

- CO1: summarize the laboratory organization and the types of plant tissue culture methods
- CO2: apply the sterilization methods and determine the somaclonal variation
- CO3: examine the secondary metabolite synthesis and analyse the ethical issues associated with transgenic plants
- CO4: justify the gene transfer methods with molecular markers and distinguish the nitrogen fixation and genome mapping
- CO5: develop the germplasm storage and choose the transposable elements for gene transfer

20UTC614 – INDUSTRIAL BIOTECHNOLOGY

COURSE OUTCOMES

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

- CO1: explain the design, construction material, types of fermentors, microbial growth and measurement
- CO2: identify the types of fermentation media, methods of fermentation and different parameters influencing fermentation process
- CO3: analyze the methods of industrial fermentation and stages in downstream process
- CO4: evaluate their knowledge in the production of commercially important products and industrial sterilization
- CO5: construct the stable product recovery and discuss the methods of immobilization

20UTC615 - CORE PRACTICAL –IV
(Plant Biotechnology and Industrial Biotechnology)

COURSE OUTCOMES

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

- CO1: demonstrate the laboratory setup and illustrate the operation techniques of fermentor
- CO2: utilize the MS medium in plant tissue culture and produce ethanol and antibiotics by fermentation
- CO3: examine the sterilization and enzyme production methods
- CO4: evaluate the microencapsulation and synthetic seed production methods
- CO5: elaborate the plant DNA isolation process and develop the cells in immobilized form

20UTC616 - INTERNSHIP

COURSE OUTCOMES

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

- CO1: relate hands on experience in basic and applied biotechnology research in a selected industrial laboratories
- CO2: apply the principles of biotechnology and processes for manufacturing of bioproducts
- CO3: analyze biotechniques to augment molecular diagnostic skills
- CO4: assess the need and life-long learning in the broadest context of technological change
- CO5: develop solutions for sustainable environment and health using computational tools and molecular techniques

20UTC617 - COMPREHENSION AND *viva voce* - II

COURSE OUTCOMES

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

- CO1: demonstrate a literal comprehension of reading
- CO2: identify knowledge of vocabulary used in curriculum
- CO3: apply main idea in reading materials, books and other sources
- CO4: assess the level of understanding in the subject matter
- CO5: develop skills in succeeding in the interviews

20UTL601 - BIOINFORMATICS

COURSE OUTCOMES

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

- CO1: explain the concept of sequence submission to databases, sequence alignment and phylogenetics
- CO2: make use of various bioinformatics tools for the analysis of biological sequences
- CO3: compare biological databases, similarity searches and phylogenetic trees
- CO4: assess the significance of sequence similarity and alignment
- CO5: discuss sequence entry in databases, sequence retrieval system and tree building methods

20UTL602 - PROJECT AND *viva voce*

COURSE OUTCOMES

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

- CO1: relate the experiments in connection with the projects undertaken
- CO2: plan for literature survey, experimental work and documentation of results
- CO3: analyze the compounds using instruments effectively
- CO4: defend the questions raised in *viva voce* examination
- CO5: develop the experiments independently in the thrust areas of Biotechnology

20UTA101 - FUNDAMENTALS OF BIOINFORMATICS

COURSE OUTCOMES

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

- CO1: outline the concept of sequencing, databases, sequence alignment and phylogenetics
- CO2: apply the various bioinformatics tools for the analysis of biological sequences
- CO3: compare the biological databases, similarity searches and phylogenetic trees
- CO4: assess the significance of sequence similarity and applications of databases
- CO5: discuss the sequence entry in databases, sequence retrieval system and tree building methods

20UTA202 - PLANT AND ANIMAL CELL CULTURE

COURSE OUTCOMES

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

- CO1: demonstrate the basic requirements of plant and animal tissue culture
- CO2: identify the types of cell culture techniques and its applications
- CO3: analyse the importance of cell lines, germplasm storage and gene transfer methods
- CO4: assess the stem cell culture, morphological pattern of cells and future perspectives
- CO5: elaborate the cell line characteristics associated with ethical issues

20UTA203 - ALLIED BIOTECHNOLOGY PRACTICAL

COURSE OUTCOMES

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

- CO1: outline the concept of databases, sequence alignment and synthetic seeds
- CO2: apply the various methods of plant tissue culture and to identify the bioinformatics tools for sequence analysis
- CO3: compare cell lines, biological databases, sequence alignment and phylogenetic trees
- CO4: assess the sequence similarity and significance of sequence alignment
- CO5: discuss the plant DNA isolation sequence retrieval system and Cell quantification.

20UTE401 - AGRICULTURAL BIOTECHNOLOGY

COURSE OUTCOMES

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

- CO1: summarize the types of plant nutrients, deficiency symptoms and to explain the concept of organic farming
- CO2: make use of the mechanism of biofertilizers and plant transformation of chloroplasts.
- CO3: analyze the process of seed production, certification and crop improvement
- CO4: determine the concept of transgenic plants, plant patents and plant derived vaccines
- CO5: build their knowledge on grafting, farmer's rights and crop modification techniques.

20UTE502 - NANOBIO TECHNOLOGY

COURSE OUTCOMES

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

- CO1: illustrate the approaches and dimensions in nanostructure synthesis
- CO2: identify the various methods of nanofabrication and its validation
- CO3: analyze the aspects of nanostructure through microscopy and spectroscopy
- CO4: evaluate the molecular nanostructures and its role
- CO5: elaborate the nano level devices and its applications with risks found

20UTE603 - ENVIRONMENTAL BIOTECHNOLOGY

COURSE OUTCOMES

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

- CO1: summarize the concepts of different environmental pollution, oil degradation and environmental monitoring by biosensor
- CO2: identify the degradation of xenobiotics metabolism and characteristics of wastewater, Bioremediation strategies
- CO3: analyse the different methods and factors responsible for bioremediation and biodegradation of environmental contaminants
- CO4: evaluate the waste water treatment process in different industrial effluent and composting, methane production.
- CO5: discuss the eco friendly product of biopesticide, biofertilizers and phytoremediation

20UTN201 - REGENERATION AND STEM CELLS

COURSE OUTCOMES

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

- CO1: explain stem cell regeneration and elucidate the properties of stem cell
- CO2: identify the ethical and social issues associated with use of stem cells in research
- CO3: classify various types of stem cells and their clinical applications and to distinguish embryonic and adult stem cells
- CO4: interpret the role of haematopoietic stem cells in gene therapy and other disease treatment
- CO5: elaborate on the umbilical cord blood collection process, cell regeneration process, storage and their usage in stem cell therapy

20UTJ601- BIOFERTILIZER

COURSE OUTCOMES

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

- CO1: explain the scope of biofertilizers
- CO2: identify the microbes involved in production of biofertilizers
- CO3: inspect skills in the production of microbial inoculants
- CO4: reveal practical knowledge on isolation and production of vesicular arbuscular mycorrhizal fungi
- CO5: develop skills for marketing biofertilizers

20UTJ602 - MEDICAL CODING

COURSE OUTCOMES

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

- CO1: explain the anatomy, pathologic basis of diseases and biochemical and hematological profile of blood
- CO2: identify the novel procedures for preventing seasonal diseases, route of administration of drugs classification and allergies caused by drugs
- CO3: analyse the recent advancements in different forms of medicine and the importance of health index
- CO4: assess the importance of Body Mass Index (BMI) for healthy life, organ system specific diseases and season specific diseases
- CO5: compile the ethical issues and security policies of health care system

20UTJ603 - FERMENTATION TECHNOLOGY

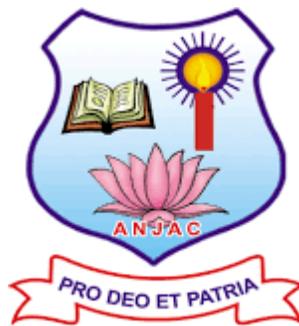
COURSE OUTCOMES

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

- CO1: illustrate the fermentation technology and to demonstrate the production process
- CO2: utilize the media and fermentors for batch and continuous culture
- CO3: analyse the fermentation process and to inspect the various product synthesis
- CO4: appraise the centrifugation process and to choose the immobilized cells
- CO5: modify the purification techniques and to microencapsulate the enzymes

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



B.Sc Physical Education, Health Education and Sports

PROGRAMME SPECIFIC OUTCOMES

AND

COURSE OUTCOMES

**B.Sc. DEGREE PROGRAMME IN PHYSICAL EDUCATION,
HEALTH EDUCATION AND SPORTS**

Programme Code : UGP008

PROGRAMME SPECIFIC OUTCOMES

On successful completion of B.Sc. Degree Programme in Physical Education, Health Education and Sports, the students would have

PSO1: attained wholesome development as physically fit, mentally sound and socially responsible individuals

PSO2: become outstanding sports persons by achieving in National and International level competitions

PSO3: gained scientific knowledge on various subjects in the field of Physical Education

PSO4: acquired knowledge on the rules & regulations and officiating techniques of sports and games

PSO5: cultivated the desirable health habits to emerge as socially-integrated sports persons

PSO6: recognized their socially responsibilities and become globally competent learners

PSO7: become knowledgeable and motivated citizens by adapting active lifestyle.

20UHC101 - FUNDAMENTALS OF PHYSICAL EDUCATION AND SPORTS

COURSE OUTCOMES

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

CO1: explain the basic concepts of physical education

CO2: apply the scientific principles of various allied subjects in the field of physical education

CO3: categorize the various schemes and programme in physical education

CO4: evaluate the influence of physical education and sports towards international understanding

CO5: design various schemes for the players

20UHC202 – GAME OF SPECIALIZATION

COURSE OUTCOMES

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

CO1: understand the history, rules, regulations and skills of the games

CO2: apply the fundamental techniques of specialization games

CO3: distinguish between beginners and advance players

CO4: judge the performance of players and matches

CO5: adapt with the new trends in various games.

**20UHC203 - CORE PRATICAL – I
(TRACK AND FIELD EVENTS - I)**

COURSE OUTCOMES

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

- CO1: find the rules and regulation of track and field events
- CO2: apply the fundamental techniques of track and field events
- CO3: distinguish between advance athletes and beginners
- CO4: judge the performance of athletes
- CO5: adapt with the new trends in teaching and coaching of track and field events

**20UHC204 - CORE PRACTICAL – II
(GAME OF SPECIALIZATION)**

COURSE OUTCOMES

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

- CO1: find the basic rules and regulations of various games
- CO2: demonstrate the basic skills of various games
- CO3: analyse the strategies of the various games
- CO4: estimate the performance of the players
- CO5: construct the play fields of various games

20UHC305 - TRACK AND FIELD EVENTS-II

COURSE OUTCOMES

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

- CO1: explain the rules and regulation of track and field events
- CO2: make use of fundamental techniques in track and field events
- CO3: distinguish between the beginners and advance athlete through the techniques and tactics
- CO4: judge the performance of the athlete
- CO5: adapt the new training equipment, techniques and trends in the track and field.

20UHC406 - EXERCISE PHYSIOLOGY

COURSE OUTCOMES

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

- CO1 : find the functional changes in human body
- CO2 : develop the physiological fitness of sports persons
- CO3 : analyze the effects of exercise on various systems of human body
- CO4 : compare the functions of human body before and after exercise
- CO5 : design the physiological concepts of physical fitness.

**20UHC407 - CORE PRACTICAL - III
(TRACK AND FIELD EVENTS – II)**

COURSE OUTCOMES

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

- CO1: explain the rules and regulations of track and field events
- CO2: utilize the fundamental techniques in track and field events
- CO3: categorize the achievement level of track and field events
- CO4: assess the mechanism of officiating in track and field events
- CO5: adapt with new techniques and trends in track and field events.

**20UHC408 - CORE PRACTICAL - IV
(YOGA AND GAME OF SPECIALIZATION)**

COURSE OUTCOMES

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

- CO1: enlighten yoga and various games
- CO2: demonstrate various yoga asanas and different games
- CO3: analyze the effects of yoga
- CO4: determine the values of asanas, pranayamas, bandhas and kriyas
- CO5: develop the techniques of yoga and different games.

**20UHO401 - FUNDAMENTALS OF TEST AND MEASUREMENT AND
COMPUTER APPLICATION IN PHYSICAL EDUCATION**

COURSE OUTCOMES

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

- CO1: relate the different types of tests and measurement in physical education
- CO2: identify the sports performance using different sports skill tests
- CO3: compare and contrast the results of different test and measurements
- CO4: determine the value of sports skill tests
- CO5: improve and modify the existing skill test using computer application.

20UHC509 - METHODS IN PHYSICAL EDUCATION

COURSE OUTCOMES

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

- CO1: outline the methods of teaching physical activities and basic statistics
- CO2: organize the tournaments and various types of physical activities
- CO3: analyze the various teaching techniques in the field of physical education
- CO4: evaluate the learning capabilities of the students
- CO5: compose the effective physical education classes.

20UHC510 - GENERAL THEORY AND METHODS OF SPORTS TRAINING

COURSE OUTCOMES

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

- CO1: find the concepts of physical fitness through sports training
- CO2: determine physical fitness components for the sports person
- CO3: classify the differences of technique and tactical preparation
- CO4: evaluate the performance of a player
- CO5: design a training schedule for sports person

20UHC511 - COMPREHENSION AND *viva voce* - I

COURSE OUTCOMES

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

- CO1: demonstrate a literal comprehension of learning
- CO2: apply knowledge of vocabulary used in curriculum
- CO3: identify main idea in reading materials books and other sources
- CO4: depict the level of understanding in their subject matter
- CO5: develop skills in succeeding the interviews

20UHO502 - ORGANIZATION, ADMINISTRATION AND SUPERVISION IN PHYSICAL EDUCATION

COURSE OUTCOMES

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

- CO1: explain the concepts of organization, administration and supervision
- CO2: construct playfield, gymnasium and swimming pool
- CO3: analyze the organization schemes of physical education
- CO4: judge the facilities of infrastructure
- CO5: adapt the standard of physical education program

20UHC612 - TRACK AND FIELD EVENTS - III

COURSE OUTCOMES

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

- CO1: interpret the rules and regulation of track and field events
- CO2: make use of fundamental techniques in track and field events
- CO3: distinguish between the beginners and advance athlete through the techniques and tactics
- CO4: judge the performance of the athlete
- CO5: adapt the new training equipment, techniques and trends in the track and field.

20UHC613 - CORE PRACTICAL -V
(TRACK AND FIELD EVENTS - III AND GAME OF SPECIALIZATION)

COURSE OUTCOMES

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

- CO1: summarize the knowledge of rules and regulation of track and field and specialization games
- CO2: demonstrate the skills of track and field and specialization games perfectly
- CO3: analyze the various training methods for various events and games
- CO4: assess the different types of drills to improve the performance
- CO5: compose a new training schedule for the athletes and players.

20UHC614 - CORE PRACTICAL – VI
(TEACHING PRACTICE IN PHYSICAL EDUCATION)

COURSE OUTCOMES

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

- CO1: select the suitable methods for teaching physical activities
- CO2: make use of the learnt teaching techniques in the physical education classes
- CO3: motivate the students for active participation in sports
- CO4: evaluate the learning capabilities of the students
- CO5: construct a new techniques in teaching methodology.

20UHC615 - INTERNSHIP

COURSE OUTCOMES

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

- CO1: conceive and express the ideas about the organization and administration of sports and games
- CO2: evaluate the problems in the administration of sports events
- CO3: analyze critically the policies, practices, theories of sports management
- CO4: develop the leadership qualities through co-operation and team work
- CO5: work independently, identify the resources and acquire knowledge and skills of sports management by their own self-directed methods of learning.

20UHC616 - COMPREHENSION AND *viva voce* - II

COURSE OUTCOMES

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

- CO1: demonstrate a literal comprehension of learning
- CO2: apply knowledge of vocabulary used in curriculum
- CO3: identify main idea in reading materials books and other sources
- CO4: depict the level of understanding in their subject matter
- CO5: develop skills in succeeding the interviews.

20UHL601 – KINESIOLOGY AND BIOMECHANICS

COURSE OUTCOMES

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

- CO1: explain the concepts of kinesiology and biomechanics
- CO2: apply the biomechanical principles in the field of sports
- CO3: analyze the causes and prevention of muscle injuries
- CO4: determine the influence of the kinetics and kinematics in the field of sports
- CO5: minimize the unwanted expenditure of energy.

20UHL602 - PROJECT AND *viva voce*

COURSE OUTCOMES

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

- CO1: relate the experiments in connection with the projects undertaken
- CO2: plan for literature survey, experimental work and documentation of results
- CO3: analyze the compounds using instruments effectively
- CO4: defend the questions raised in *viva voce* examination
- CO5: develop the experiments independently in the thrust areas of Physical Education, Health Education and Sports.

20UHA101 - TRACK AND FIELD EVENTS-I AND GYMNASTICS

COURSE OUTCOMES

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

- CO1: explain the rules and regulation of track and field events and gymnastics
- CO2: apply the fundamental techniques of track and field events and gymnastics
- CO3: distinguish between advance players and beginners
- CO4: judge the performance of athletes and gymnast
- CO5: adapt with the new trends in the track and field events and gymnastics

20UHA202 - HUMAN PHYSIOLOGY

COURSE OUTCOMES

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

- CO1: label the different parts of human body
- CO2: develop the functions of the human body
- CO3: inspect the different sports injuries of the human body
- CO4: evaluate the physiological fitness of the human body
- CO5: create health conscious among sports person.

20UHA203 - ALLIED PHS PRACTICAL – I

COURSE OUTCOMES

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

- CO1: summarize the knowledge of rules and regulation in gymnastics
- CO2: develop the fundamental movements of gymnastics
- CO3: analyze the various skills of gymnastics
- CO4: judge the performance of gymnast
- CO5: adapt with the new trends in teaching and coaching of gymnastic events

20UHA304 – BADMINTON, HANDBALL AND KHO-KHO

COURSE OUTCOMES

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

- CO1: classify the rules and regulations of badminton, handball and kho-kho
- CO2: utilize the fundamental techniques in badminton, handball and kho-kho
- CO3: categorize the achievement level of badminton, handball and kho-kho players
- CO4: assess the mechanism of officiating in badminton, handball and kho-kho
- CO5: adapt with new techniques and trends in badminton, handball and kho-kho

20UHA405 - YOGA THERAPY

COURSE OUTCOMES

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

- CO1: classify the types of yoga and stages of yoga
- CO2: demonstrate the techniques in asanas, bandhas and pranayama
- CO3: analyze the effect of yoga and pranayama on various individuals
- CO4: influence the yogic practice on physiological systems
- CO5: combine the asanas with pranayama and meditations.

20UHA406 - ALLIED PHS PRACTICAL – II

COURSE OUTCOMES

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

- CO1: recall the measurements of track and field events
- CO2: develop the knowledge of layout the track and field events
- CO3: analyze the different features of MS Word, MS Excel, and Cyber Link Power Director
- CO4: determine the importance of computer application
- CO5: adapt the new changes in track and field measurements and marking.

20UHE401 - HEALTH EDUCATION AND SAFETY EDUCATION

COURSE OUTCOMES

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

- CO1: explain the factors influencing health and safety
- CO2: make use of the knowledge on hygiene and various health programmes
- CO3: analyze the pollutions, various diseases and find their remedies
- CO4: assess the mental health, community health and family life education
- CO5: build and follow the principles of health education and safety measures

20UHE502 - SPORTS INJURIES AND MANAGEMENT

COURSE OUTCOMES

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

- CO1: summarize the various sports injuries and first aid techniques
- CO2: apply the first aid techniques depends upon the sports injuries
- CO3: classify the sports injuries and suggest suitable rehabilitation and massage techniques
- CO4: estimate the effects of rehabilitation and massage
- CO5: develop the knowledge of injury management.

20UHE603 - PSYCHOLOGY AND SOCIOLOGY OF PHYSICAL EDUCATION AND SPORTS

COURSE OUTCOMES

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

- CO1: explain the basic concepts of psychology and sociology
- CO2: apply the psychological and sociological principles in the field of physical education and sports
- CO3: analyze the mentality of sportspersons
- CO4: evaluate the role of psychology and sociology in physical education and sports
- CO5: invent new techniques to solve the psychological problems of sportspersons

20UHN201 - YOGA

COURSE OUTCOMES

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

- CO1: classify the types of yoga and stages of yoga
- CO2: demonstrate the techniques in asanas, bandhas and pranayama
- CO3: analyze the effect of yoga and pranayama on various individuals
- CO4: influence the yogic practice on physiological systems
- CO5: combine the asanas with pranayama and meditations

20UHJ601- EXERCISE THERAPY

COURSE OUTCOMES

Upon completion of the Course, the students will be able to

- CO1 :explain the concepts of exercise therapy
- CO2 : make use of therapeutic equipment
- CO3 : examine the effects of massage
- CO4 : conclude the rehabilitation measures
- CO5 : construct the suitable therapeutic procedures for injured persons

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



B.Sc Computer Science

PROGRAMME SPECIFIC OUTCOMES

AND

COURSE OUTCOMES

B.Sc. DEGREE PROGRAMME IN COMPUTER SCIENCE

Programme Code: UGP009

PROGRAMME SPECIFIC OUTCOMES

On successful completion of B.Sc. Computer Science Programme, the students would have

PSO1: understood the basic concepts involved in computing

PSO2: shared the ideas and the techniques they have learnt

PSO3: applied the knowledge in Computer techniques to solve real world problems

PSO4: thought of new approaches for solving problems in different domains

PSO5: followed ethics in designing softwares

PSO6: collaborated with team members in developing projects

PSO7: gained confidence to appear for competitive examinations.

20USC101 - PROGRAMMING IN C

COURSE OUTCOMES

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

CO1: explain the various programming constructs

CO2: make use of syntax and semantics for different problems

CO3: distinguish primitive and derived data types

CO4: interpret the importance of pointers and file handling

CO5: develop real time applications

20USC102 - COMPUTER ORGANIZATION

COURSE OUTCOMES

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

CO1: explain micro-operations

CO2: identify the components of register, input/output and memory organizations

CO3: analyze pipelining and vector processing

CO4: interpret various types of peripheral devices

CO5: elaborate the algorithms for arithmetic operations

20USC203 - PROGRAMMING IN C++

COURSE OUTCOMES

Upon completion of the course the students will be able to

- CO1: explain the various concepts of OOPs
- CO2: demonstrate overloading and inheritance concepts
- CO3: examine how exception handling is used
- CO4: interpret the features in file handling
- CO5: build template classes and functions

20USC204 - DATA STRUCTURES AND ALGORITHMS

COURSE OUTCOMES

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

- CO1: summarize the ideas of various algorithms
- CO2: identify the storage structures for various problems
- CO3: compare different data structures
- CO4: sketch the application of trees and graphs
- CO5: create applications using different algorithm approaches

20USC205 - CORE PRACTICAL – I (C and C++ Lab)

COURSE OUTCOMES

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

- CO1: demonstrate the basics of procedural oriented and object oriented programming
- CO2: apply the various conditional and control statements
- CO3: examine the various derived types
- CO4: interpret file handling
- CO5: design real time problems

20USC306 - SYSTEMS PROGRAMMING AND OPERATING SYSTEM

COURSE OUTCOMES

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

- CO1: illustrate the usage of system software
- CO2: experiment with the techniques of scheduling, paging and allocation
- CO3: analyze the tasks performed by the operating system
- CO4: justify the choice of memory management techniques in any OS
- CO5: adapt the working environment in different operating systems

20USC307 - RDBMS

COURSE OUTCOMES

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

- CO1: summarize the basics of database, SQL, PL/SQL.
- CO2: make use of tables and execute different SQL queries
- CO3: analyze the various PL/SQL concepts
- CO4: interpret the importance of Packages in PL/SQL
- CO5: develop real time database applications

20USC308 - PROGRAMMING IN JAVA

COURSE OUTCOMES

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

- CO1: recall various basic OOPS concepts
- CO2: make use of packages, interfaces and applets
- CO3: analyze I/O, UTIL and NET packages
- CO4: evaluate interactive design
- CO5: develop real time java applications

20USC309 - CORE PRACTICAL –II (Linux and Oracle Lab)

COURSE OUTCOMES

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

- CO1: demonstrate the various concepts of SQL and PL/SQL
- CO2: solve the real time applications using PL/SQL programs
- CO3: analyse the outputs of various functions
- CO4: interpret interactive design using forms
- CO5: develop real time applications

20USC410 - COMPUTER NETWORKS

COURSE OUTCOMES

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

- CO1: explain the concepts of various reference models, Internet and protocols
- CO2: identify different transmission media and topologies
- CO3: distinguish error detection and error correction of data
- CO4: assess quality of services in Internet
- CO5: implement routing algorithms to determine the optimal path

20USC411 - PHP and MySQL

COURSE OUTCOMES

Upon completion of the course the students will be able to

- CO1: summarize Web Programming concepts
- CO2: make use of PHP elements
- CO3: examine the working environment with WAMP, LAMP and XAMPP
- CO4: interpret the concepts of MySQL
- CO5: create and manipulate images, files and text editors

20USC412 - CORE PRACTICAL – III (JAVA AND WEB DESIGNING LAB)

COURSE OUTCOMES

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

- CO1: demonstrate the basic concepts in Java
- CO2: make use of packages and interfaces in Java
- CO3: inspect the HTML elements for validation
- CO4: interpret OOPS concepts with PHP
- CO5: build web applications

20USO401 – ADVANCED JAVA PROGRAMMING

COURSE OUTCOMES

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

- CO1: explain the usage of various advanced technologies in Java
- CO2: model simple web applications
- CO3: distinguish between layers of MVC
- CO4: determine the importance of frameworks in web development
- CO5: construct real time applications using STRUTS and SPRING

20USC513 - SOFTWARE ENGINEERING

COURSE OUTCOMES

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

- CO1: explain the basics of software engineering
- CO2: make use of software cost estimation techniques
- CO3: discover various design concepts
- CO4: interpret various testing techniques
- CO5: develop UML diagrams

20USC514 - MOBILE APPLICATION DEVELOPMENT

COURSE OUTCOMES

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

- CO1: explain the basic concepts of mobile computing and android
- CO2: utilize the components of android in designing an app
- CO3: distinguish various data storages in android
- CO4: evaluate the use of networking functionalities in android
- CO5: develop real time android applications

**20USC515 - .NET
COURSE OUTCOMES**

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

- CO1: explain the basic concepts of .NET framework
- CO2: demonstrate the interfaces, packages, inheritance and exception handling
- CO3: compare the various .NET controls
- CO4: interpret the use of XML in web services
- CO5: build web application

**20USC516 - CORE PRACTICAL – IV (.NET AND ANDROID LAB)
COURSE OUTCOMES**

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

- CO1: illustrate object oriented programming concepts in C#
- CO2: make use of various controls in .NET
- CO3: analyze .NET and Android applications
- CO4: interpret online applications using ASP.NET
- CO5: develop Android applications

**20USC517 - COMPREHENSION AND *viva voce* - I
COURSE OUTCOMES**

Upon completion of this course, the students will be able to

- CO1: recall the concepts they have studied
- CO2: apply the knowledge confidently to different situations
- CO3: express their ideas to anyone/ group
- CO4: interpret the data
- CO5: get succeeded in competitive examinations

**20USO502 - INTRODUCTION TO R
COURSE OUTCOMES**

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

- CO1: explain the basic R programming concepts
- CO2: make use of functions and packages
- CO3: compare data visualization and testing technique
- CO4: interpret various statistical models
- CO5: develop functions in R

**20USC618 - PYTHON FOR DATA SCIENCES
COURSE OUTCOMES**

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

- CO1: explain the various basics of python
- CO2: experiment with functions, modules and data structures
- CO3: analyse the OOPS concept
- CO4: interpret the file and exception handling
- CO5: build data analysis softwares

20USC619 - CLOUD COMPUTING
COURSE OUTCOMES

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

- CO1: demonstrate cloud services
- CO2: make use of Hadoop platform
- CO3: examine the features in Pig scripting
- CO4: importance of map reduces programming
- CO5: compile the functionalities of Hive, Sqoop and Flume

20USC620 - CORE PRACTICAL - V (PYTHON LAB)
COURSE OUTCOMES

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

- CO1: demonstrate the basics of datatypes and object oriented programming
- CO2: apply various conditional and control statements
- CO3: examine the uses of packages
- CO4: interpret file and exception handling
- CO5: design the data analysis softwares

20USC621 - INTERNSHIP
COURSE OUTCOMES

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

- CO1: conceive and express the ideas about the industries
- CO2: solve the problems of the industries
- CO3: evaluate critically the policies, practices, theories of companies
- CO4: develop the leadership qualities through co-operation and team work
- CO5: work independently, identify the resources, acquire knowledge and skills of business by their own self-directed methods of learning.

20USC622 - COMPREHENSION AND *viva voce* - II
COURSE OUTCOMES

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

- CO1: recall the concepts they have studied
- CO2: apply the knowledge confidently to different situations
- CO3: express their ideas to anyone/ group
- CO4: interpret the data
- CO5: get succeeded in competitive examinations

20USL601- ARTIFICIAL INTELLEGENCE AND MACHINE LEARNING
COURSE OUTCOMES

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

- CO1: summarize the basics of AI and Machine learning.
- CO2: identify the different search methods
- CO3: analyze the various logics and applications
- CO4: interpret the different learning methods
- CO5: develop real time applications

20USL602 - PROJECT AND *viva voce*

COURSE OUTCOMES

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

- CO1: explain the theoretical ideas
- CO2: apply the knowledge confidently to different situations
- CO3: express their ideas to anyone/group effectively
- CO4: assess the existing scenario
- CO5: become entrepreneurs and industry ready personnel

20USA301 - PROGRAMMING IN C & C++

COURSE OUTCOMES

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

- CO1: summarize the use of C and C++ programming
- CO2: make use of decision making and branching statement
- CO3: analyze the user define functions in C
- CO4: interpret the OOP concepts
- CO5: compile error handling, inheritance and polymorphism in C++

20USA402 - PYTHON FOR COMPUTATIONAL MATHEMATICS

COURSE OUTCOMES

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

- CO1: summarize the basics of python for computation
- CO2: make use of various control statements and complex numbers
- CO3: analyze the geometry with turtle modules
- CO4: interpret matrices for computer graphics
- CO5: solve the algebra equations using python packages

20USA403 - ALLIED COMPUTER SCIENCE PRACTICAL FOR MATHEMATICS

COURSE OUTCOMES

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

- CO1: demonstrate the basic programs using C and Python
- CO2: solve the mathematical problems using C and Python
- CO3: inspect the basics of object creation and its execution
- CO4: importance of modules and exceptions
- CO5: design the real time applications using C and Python

20USE401 - NOSQL DATABASES

COURSE OUTCOMES

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

- CO1: summarize the basic concepts of NoSQL databases
- CO2: experiment with the storage architecture
- CO3: compare data integrity between RDBMS and NoSQL
- CO4: interpret the basic concepts of MongoDB
- CO5: design an application using MongoDB

20USE502 - DATA MINING
COURSE OUTCOMES

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

- CO1: explain the concepts of data, data warehouse, and trends of data mining.
- CO2: experiment with data pre-processing
- CO3: distinguish various data mining techniques such as Association rule mining, Classification and Clustering
- CO4: assess the application of data mining
- CO5: collaborate the data mining techniques for various applications

20USE603 - ANIMATION AND VISUAL EFFECTS
COURSE OUTCOMES

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

- CO1: illustrate the basic requirements of animation and its applications
- CO2: utilize the components of Adobe InDesign for editing the interactive styles
- CO3: examine the design principles, concepts, styles and terminologies
- CO4: discover elements from various sources to achieve intended effect
- CO5: create motion graphics based on current industry trends and practices

20USN201 - MODERN LEARNING TOOLS
COURSE OUTCOMES

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

- CO1: explain the basics of websites
- CO2: experiment with various tools to create documents, video and website
- CO3: examine MOOC providers and courses
- CO4: determine the importance of UI in web development
- CO5: develop real time applications

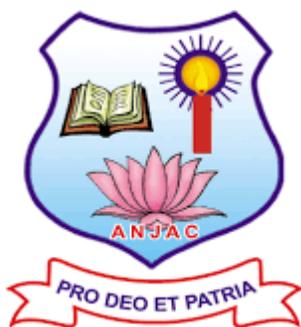
20USJ601 – UI / UX DESIGN
COURSE OUTCOMES

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

- CO1: explain the basics of UX Designing
- CO2: make use of the tools and preferences in UI Designing
- CO3: examine the frontend tools
- CO4: interpret the use of UI in web development
- CO5: develop real time android applications

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



B.C.A

**PROGRAMME SPECIFIC OUTCOMES
AND
COURSE OUTCOMES**

B.C.A. DEGREE PROGRAMME

Programme Code : UGP010

PROGRAMME SPECIFIC OUTCOMES

Upon successful completion of B.C.A. Programme, the students would have

PSO1: applied the knowledge of mathematics, computer science and management in real time applications

PSO2: effectively communicated issues, concepts, plans and decisions both in oral and written form using appropriate supportive technologies.

PSO3: analyzed a given problem and developed an algorithm to solve the problem.

PSO4: developed various real time applications using latest technologies and programming languages

PSO5: attained the Capable of recognizing and resolved ethical issues in Software field and able to know various issues, latest trends in technology development and thereby creating new ideas and solutions to existing problems.

PSO6: performed professionally with social, cultural and ethical responsibility as an individual as well as in multifaceted teams with positive attitude

PSO7: adapted to new technologies and constantly upgraded their skills with an attitude towards independent and lifelong learning

20UAC101 - DIGITAL FUNDAMENTALS

COURSE OUTCOMES

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

- CO1: explain the concepts of number systems, Boolean algebra, universal gates, combinational and sequential logic circuits
- CO2: solve the number conversions and simplify the Boolean expressions
- CO3: analyze the functions of combinational logic and flip-flops
- CO4: evaluate the importance of universal gates, counters and shift registers
- CO5: design digital circuits using logic gates

20UAC102 - PROBLEM SOLVING AND PROGRAMMING

COURSE OUTCOMES

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

- CO1: demonstrate the basics of algorithm, problem solving, phases of SDLC and Operators
- CO2: identify the appropriate logic structure for a given problem using building blocks of C
- CO3: analyze the efficiency of algorithms and I/O Operations
- CO4: interpret the components of logic structure
- CO5: develop C programs with suitable modules to solve the given problem

20UAC203 - PROGRAMMING IN C

COURSE OUTCOMES

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

- CO1: explain the concepts of control flow statements, arrays, pointers, preprocessor and file operations
- CO2: utilize the usage of character arrays and string handling functions
- CO3: categorize the types of functions and compare structure with union
- CO4: interpret the importance of memory allocation using pointers
- CO5: develop programs using basic elements of C

20UAC204 - COMPUTER ORGANIZATION

COURSE OUTCOMES

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

- CO1: explain the different components of computer system
- CO2: identify the functionalities of processing units and I/O devices
- CO3: compare different types of address modes, arithmetic and logic units and memory
- CO4: assess the stack, performance of memory system, hazards of pipelining
- CO5: discuss the execution of instructions, memory hierarchy and concepts of pipelining.

20UAC205 - CORE PRACTICAL - I (C LAB)

COURSE OUTCOMES

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

- CO1: explain the concepts of control flow statements, arrays, pointers, preprocessor and file operations
- CO2: utilize the usage of character arrays, string handling functions
- CO3: categorize the types of functions and compare structure with union
- CO4: interpret the importance of memory allocation using pointers
- CO5: develop programs using basic elements of C

20UAC306 - DATA STRUCTURES AND ALGORITHMS

COURSE OUTCOMES

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

- CO1: explain the basic concepts of linear and non-linear data structures
- CO2: identify the essential operations of data structures
- CO3: examine the performance of traversal, searching and sorting algorithms
- CO4: interpret the applications of data structures
- CO5: design the appropriate data structures for real time problems

20UAC307 - PROGRAMMING IN C++

COURSE OUTCOMES

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

- CO1: illustrate the basic concepts of Object Oriented Programming and I/O operations
- CO2: apply overloading, templates, exception handling and polymorphism
- CO3: classify the types of constructors and inspect the need of destructor
- CO4: determine the uses of inheritance and files
- CO5: develop real time programs using Object Oriented Programming concepts

20UAC308 - CORE PRACTICAL – II (C++ LAB)

COURSE OUTCOMES

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

- CO1: illustrate the basic concepts of Object Oriented Programming and I/O operations
- CO2: apply overloading, templates, exception handling and polymorphism
- CO3: classify the types of constructors and inspect the need of destructor
- CO4: determine the uses of inheritance and files
- CO5: develop real time programs using Object Oriented Programming concepts

20UAC309 - CORE PRACTICAL – III (DTP LAB)

COURSE OUTCOMES

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

- CO1: choose suitable page layout and size for design the given content
- CO2: make use of appropriate tools in CorelDraw, Photoshop and After Effect
- CO3: compare various effects by applying editing tools
- CO4: interpret the various animation effects in designing
- CO5: create an interactive design for satisfying the end users

20UAC410 - OPERATING SYSTEM

COURSE OUTCOMES

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

- CO1: explain the need of operating system, multitasking, scheduling and memory allocation
- CO2: identify the usage of paging, synchronization and inter-process communication
- CO3: analyze the critical section problem and deadlock
- CO4: decide the appropriate scheduling algorithms for resource allocation
- CO5: discuss the resource management techniques

20UAC411 - .NET PROGRAMMING

COURSE OUTCOMES

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

- CO1: explain the concepts and features of .Net framework, C#, ADO.Net and ASP .Net
- CO2: apply the object oriented concepts, .Net Controls and ADO .Net objects
- CO3: examine the validations in websites using web form controls
- CO4: validate user defined namespaces, pointers, delegates and SQL
- CO5: develop console, windows and web applications based on user requirements

20UAC412 - DATABASE TECHNOLOGY

COURSE OUTCOMES

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

- CO1: illustrate the concepts of database, SQL commands, PL/SQL, data entry forms
- CO2: identify the need of data models, data constraints, oracle functions, cursors and data validations
- CO3: analyze various data constraints, normal forms, joins, PL/SQL database objects and reports
- CO4: determine the importance of normalization, form and report builders
- CO5: develop real time applications with suitable databases

20UAC413 - CORE PRACTICAL - IV (.NET AND DATABASE LAB)

COURSE OUTCOMES

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

- CO1: illustrate the basic concepts of C# .Net , ASP.Net, SQL commands, Oracle functions
- CO2 : experiment with set operations, join operations, PL/SQL block, cursor, procedures, functions, delegates and events
- CO3: examine the user defined classes, interfaces, namespaces and database connectivity
- CO4: determine the required tables for ADO .Net application
- CO5: design stand alone applications with database controls

20UAO401 - UNIX AND SHELL PROGRAMMING

COURSE OUTCOMES

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

- CO1: demonstrate the architecture of UNIX, structure of UNIX and processes
- CO2: make use of file UNIX commands and regular expression
- CO3: compare various UNIX editors
- CO4: determine the access permissions and UNIX X window system
- CO5: construct UNIX network environment with application software

20UAC514 - PROGRAMMING IN JAVA

COURSE OUTCOMES

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

- CO1: illustrate the concepts of object oriented programming, arrays, threads, string, exception handling and networking
- CO2: make use of inheritance, interface and Files
- CO3: distinguish console programming with graphical programming
- CO4: determine the classes in Java packages used for real time applications
- CO5: create applications for real time problems

20UAC515 - WEB TECHNOLOGY

COURSE OUTCOMES

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

- CO1: explain the basic concepts of HTML, CSS, fundamentals of jQuery, PHP and MySQL
- CO2: apply the elements of CSS in web pages
- CO3: examine the functions, events, methods, objects of JavaScript and PHP
- CO4: decide the validation controls for web applications
- CO5: create interactive web applications with MySQL

20UAC516 - SOFTWARE ENGINEERING PRINCIPLES

COURSE OUTCOMES

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

- CO1: illustrate the concepts of software process models, planning, design, coding and testing of software project
- CO2: select the suitable process models for real time projects
- CO3: inspect the design, estimation and risk of project
- CO4: determine the appropriate coding and testing for software development
- CO5: develop the software projects with quality metrics

20UAC517 CORE PRACTICAL – V (JAVA LAB)
COURSE OUTCOMES

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

- CO1: explain the concepts of object oriented programming, arrays, threads, string, exception handling and networking
- CO2: make use of inheritance, interface and Files
- CO3: distinguish console programming with graphical programming
- CO4: interpret the classes in Java API packages
- CO5: create stand-alone Java based applications

20UAC518 - CORE PRACTICAL – VI (WEB TECHNOLOGY LAB)
COURSE OUTCOMES

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

- CO1: explain the basic concepts of HTML, CSS, fundamentals of jQuery, PHP and MySQL
- CO2: apply the elements of CSS in web pages
- CO3: examine the functions, events, methods, objects of JavaScript and PHP
- CO4: decide the validation controls for web applications
- CO5: create interactive web applications with MySQL

20UAC519 - COMPREHENSION and *viva voce* - I
COURSE OUTCOMES

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

- CO1 : show in-depth understanding of the courses studied
- CO2 : apply their knowledge of the core courses
- CO3 : inspect the answers to multiple choice questions
- CO4 : estimate the level of understanding of the courses in *viva voce* examination
- CO5 : improve the confidence and skills to succeed in the interviews

20UAO502 - INTERNET OF THINGS
COURSE OUTCOMES

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

- CO1: explain the features, architecture and platforms of IoT
- CO2: experiment with various sensors for making IoT product
- CO3: analyze various applications and communication techniques of IoT
- CO4: determine required mathematical libraries for Arduino
- CO5: create an IoT application for real time problems using Arduino

20UAC620 - MOBILE PROGRAMMING
COURSE OUTCOMES

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

- CO1: explain the architecture of Android, DVM, activity life cycle, widgets and controls
- CO2: identify the appropriate SDK for developing android applications
- CO3: categorize the types of layouts, location based services and graphical user interface
- CO4: decide the activities and frameworks for mobile application development
- CO5: develop mobile applications with database connectivity using flutter

20UAC621 - COMPUTER NETWORKS

COURSE OUTCOMES

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

- CO1: explain the concept of networking, OSI reference model, networking device, transmission media and routing
- CO2: identify the types of networks and functionalities of various layers
- CO3: compare connection oriented & connectionless services and examine the significance of TCP
- CO4: assess the techniques involved in framing, congestion control and evaluate the importance of IP addresses
- CO5: discuss the various network protocols

20UAC622 - CORE PRACTICAL - VII (MOBILE PROGRAMMING LAB)

COURSE OUTCOMES

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

- CO1: infer the working principles of mobile applications
- CO2: utilize the layouts of mobile applications
- CO3: inspect the uses of Graphical User Interfaces in mobile applications
- CO4: decide the need of drawings and maps options
- CO5: develop mobile applications using databases

20UAC623 - INTERNSHIP

COURSE OUTCOMES

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

- CO1: demonstrate the latest concepts and emerging trends in IT industry
- CO2: apply the curriculum knowledge in industry applications
- CO3: analyse the scope of emerging technologies in IT industry
- CO4: assess the strength of recent technologies and choose an apt technology for developing a real time application
- CO5: develop a real time application using recent technologies

20UAC624 - COMPREHENSION and *viva voce* - II

COURSE OUTCOMES

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

- CO1 : show in-depth understanding of the courses studied
- CO2 : apply their knowledge of the core courses
- CO3 : inspect the answers to multiple choice questions
- CO4 : estimate the level of understanding of the courses in *viva voce* examination
- CO5 : improve the confidence and skills to succeed in the interviews

20UAL601 - INFORMATION SECURITY

COURSE OUTCOMES

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

- CO1: demonstrate the current information security systems, threats, IDPS, security failures, firewalls and basics of cryptography
- CO2: identify the security plan and cryptographic algorithms
- CO3: inspect firewalls, security and cryptographic tools
- CO4: assess the cryptographic algorithms for secure transactions
- CO5: discuss secured applications with the security tools and protocols

20UAL602 - PROJECT AND *viva voce*

COURSE OUTCOMES

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

- CO1: find project goals, constraints, deliverables, performance criteria, and control needs in consultation with the end users
- CO2: plan Software Requirements Specification (SRS) for a project
- CO3: discover project management knowledge, processes, lifecycle, tools and techniques
- CO4: appraise the project management practices including testing to meet the needs of the users
- CO5: construct the product and present the findings in report format

20UAA301 - RELATIONAL DATABASE MANAGEMENT SYSTEM

COURSE OUTCOMES

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

- CO1: explain the basics of database, relational set operators and SQL commands
- CO2: identify the types of database design
- CO3: examine the basic commands for table creation
- CO4: determine the commands for data manipulation
- CO5: develop a transactional database for accounting

20UAA302 - WEB DESIGNING

COURSE OUTCOMES

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

- CO1: explain the structure of web page, HTML tags and JavaScript
- CO2: make use of the elements of CSS for additional effects
- CO3: examine the web development environment using Dreamweaver
- CO4: decide the suitable validation controls of JavaScript
- CO5: create a new Web page using HTML, CSS and JavaScript

20UAA403 - DESKTOP PUBLISHING FOR COMMERCE (CA)

COURSE OUTCOMES

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

- CO1: choose suitable page layout and size for design the given content
- CO2: make use of appropriate tools in CorelDraw, Photoshop and flash
- CO3: compare various effects by applying editing tools
- CO4: interpret the various animation effects in designing
- CO5: create an interactive design for satisfying the end users

20UAA404 - ALLIED COMPUTER APPLICATIONS PRACTICAL FOR COMMERCE (CA)

COURSE OUTCOMES

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

- CO1: extend the applications of DTP and RDBMS for commerce stakeholders
- CO2: categorize with designing tools and make use of Oracle functions
- CO3: examine the various effects applied on images and analyze the Oracle commands for manipulating the data
- CO4: determine the importance of animation effects and relational set operations
- CO5: create interactive designs and construct a database with transactional data

20UAA405 - DESKTOP PUBLISHING FOR VISUAL COMMUNICATION

COURSE OUTCOMES

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

- CO1: list out the designing software and explain the basics of animation
- CO2: make use of color adjustments, layers and drawing tools
- CO3: inspect with text objects and transitions
- CO4: appraise the importance of 3D effects in animation and designing
- CO5: create interactive design based on the requirements.

20UAA406 - ALLIED COMPUTER APPLICATIONS PRACTICAL FOR VISUAL COMMUNICATION

COURSE OUTCOMES

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

- CO1: extend the applications of DTP and web designing for multimedia designers
- CO2: apply various tools in Illustrator, Photoshop and Flash for designing web page
- CO3: discover various effects applied on vector and bitmap images by applying tools like cropping, resampling, resizing and special effects to bitmap
- CO4: determine the various HTML tags for web page designing
- CO5: create static and dynamic web applications using JavaScript

20UAE401 - COMPUTER GRAPHICS

COURSE OUTCOMES

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

- CO1: explain the video display devices, attributes of output primitives, 2D transformations and visible surface detection methods
- CO2: identify the graphics softwares and apply basic 2D transformations
- CO3: examine 3D curves, projections and the clipping techniques
- CO4: evaluate the line drawing algorithms and different visible surface detection methods
- CO5: design basic 2D graphics images and 3D scenes using output primitives

20UAE502 - PYTHON PROGRAMMING

COURSE OUTCOMES

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

- CO1: explain the basics of python, modules, functions and files
- CO2: identify the object oriented concepts in python
- CO3: analyze the various python libraries
- CO4: interpret string handling functions and inheritance
- CO5: create simple python programs using lambda function and Pandas

20UAE603 - RECENT TRENDS IN COMPUTER APPLICATIONS

COURSE OUTCOMES

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

- CO1: explain the concepts of big data, hadoop and cloud computing
- CO2: categorize cloud computing services and hadoop versions
- CO3: analyze the uses of cloud computing, Big data and virtualization
- CO4: determine the hadoop distributed file system, data scientist and grid computing
- CO5: develop an application using map / reduce technique and store data in cloud storage

20UAN201 - G-SUITE

COURSE OUTCOMES

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

- CO1: illustrate the uses of internet, Google account, word processing, presentation and spread sheets
- CO2: make use of Google Calendar, Docs, Slides, Sheets, Translator and forms
- CO3: examine the working principles of blogger and forms
- CO4: interpret the applications of G-suite with real world data
- CO5: create forms, docs, sheets, slides, folders in Google Drive

20UAJ601 - MULTIMEDIA APPLICATIONS

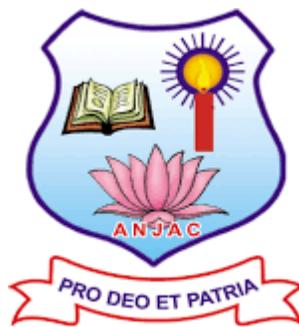
COURSE OUTCOMES

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

- CO1: explain the environment of Photoshop and InDesign
- CO2: make use of tools in Photoshop and InDesign
- CO3: Analyze working with layer styles in Photoshop
- CO4: interpret the usage of various shapes and masking
- CO5: create an interactive design and animation

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



B.Sc Visual Communication

PROGRAMME SPECIFIC OUTCOMES

AND

COURSE OUTCOMES

B.Sc. DEGREE PROGRAMME IN VISUAL COMMUNICATION

Programme Code : UGP011

PROGRAMME SPECIFIC OUTCOMES

On successful completion of B.Sc., Visual Communication Programme, the students would have

PSO1: learnt the concepts of visual literacy.

PSO2: acquired the skills necessary for the Visual Communication industry.

PSO3: understood the importance of visual learning.

PSO4: gained the research attitude in the field of media.

PSO5: acquired the skills to communicate to the multicultural society through various media embracing the beliefs, moral and ethical values.

PSO6: attained the ability to work in a group to produce media content.

built the ability to understand critically the media and their role in shaping the politics, society, culture, economics and daily lives.

20UVC101 - INTRODUCTION TO VISUAL COMMUNICATION

COURSE OUTCOMES

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

CO1 : explain the various aspects of communication

CO2 : identify the communication techniques in Visual Media

CO3 : analyze the scope and approaches of Visual Communication

CO4 : appraise the importance of Visual communication

CO5 : adapt the creative and effective communication in the media world

20UVC102 - FUNDAMENTALS OF JOURNALISM

COURSE OUTCOMES

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

CO1 : choose the field of print media as their career

CO2 : make use of the news ethics and social responsibilities of Journalist in their career

CO3 : analyze the news values and structure of print media organization

CO4 : criticize the unethical dimension of society

CO5 : improve the Journalistic writing and reporting skill

20UVC103 - CORE PRACTICAL – I (DRAWING AND PAINTING - LAB)

COURSE OUTCOMES

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

- CO1 : explain basic color harmonies including monochromatic, triadic, complementary, and analogous and to create one or more paintings applying color theory
- CO2 : make use of the individual vision for painting the human form
- CO3 : analyze the concepts of style, composition, and content as they relate to the paintings
- CO4 : appraise the painting techniques including water colour, oil colour and acrylic colour
- CO5 : modify the figure painting of one's own and the work of other artists

20UVC204 - MEDIA WRITING TECHNIQUES

COURSE OUTCOMES

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

- CO1 : outline the skills in technical writing for various media
- CO2 : apply the writing skills for print and broadcasting medium
- CO3 : discover the creative skills in media content writing
- CO4 : evaluate the techniques of news writing and script writing
- CO5 : create the innovative contents and scripts for different media

20UVC205 – CORE PRACTICAL – II (JOURNALISM AND REPORTING – LAB)

COURSE OUTCOMES

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

- CO1: outline the writing techniques for various forms in Journalism
- CO2: apply the creative skills on selection of words
- CO3: discover the contents for blogs and various social media
- CO4: interpret the skills for investigation and photojournalism
- CO5: improve the Journalistic skills and reporting techniques

20UVC206 – CORE PRACTICAL – III (RADIO PRODUCTION – LAB)

COURSE OUTCOMES

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

- CO1: explain the various forms of radio programs
- CO2: select the content for effective delivery through radio
- CO3: discover the creative sound techniques in audio editing
- CO4: estimate the power of live commentary and online radio programs
- CO5: develop the production skills in different radio genre

20UVC307 - THEORIES OF MASS COMMUNICATION

COURSE OUTCOMES

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

- CO1 : explain the historical development of Mass Communication theories and how they link with historically important social, political and technological events/issues in the field of communication
- CO2 : identify the strengths and limitations of basic theories of mass communication and the ability to apply those theories in research and practice
- CO3 : analyze how mass communication theories are accepted throughout society.
- CO4 : justify that mass communication is often at the centre of how we perceive “truth “ and “reality”
- CO5 : discuss and evaluate theories as applied to practical mass communication problem

20UVC308 - FILM STUDIES

COURSE OUTCOMES

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

- CO1 : outline the film language and various forms in films
- CO2 : identify the different kinds of technique in film making
- CO3 : analyze the film construction and current scenario of industry
- CO4 : assess the film crew works and criticism of films
- CO5 : develop the skills to match the current trends in film industry

20UVC309 – CORE PRACTICAL – IV (PHOTOGRAPHY – LAB)

COURSE OUTCOMES

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

- CO1 : find the fundamental knowledge on basic photography
- CO2 : experiment with the lighting effects in photography
- CO3 : analyze the functions of the DSLR camera
- CO4 : evaluate the uses of the accessories of camera
- CO5 : design the composition and aesthetics using different types in photography

20UVC310 – CORE PRACTICAL – V (SHORT FILM MAKING – LAB)

COURSE OUTCOMES

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

- CO1 : list out the methods of story development
- CO2 : make use of storyboards for film making
- CO3 : examine the production process
- CO4 : appraise the importance of the post-production process
- CO5 : compile the processes of film making for distribution.

20UVC411 - PRINT AND PUBLICATION
COURSE OUTCOMES

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

- CO1 : find the core concept of printing
- CO2 : plan the layout of printing
- CO3 : examine the designing methods for various printing processes
- CO4 : estimate the various printing materials
- CO5 : discuss the concepts for printing and publishing

20UVC412 - MEDIA AND DIGITAL MARKETING
COURSE OUTCOMES

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

- CO1 : choose the digital marketing in contemporary business environment
- CO2 : experiment with digital marketing and its effectiveness.
- CO3 : examine the various digital channels and their advantages.
- CO4 : evaluate and integrate different digital media and create marketing content.
- CO5 : create and design digital marketing strategies

20UVC413 – CORE PRACTICAL – VI (GRAPHIC DESIGNING - LAB)
COURSE OUTCOMES

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

- CO1: define clearly the visual and verbal forms using appropriate techniques for the intended audience
- CO2: experiment with designing in enhancing the viewer comprehension for extracting meaning from designed elements
- CO3: analyze the ethical, environmental, legal, or social effects of designed works on the larger global community
- CO4: deduct the visual form in response to communication problems, including an understanding of principles of visual composition, information hierarchy.
- CO5: design the symbolic representation, typography, and the construction of meaningful images.

20UVO401 - PHOTOJOURNALISM
COURSE OUTCOMES

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

- CO1 : explain the power of image and Photojournalism
- CO2 : apply the photographic skills for news representation
- CO3 : compare the photographic images with media contents
- CO4 : justify the need and importance of photojournalistic skills
- CO5 : develop the digital documentation skills in media profession

20UVC514 - THEATRE ARTS

COURSE OUTCOMES

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

- CO1 : explain theatre-performance place and space
- CO2 : identify the cultural impact and influences of theatre
- CO3 : examine theatre literature, production and technical aspects
- CO4 : interpret the essential vocabulary and processes of theatre
- CO5 : develop the ability to write, enact and produce simple plays

20UVC515 - INTRODUCTION TO GAME DESIGNING AND DEVELOPMENT

COURSE OUTCOMES

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

- CO1 : list the networking issues involved in games development.
- CO2 : apply the techniques and methods in the production of industry-standard game-art animation assets, game prototypes and documents.
- CO3 : categorize the uses of graphics, multimedia and game engines
- CO4 : appraise the framework of an overall narrative structure to create interesting plots, subplots and gameplay for an area or level.
- CO5 : compile the production of a computer game, allocating resources and developing an efficient schedule, budget to develop the game.

20UVC516 – CORE PRACTICAL – VII (ANIMATION – LAB)

COURSE OUTCOMES

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

- CO1 : explain the basics of Animation software
- CO2 : apply the specialty of Animation
- CO3 : examine the techniques of Animation
- CO4 : evaluate the special effects in 2D and 3D
- CO5 : create animation models

20UVC517 – CORE PRACTICAL – VIII (VISUAL EFFECTS – LAB)

COURSE OUTCOMES

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

- CO1 : explain 2D and 3D computer generated imagery and live action elements using compositing techniques
- CO2 : identify the relationship between filmed and generated images.
- CO3 : compare and contrast the creative thinking, ideas generation and visual effects problem solving
- CO4 : assess the images and physical sets to digitally re-create lights, cameras, locations and objects
- CO5 : discuss the work collaboratively in interdisciplinary teams on the production of visual effects

20UVC518 - COMPREHENSION AND *viva voce* - I
COURSE OUTCOMES

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

- CO1 : show in-depth understanding of the courses studied
- CO2 : apply their knowledge of the core courses
- CO3 : inspect the answers to multiple choice questions
- CO4 : estimate the level of understanding of the courses in *viva voce* examination
- CO5 : improve the confidence and skills to succeed in the interviews

20UVO502 – DOCUMENTARY
COURSE OUTCOMES

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

- CO1 : outline the documentary production and power of documentaries
- CO2 : organize the words for constructing documentary script with reality
- CO3 : discover the different concepts of stories with real background information
- CO4 : assess the target audience for documentary films
- CO5 : create the new documentary concepts for mass audience

20UVC619 - MEDIA MANAGEMENT
COURSE OUTCOMES

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

- CO1 : define the working structure of media organizations
- CO2 : utilize the skills for media management
- CO3 : examine the necessities for project management in media
- CO4 : determine the etiquette in media organization
- CO5 : maximize sales promotions in media organization

20UVC620 - TELEVISION PRODUCTION
COURSE OUTCOMES

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

- CO1: explain the significance of television medium
- CO2: organize the various stages of video production
- CO3: analyze the basics of lighting for television production
- CO4: appraise the methods of video and audio mixing
- CO5: adapt the linear and non-linear editing methods

20UVC621 – CORE PRACTICAL – IX (TELEVISION PRODUCTION – LAB)
COURSE OUTCOMES

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

- CO1: define the basic elements of video production
- CO2: organize the various stages of television production
- CO3: analyze the multi-camera setups in television production
- CO4: appraise the techniques of mobile media production
- CO5: develop the skills in news production methods

20UVC622 - INTERNSHIP
COURSE OUTCOMES

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

- CO1 : relate the concepts of internship in their career
- CO2 : apply the knowledge in the practical working environment
- CO3 : categorize the jobs and their responsibilities
- CO4 : assess the various working environment and industry
- CO5 : build their future goals and ambitions

20UVC623 - COMPREHENSION AND *viva voce* - II
COURSE OUTCOMES

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

- CO1 : show in-depth understanding of the courses studied
- CO2 : apply their knowledge of the core courses
- CO3 : inspect the answers to multiple choice questions
- CO4 : estimate the level of understanding of the courses in *viva voce* examination
- CO5 : improve the confidence and skills to succeed in the interviews

20UVL601 - NEW MEDIA STUDIES
COURSE OUTCOMES

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

- CO1 : recall the basic power of new media studies
- CO2 : make use of the techniques in media field
- CO3 : analyze the new media technologies
- CO4 : narrow down the career choice in new media studies
- CO5 : adapt the value of new media in the field of education.

20UVL602 - PROJECT AND *viva voce*
COURSE OUTCOMES

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

- CO1 : define the basics of documentary and short film production
- CO2 : make use of the script for short film
- CO3 : analyze the medium and its application
- CO4 : evaluate the characterization strategies in visualization
- CO5 : adapt the different types of documentary

20UVA301 - DIGITAL AND SOCIAL MEDIA ADVERTISING
COURSE OUTCOMES

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

- CO1 : choose the technological catalysis in delivering value
- CO2 : identify the online consumer behaviors and concepts of cyber branding
- CO3 : classify the technological importance of SEO(Search Engine optimization)
- CO4 : appraise the values of digital marketing
- CO5 : design various marketing platforms

20UVA302 - FILM AND LITERATURE

COURSE OUTCOMES

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

- CO1 : define the relationship between narrative film and fiction film
- CO2 : select the structure and narrative techniques of novels
- CO3 : examine the structure and narrative techniques for film adaptations
- CO4 : justify how and why filmic versions differ from their literary sources
- CO5 : combine the films and literary texts

20UVA403 - MOBILE ADVERTISING

COURSE OUTCOMES

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

- CO1 : define the criteria of mobile applications by category for a defined mobile app audience.
- CO2 : utilize the importance, history and future of the mobile advertising, platforms, and best practices.
- CO3 : categorize the mobile advertising formats, media buys, analytics and campaign integration.
- CO4 : evaluate the mobile advertisement design and information priorities.
- CO5 : develop the right mobile advertising method and present and defend it persuasively.

20UVA404 - WRITING FOR MEDIA

COURSE OUTCOMES

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

- CO1: relate the news values and concepts of newsworthiness
- CO2: apply the principles of news language and news story structure
- CO3: examine the news writing and news story structure concepts and hence to develop the skills of writing for print, broadcast and online news media
- CO4: conclude the key differences between hard news, soft news and long-form journalism
- CO5: improve the news writing and news story structure that is sufficient to write for news media

20UVE401 - DEVELOPMENT COMMUNICATION

COURSE OUTCOMES

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

- CO1 : explain the developmental role in communication
- CO2 : identify the problems and issues of development communication
- CO3 : examine the development communication and its relation with media and society
- CO4 : influence the functioning of media in development coverage
- CO5 : improve the skills to design communication strategies for development

20UVE502 - WOMEN AND MEDIA

COURSE OUTCOMES

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

- CO1 : explain the role of women in media
- CO2 : identify the concept of gender equality and its operation in society
- CO3 : analyze the women's representation in literary and various media
- CO4 : evaluate the basic notions of gender in development contest
- CO5 : discuss the concept of gender and its operation in society

20UVE603 - INTRODUCTION TO HAM RADIO

COURSE OUTCOMES

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

- CO1 : explain the concept of Ham Radio
- CO2 : experiment with Ham Radio function
- CO3 : examine the impact of Ham radio in various situations
- CO4 : evaluate communication strategies through Ham radio
- CO5 : discuss about the enhancements of Ham Radio

20UVN201 - MEDIA LITERACY

COURSE OUTCOMES

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

- CO1: know the media literacy content
- CO2: make use of the various media audience
- CO3: examine the principles of media literacy
- CO4: evaluate the cross media culture
- CO5: design media effects and media ownership

20UVJ601 - DIGITAL PHOTOGRAPHY

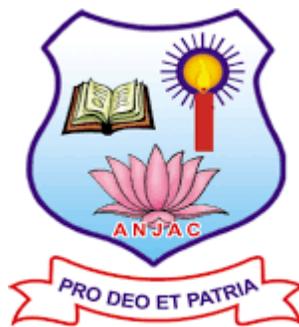
COURSE OUTCOMES

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

- CO1: explain the operation of DSLR camera
- CO2: apply the modification to the original images
- CO3: analyze the various tools in Photoshop
- CO4: appraise the color changing techniques
- CO5: adapt the retouching techniques

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



B.A Economics

PROGRAMME SPECIFIC OUTCOMES

AND

COURSE OUTCOMES

B.A. DEGREE PROGRAMME IN ECONOMICS

Programme Code : UGP012

PROGRAMME SPECIFIC OUTCOMES

On successful completion of B.A. Economics Programme, the students would have

PSO1: understood, matched and spelt out the comprehensive definitions and basic concepts of economics in modern society

PSO2: demonstrated the economic ideas, principles and thoughts effectively with suitable illustrations in the present situations

PSO3: made use of the economic theories and verified the relevance of the same with the available economic information in the contemporary market situations

PSO4: sensitized the market analysis with symmetric and asymmetric conditions in order to enhance the social benefit

PSO5: possessed knowledge, values and beliefs of multifaceted discipline of economics to interact respectfully with morality in the heterogeneous society

PSO6: validated the principles and laws of economics by co-ordinating the factors of production to minimize the social loss and maximize the social gain with the value judgment

PSO7: capacitated to elaborate and evaluate the economic situations independently and capable of exhibit the economic analysis through the appropriate ICT enabled data sources.

20UEC101 - MICROECONOMICS - I

COURSE OUTCOMES

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

- CO1: remember and explain the basic definitions, concepts and analyses in Economics
- CO2: identify the basic laws of consumption both on cardinal and ordinal ways
- CO3: analyse the characteristics of different factor inputs and their importance in the field of production of goods and services
- CO4: assess the nature and importance of revenue of the firms under different market conditions
- CO5: construct cost functions both in the short run and in the long run.

20UEC102 - MONEY AND BANKING

COURSE OUTCOMES

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

- CO1: explain the concepts related to money and banking
- CO2: identify the components of money supply in India
- CO3: compare and contrast different monetary theories
- CO4: evaluate the role of commercial banks in economic development
- CO5: discuss the measures to stabilize the economy

20UEC203 - MICROECONOMICS - II

COURSE OUTCOMES

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

- CO1: illustrate the concepts related to pricing, national income, factor pricing, break even point and different market conditions
- CO2: make use of the knowledge and identify how prices are fixed in different market conditions
- CO3: analyse different theories related to factor income and estimation of national income
- CO4: judge the importance of national income and its difficulties in the estimation
- CO5: discuss how factor income will be distributed among the factors of production and fix optimum level of output by the firm.

20UEC304 - STATISTICS – I

COURSE OUTCOMES

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

- CO1: outline the comprehensive knowledge in statistics
- CO2: identify the appropriate sampling techniques for data collection
- CO3: assume the suitable statistical tools to analyse the data
- CO4: estimate the statistical values without error
- CO5: discuss the results ethically and effectively

20UEC305 - AGRICULTURAL ECONOMICS

COURSE OUTCOMES

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

- CO1: recollect and explicit the knowledge of agricultural economics and explore the concepts of operational land holdings, cropping pattern and land reforms in India
- CO2: identify the existing financial sources and agricultural credit system
- CO3: categorise the core content of the land system and agricultural marketing
- CO4: appraise the agricultural marketing and the agricultural prices commission
- CO5: formulate ideas to the Government to make policy decision in agricultural sector

20UEC406 - STATISTICS - II

COURSE OUTCOMES

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

- CO1: illustrate the different statistical tools like correlation, regression, index numbers, time series and association of attributes
- CO2: make use of appropriate statistical tools to test the theories in economics
- CO3: compare the time series data with cross-sectional data
- CO4: interpret the results obtained by analyzing the data
- CO5: develop knowledge on the application of statistical package

20UEO401 - ECONOMICS OF TRANSPORTATION

COURSE OUTCOMES

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

- CO1: explain the components of transportation
- CO2: identify the importance of different transport sectors in India
- CO3: analyse the prospects of transport sectors of our economy
- CO4: evaluate the problems of different transport sectors
- CO5: discuss the relationship between economic development and transport sector

20UEC507 - MACROECONOMICS - I

COURSE OUTCOMES

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

- CO1: acquire knowledge on the fundamental concepts in macroeconomics
- CO2: identify the circular flow of income in different sectors
- CO3: analyze the consumption and investment functions
- CO4: evaluate the factors that influence the aggregate demand and supply functions
- CO5: discuss the working of multiplier and accelerator to stabilize the economy

20UEC508 - MATHEMATICAL ECONOMICS - I

COURSE OUTCOMES

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

- CO1: explain the mathematical operations used in economics
- CO2: identify the nature of diagrams in economics with the help of mathematical economics
- CO3: analyze the consumers' behaviour mathematically
- CO4: estimate the producers' equilibrium mathematically
- CO5: build an economic model with the help of mathematics.

20UEC509 - INTERNATIONAL TRADE

COURSE OUTCOMES

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

- CO1: explain the fundamental concepts of international trade
- CO2: apply the trade theories with simple illustrations
- CO3: analyse the economic theory related to international trade
- CO4: evaluate the functions of the international trade system and international trade organizations
- CO5: discuss the trade movements at international level

20UEC510 - ECONOMICS OF DEVELOPMENT

COURSE OUTCOMES

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

- CO1: explain the basic concepts related to economic development
- CO2: identify the various factors influencing economic development
- CO3: categorize the status of economies on the basis of development
- CO4: choose the appropriate theories for underdeveloped countries
- CO5: improve and strengthen the existing developmental theories to the contemporary situation

20UEC511 – COMPREHENSION AND *viva voce* - I

COURSE OUTCOMES

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

- CO1: explain the comprehensive definitions and basic concepts of economics
- CO2: organise the subject matter of economics
- CO3: examine the economic ideas, principles and thoughts effectively with simple examples
- CO4: interpret the economic concepts in his own style
- CO5: master interview skills

20UEO502 - EXPORT MANAGEMENT

COURSE OUTCOMES

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

- CO1: explain the concepts related to export management
- CO2: make use of export procedures in export business
- CO3: analyse the various export promotion measures
- CO4: assess the assistance given to export sector
- CO5: compile the documents related to export business sector

20UEC612 - MACROECONOMICS - II

COURSE OUTCOMES

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

- CO1: explain the concepts like market equilibrium, inflation, business cycle and supply-side economics
- CO2: apply the theories of the business cycle in economic decision making
- CO3: analyze the various factors influencing the process of macroeconomics
- CO4: appraise the performance of macroeconomic policy
- CO5: integrate the product market with money market

20UEC613 - MATHEMATICAL ECONOMICS - II

COURSE OUTCOMES

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

- CO1: explain the behavior of the consumers, firms and markets mathematically
- CO2: apply the mathematical techniques in price theories
- CO3: compare the various market equilibrium
- CO4: interpret the structure of markets and sectoral relationship
- CO5: construct mathematical model and econometric model

20UEC614 - FISCAL ECONOMICS

COURSE OUTCOMES

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

- CO1: explain the subject matter of public finance
- CO2: identify the fiscal operations of the Government
- CO3: analyze the effects of public expenditure in India
- CO4: appraise the budget and budgetary procedure in India
- CO5: discuss the financial relationship between Central and State Government

20UEC615 - INTERNSHIP
COURSE OUTCOMES

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

- CO1 : explain how the resources are distributed internally and within the market
- CO2: make use of internship experience in solving business issues
- CO3 : analyse the domestic and international business conditions
- CO4 : appraise an ethical business plan and budget with a team
- CO5 : elaborate how macroeconomic events affect individual organisations

20UEC616 – COMPREHENSION AND *viva voce* - II
COURSE OUTCOMES

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

- CO1: explain the comprehensive definitions and basic concepts of economics
- CO2: organise the subject matter of economics
- CO3: examine the economic ideas, principles and thoughts effectively with simple examples
- CO4: interpret the economic concepts in his own style
- CO5: master interview skills.

20UEL601 - ECONOMIC THINKERS
COURSE OUTCOMES

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

- CO1: acquire knowledge on the evolution of economic thought
- CO2: identify the relevance of the different schools of thought in the present World
- CO3: classify, compare and distinguish the different schools of thought
- CO4: justify the changing paradigm of economic thought
- CO5: elaborate the superiority of economic thought of Indians

20UEL602 - PROJECT AND *viva voce*
COURSE OUTCOMES

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

- CO 1: recall the concepts and theories related to the select branch of economics taken for research
- CO 2: make use of theories learnt to verify the economic theory or to solve the socio-economic issues
- CO 3: assume the research ability and reflective thinking towards the researchable issues in economics
- CO 4: defend the research findings in a public forum
- CO5: develop a research proposal for funding agencies which encourages minor research

20UEA101 - BUSINESS ECONOMICS

COURSE OUTCOMES

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

- CO1: explain the basic concepts of business economics
- CO2: identify the different costs and revenues involved in a business
- CO3: examine the market trend and predict the demand
- CO4: interpret the business environment with economic policy
- CO5: design a function which maximizes the profit of a firm

20UEA202 - INDIAN ECONOMIC DEVELOPMENT

COURSE OUTCOMES

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

- CO1: explain the key issues of Indian Economy
- CO2: identify the issues which restrict the economic development of India
- CO3: examine the structural relationship of the Indian economy
- CO4: evaluate and offer solutions to improve the economic development of our nation
- CO5: assess the performance of Indian economy under globalization

20UEA303 - PRINCIPLES OF ECONOMICS

COURSE OUTCOMES

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

- CO1: explain the basic principles of economics
- CO2: make use of the economic principles in the ordinary business life
- CO3: examine the factors that determine the consumer behaviour in the market
- CO4: estimate the demand for and supply of a product
- CO5: construct and optimize the cost, revenue and profit functions for a business firm

20UEA404 - ECONOMIC LEGISLATIONS

COURSE OUTCOMES

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

- CO1: explain the role of legislations in economic development
- CO2: identify the legislative mechanism to run a lawful business
- CO3: distinguish between legislative arrangements for social and economic prosperity
- CO4: justify the business organizations in Indian jurisdiction
- CO5: build a lawful institution to stabilize a fair market conditions

20UEE401 - INDIAN ECONOMY

COURSE OUTCOMES

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

- CO1: explain the structural composition of Indian economy
- CO2: identify the key developmental issues in the Indian economy
- CO3: categorise the developmental factors of the Indian economy
- CO4: evaluate the impact of economic reforms in India
- CO5: discuss the pros and cons of the economic issues in India

20UEE502 - ECONOMICS OF PLANNING

COURSE OUTCOMES

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

- CO1: explain the concepts related to economic planning
- CO2: identify the types of planning suitable for different economic system
- CO3: analyse the planning process in India
- CO4: appraise the Five year plans of India
- CO5: discuss the operations of planning machinery

20UEE603 - ENVIRONMENTAL ECONOMICS

COURSE OUTCOMES

Upon completion of the course the students will be able to

- CO1: explain the basic concepts in environmental economics
- CO2: make use of natural resources morally for the betterment of the society
- CO3: analyse the trade-off between environment and economic development
- CO4: estimate the environmental damages in the process of economic development
- CO5: discuss the existing environmental policies to attain sustainable development

20UEN201 - FUNDAMENTALS OF INTERNATIONAL TRADE

COURSE OUTCOMES

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

- CO1: explain the concepts related to international trade
- CO2: identify the pros and cons of trade policies
- CO3: classify the components of balance of payments
- CO4: assess the importance of exchange rate
- CO5: discuss the role of international financial institutions

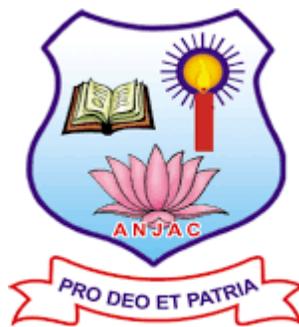
20UEJ601 - RURAL ENTREPRENEURSHIP
COURSE OUTCOMES

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

- CO1: explain the role and significance of rural enterprises
- CO2: identify the sources for rural enterprises
- CO3: categorise the rural entrepreneurs and artisans
- CO4: choose the institutional supports to start rural enterprises
- CO5: design a proposal for new rural venture independently

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



B.B.A

PROGRAMME SPECIFIC OUTCOMES

AND

COURSE OUTCOMES

B.B.A. DEGREE PROGRAMME

Programme Code : UGP013

PROGRAMME SPECIFIC OUTCOMES

On successful completion of the Bachelor in Business Administration programme, the students would have acquired and developed competencies essential to

PSO1: recollect factual, conceptual, procedural, and meta-cognitive aspects pertaining to core, allied, and optional courses in Business Administration.

PSO2: listen and express their thoughts and ideas correctly, clearly and completely through appropriate media - written and oral – in personal and inter-personal context.

PSO3: apply, summarize, and infer principles, processes, and procedures in management with ethical values and beliefs of multi-cultures and a global perspective.

PSO4: define problems, formulate and test hypotheses, analyze, interpret and draw conclusions from data and information pertaining to business, social, and personal situations.

PSO5: arrive at decisions through analyzing, attributing and organizing information, with a sense of inquiry, capability for making relevant/appropriate inquiry recognizing cause-and-effect relationships, based on results of experimental investigation in the fields of Management.

PSO6: judge the factual, conceptual or creative value of elements and functions of management for a given purpose in order to work effectively, efficiently, and respectfully with diverse teams through facilitation of cooperative or coordinated effort in organisations.

PSO7: habituate the acquisition of knowledge and skills through self-paced and self-directed learning aimed at perpetual personal development through the appropriate use of ICT enabled learning resources and infrastructure.

20UDC101 - PRINCIPLES OF MANAGEMENT
COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of management
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on principles and elements of management in business
- CO3: comprehend, analyze, and infer the various principles of structures and organising business activities
- CO4: formulate, judge and make decisions on the factual, conceptual or creative value of elements of management such as planning, organising, staffing, directing, and controlling in business situations, individually and in groups
- CO5: acquire and keep abreast of contemporary developments in management principles and practices through self-paced and self-directed learning

20UDC202 - BUSINESS ECONOMICS
COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of Business Economics
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on Business Economics in business situations
- CO3: comprehend, analyze, and infer the various principles of structures of Business Economics in business organisations
- CO4: formulate, judge and make decisions on the factual, conceptual or creative value of Business Economics in business situations, individually and in groups
- CO5: acquire and keep abreast of contemporary developments in Business Economics through self-paced and self-directed learning

20UDC203 - ENVIRONMENT OF BUSINESS
COURSE OUTCOMES

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

- CO1: recollect and understand the key environments that influence management of business activities
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences in the role of society, economic systems and government in business
- CO3: comprehend, analyze, and infer the various structures of environment in business organisations
- CO4: formulate, judge and make decisions on the factual, conceptual or creative value of environment in business situations, individually and in groups
- CO5: acquire and keep abreast of contemporary developments in business environment through self-paced and self-directed learning

20UDC304 - COST ACCOUNTING

COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of Cost Accounting
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on principles and elements of Costing in business situations
- CO3: comprehend, analyze, and infer the various principles of Costing in business organisations and work out Cost Statements
- CO4: formulate, judge and make decisions on the factual, conceptual or creative value of Cost elements in business situations, individually and in groups.
- CO5: acquire and keep abreast of contemporary developments in the field of Cost Accounting in management through self-paced and self-directed learning

20UDC305 - BUSINESS STATISTICS

COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles of data presentation and formulae in Statistics
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on the results of statistical analysis
- CO3: comprehend and analyze various implications Statistics in business situations
- CO4: formulate, judge and make decisions on the factual, conceptual or creative value of data and solve simple statistical problems in central tendencies, correlation, and regression in business situations, individually and in groups.
- CO5: acquire and keep abreast of contemporary developments in Statistics through self-paced and self-directed learning

20UDC306 - BUSINESS LAW

COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental legal terms in Contract, Agency, Partnership, Sale of Goods and Negotiable Instruments
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on the role of legal provisions in business
- CO3: comprehend, analyze, and infer the various laws governing business organisations
- CO4: formulate, judge and make decisions on the factual, conceptual or creative value of legal protection in business situations, individually and in groups.
- CO5: acquire and keep abreast of contemporary developments in the legal provisions in business situations through self-paced and self-directed learning

20UDC307 - ORGANISATIONAL BEHAVIOUR
COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and concepts of behavioural issues in an organisational context
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on key individual, group, and organisational processes and dynamics in business
- CO3: comprehend, analyze, and infer the various principles of leading and motivating individuals and groups in organisations
- CO4: formulate, judge and make decisions on the factual, conceptual or creative value of elements and functions of organizational behaviour in business situations, individually and in groups.
- CO5: acquire and keep abreast of contemporary developments in the field of organisational behaviour through self-paced and self-directed learning

20UDC408 - MANAGEMENT ACCOUNTING
COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of Marginal Costing, Standard Costing, Budgetary Control and Financial Statements
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on the above mentioned Management Accounting tools in business situations
- CO3: comprehend, analyze, and infer and work out problems in the above mentioned Management Accounting tools
- CO4: formulate, judge and make decisions on the factual, conceptual or creative value of Managerial Cost elements, individually and in groups.
- CO5: acquire and keep abreast of contemporary developments in the field of Management Accounting in business organisations through self-paced and self-directed learning

20UDC409 - MARKETING MANAGEMENT
COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of Marketing Management such as Product, Price, Place and Promotion
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on principles and elements of Product, Price, Place and Promotion in business
- CO3: comprehend, analyze, and infer the various principles of structures in Marketing systems
- CO4: formulate, judge and make decisions on the factual, conceptual or creative value of elements and functions of Marketing Management in business situations, individually and in groups.
- CO5: acquire and keep abreast of contemporary developments in the field of Marketing through self-paced and self-directed learning

20UDC410 - COMPANY AND INDUSTRIAL LAW

COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental legal terms in Companies Act, Factories Act, Workmen Compensation Act, Employee Gratuity and Provident Fund Act, Industrial Disputes Act, Employee State Insurance Act, and Trade Union Act
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on the role of legal provisions in Industrial context
- CO3: comprehend, analyze, and infer the various laws governing Industrial organisations
- CO4: formulate, judge and make decisions on the factual, conceptual or creative value of legal protection in Industrial situations, individually and in groups.
- CO5: acquire and keep abreast of contemporary developments in the legal provisions in Industrial situations through self-paced and self-directed learning

20UDO401 - RETAIL MANAGEMENT

COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of Retail Management
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on the principles, elements, and processes of Retail Management in business
- CO3: comprehend, analyze, and infer the various principles of Retailing in business
- CO4: formulate, judge and make decisions, based on the factual, conceptual or creative value of elements of Retail Management, individually and in groups in business situations
- CO5: acquire and keep abreast of the key issues of Retail Management through self-paced and self-directed learning

20UDC511 - MARKETING RESEARCH

COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of Marketing Research
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on Marketing Research processes and results in business
- CO3: comprehend, analyze, and infer the various principles of structures of Marketing Research in business organisations
- CO4: formulate, judge and make decisions on the factual, conceptual or creative value of elements and functions of Marketing Research in business situations, individually and in groups.
- CO5: acquire and keep abreast of contemporary developments in the field of Marketing Research through self-paced and self-directed learning

20UDC512 - FINANCIAL MANAGEMENT

COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of Financial Management, Capitalisation, Current Asset Management, and Investment Decisions
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on Financial Management tools in business situations
- CO3: comprehend, analyze, and infer and work out problems in the above mentioned Financial Management tools
- CO4: formulate, judge and make decisions on the factual, conceptual or creative value of Financial Management elements and functions in business situations, individually and in groups.
- CO5: acquire and keep abreast of contemporary developments in the field of Financial Management in business organisations through self-paced and self-directed learning

20UDC513 - HUMAN RESOURCE MANAGEMENT

COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of Human Resource Management
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on Human Resource Management elements and practices in business
- CO3: comprehend, analyze, and infer the various principles of structures of Human Resource Management in business organisations
- CO4: formulate, judge and make decisions on the factual, conceptual or creative value of elements and functions of Human Resource Management in business situations, individually and in groups.
- CO5: acquire and keep abreast of contemporary developments in the field of Human Resource Management through self-paced and self-directed learning

20UDC514 - OPERATIONS MANAGEMENT

COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of Operations Management
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on the principles and processes of Operations Management in business
- CO3: comprehend, analyze, and infer the various principles of structures of Operations Management in business organisations
- CO4: formulate, judge and make decisions on the factual, conceptual or creative value of elements and functions of Operations Management in business situations, individually and in groups.
- CO5: acquire and keep abreast of contemporary developments in the field of Operations Management through self-paced and self-directed learning

20UDC515 - COMPREHENSION AND *viva voce* - I

COURSE OUTCOMES

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

- CO1: recollect the fundamental terms, principles and elements of the various courses undergone in Semester V
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on the principles and processes in courses undergone in Semester V
- CO3: comprehend, analyze, and infer the various principles in business organisations related to the various courses undergone in Semester V
- CO4: formulate, judge and make decisions on the factual, conceptual or creative value of elements and functions of the various courses undergone in Semester V, individually and in groups.
- CO5: acquire and keep abreast of the contemporary developments in the various courses undergone in Semester V through self-paced and self-directed learning

20UDO502 - KNOWLEDGE MANAGEMENT

COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of Knowledge Management
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on the principles and elements of Knowledge Management in business
- CO3: comprehend, analyze, and infer the various principles of Knowledge Management in business
- CO4: formulate, judge and make decisions individually and in groups the factual, conceptual or creative value of elements and Knowledge Management in business situations
- CO5: acquire and keep abreast of the key issues of Knowledge Management through self-paced and self-directed learning

20UDC616- QUANTITATIVE TECHNIQUES

COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of Operations Research
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on the results of quantitative analysis in business situations
- CO3: comprehend, analyze, and infer the various implications of Operations Research in business organisations
- CO4: formulate, judge and make decisions on the factual, conceptual or creative value of elements and functions of Operations Research in business situations and work out simple problems in Linear Programming, Transportation Problem, Game Theory, Queuing Theory, and Network Analysis, individually and in groups.
- CO5: acquire and keep abreast of contemporary developments in the field of Operations Research through self-paced and self-directed learning

20UDC617 - DISASTER MANAGEMENT
COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of Disaster Management
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on the impact of disasters in business context
- CO3: comprehend, analyze, and infer the various principles of structures in managing disasters
- CO4: formulate, judge and make decisions on the factual, conceptual or creative value of elements and functions of Disaster Management in business and real life situations, individually and in groups.
- CO5: acquire and keep abreast of the contemporary developments in the field of Disaster Management through self-paced and self-directed learning

20UDC618 - TOTAL QUALITY MANAGEMENT
COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of Total Quality Management
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on Total Quality Management in business
- CO3: comprehend, analyze, and infer the various principles of Quality Deployment in business organisation
- CO4: formulate, judge and make decisions on the factual, conceptual or creative value of elements and functions of Total Quality Management in business situations, individually and in groups.
- CO5: acquire and keep abreast of the contemporary developments in the field of Total Quality Management through self-paced and self-directed learning

20UDC619 - INTERNSHIP
COURSE OUTCOMES

Upon completion of the Course, the students will be able to

- CO1: conceive and express the ideas about the business
- CO2: solve the problems of the business
- CO3: evaluate critically the policies, practices, and theories of business
- CO4: develop the leadership qualities through co-operation and team work
- CO5: work independently, identify the resources, acquire knowledge and skills of business by their own self directed methods of learning.

20UDC620 - COMPREHENSION AND *viva voce* - II
COURSE OUTCOMES

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

- CO1: recollect the fundamental terms, principles and elements of the various courses undergone in Semester VI
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on the principles and processes in courses undergone in Semester VI
- CO3: comprehend, analyze, and infer the various principles in business organisations related to the various courses undergone in Semester VI
- CO4: formulate, judge and make decisions on the factual, conceptual or creative value of elements and functions related to the various courses undergone in Semester VI, individually and in groups.
- CO5: acquire and keep abreast of the contemporary developments in the various courses undergone in Semester VI through self-paced and self-directed learning

20UDL601 - LOGISTICS MANAGEMENT
COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of Logistics Management
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on the principles and elements of Logistics Management in business
- CO3: comprehend, analyze, and infer the various principles of structures of Logistics in business organisations
- CO4: formulate, judge and make decisions individually and in groups the factual, conceptual or creative value of elements and functions of Logistics Management in business situations
- CO5: acquire and keep abreast of the key issues of Logistics Management through self-paced and self-directed learning

20UDL602 - PROJECT AND *viva voce*
COURSE OUTCOMES

On completion of the Project and *viva voce* course the students would be able to

- CO1: recollect and understand the fundamental terms, principles and elements of Project
- CO2: identify, apply, and communicate their ideas, impressions, and inferences on definitions of Problems, and designing a research in business situation
- CO3: comprehend, analyze, and infer the various principles of structures of carrying out a field survey project
- CO4: acquire and keep abreast of the key literature reviews through self-paced and self-directed learning
- CO5: formulate, judge and make decisions individually and in groups the factual, conceptual or creative value of information and prepare a report of the project work undertaken

20UDA101 / 20UDA303 - PRINCIPLES OF MANAGEMENT

COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of management
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on principles and elements of management in business
- CO3: comprehend, analyze, and infer the various principles of structures in business organisations
- CO4: formulate, judge and make decisions individually and in groups on the factual, conceptual or creative value of elements and functions of management in business situations
- CO5: acquire and keep abreast of the key elements of management through self-paced and self-directed learning

20UDA202 - OFFICE MANAGEMENT AND CORRESPONDENCE

COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of Office Management
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on principles and elements of Office Management in business
- CO3: comprehend, analyze, and infer the various principles of structures of Office in business organisations
- CO4: formulate, judge and make decisions individually and in groups the factual, conceptual or creative value of elements and functions of Office Management in business situations
- CO5: acquire and keep abreast of the key elements of Office Management through self-paced and self-directed learning

20UDA404 - HUMAN RESOURCE MANAGEMENT

COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of Human Resource Management
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on Human Resource Management elements and practices in business
- CO3: comprehend, analyze, and infer the various principles of structures of Human Resource Management in business organisations
- CO4: formulate, judge and make decisions on the factual, conceptual or creative value of elements and functions of Human Resource Management in business situations, individually and in groups.
- CO5: acquire and keep abreast of contemporary developments in the field of Human Resource Management through self-paced and self-directed learning

20UDA405 - PRINCIPLES OF MARKETING
COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of Marketing Management such as Product, Price, Place and Promotion
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on principles and elements of Product, Price, Place and Promotion in business
- CO3: comprehend, analyze, and infer the various principles of structures in Marketing systems
- CO4: formulate, judge and make decisions on the factual, conceptual or creative value of elements and functions of Marketing Management in business situations, individually and in groups.
- CO5: acquire and keep abreast of contemporary developments in the field of Marketing through self-paced and self-directed learning

20UDE401 - INFORMATION MANAGEMENT
COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of Information and Information Management
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on the principles and elements of Information Management in business
- CO3: comprehend, analyze, and infer the various principles of structures of Information Management in business organisations
- CO4: formulate, judge and make decisions individually and in groups the factual, conceptual or creative value of elements and functions of Information Management in business situations
- CO5: acquire and keep abreast of the key concepts of Information Management through self-paced and self-directed learning

20UDE502 - STRATEGIC MANAGEMENT
COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of Strategies and Strategic Management
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on the processes and implications of Strategic Management in business
- CO3: comprehend, analyze, and infer the various principles of structures of Strategic Management in business organisations
- CO4: formulate, judge and make decisions individually and in groups the factual, conceptual or creative value of elements and functions of Strategic Management in business situations
- CO5: acquire and keep abreast of the key concepts of Strategic Management through self-paced and self-directed learning

20UDE603 - MATERIALS MANAGEMENT
COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of Materials and Materials Management
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on principles and elements of Materials Management in business
- CO3: comprehend, analyze, and infer the various principles of structures of Materials Management in business organisations
- CO4: formulate, judge and make decisions individually and in groups on the factual, conceptual or creative value of elements and functions of Materials Management in business situations
- CO5: acquire and keep abreast of the key concepts of Materials Management through self-paced and self-directed learning

20UDN201 - ENTREPRENEURSHIP
COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, principles and elements of Entrepreneurship
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on the principles and procedures in Entrepreneurship
- CO3: comprehend, analyze, and infer the various principles of structures of Entrepreneurship
- CO4: formulate and make decisions, based on the factual, conceptual or creative value of elements and functions of Entrepreneurship, individually and in groups
- CO5: acquire and keep abreast of the key concepts of Entrepreneurship through self-paced and self-directed learning

20UDN202 - DISASTER MANAGEMENT
COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms, concepts and elements of Disaster and its Management
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on the process and implications of Disaster
- CO3: comprehend, analyze, and infer the various principles of structures of Disaster Management
- CO4: formulate, judge and make decisions, based on the factual, conceptual or creative value of elements and impact of Disaster Management, individually and in groups
- CO5: acquire and keep abreast of the key concepts of Disaster and its Management through self-paced and self-directed learning

20UDJ601 – ADVERTISING AGENCY

COURSE OUTCOMES

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

- CO1: recollect and understand the fundamental terms and elements of Advertising
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on the principles and forms of Advertising
- CO3: comprehend, analyze, and infer the various structures of Advertising
- CO4: formulate, judge and make decisions individually and in groups the factual, conceptual or creative value of elements and functions of Advertising in business situations and prepare advertisement copies for various media
- CO5: acquire and keep abreast of the key issues of Advertising through self-paced and self-directed learning.

20UDJ602 – BUSINESS PROCESS OUTSOURCING

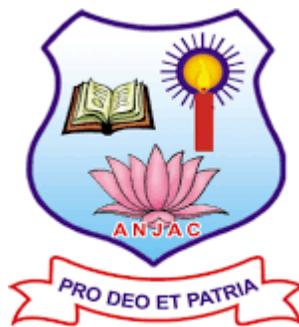
COURSE OUTCOMES

Upon completion of the course on Business Process Outsourcing the students will be able to

- CO1: recollect and understand the fundamental terms, principles and elements of Outsourcing in Business
- CO2: apply, summarize, and communicate their ideas, impressions, and inferences on the principles and forms of Outsourcing in business
- CO3: comprehend, analyze, and infer the various principles of structures of Outsourcing and prepare a project report for Business Process Outsourcing
- CO4: formulate, judge and make decisions individually and in groups the factual, conceptual or creative value of elements and functions of Outsourcing in business situations
- CO5: acquire and keep abreast of the key issues of Outsourcing through self-paced and self-directed learning

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



B.Com

PROGRAMME SPECIFIC OUTCOMES

AND

COURSE OUTCOMES

B.Com. DEGREE PROGRAMME

Programme Code : UGP014

PROGRAMME SPECIFIC OUTCOMES

On successful completion of B.Com. Programme, the students would have

- PSO1 :** demonstrated knowledge on accounting procedures, taxation issues and forms, legislations relating to business, banking services, auditing and assurance, entrepreneurship development, accounting automation and financial markets and services.
- PSO2 :** expressed effectively the ideas and thoughts through writing letters for business development, present their views effectively in appropriate forums and attend interviews confidently.
- PSO3 :** analysed the financial statements and find out necessary data for solving business problems and managerial decision making.
- PSO4 :** applied skills for developing a new innovative business plan through market survey and feasibility study, by way of collecting data, analyzing and interpreting them and offering suggestions for better business development.
- PSO5 :** developed a multicultural competence by imparting value in social life, gender equity and present an ethical behaviour by showing a fair and justified approach towards the protection of environment.
- PSO6 :** built a good inter-personal relationship while working with other firms and exhibit leadership qualities in their future endeavours.
- PSO7 :** made use of ICT in all aspects of business and daily life necessities and compute the tax liability and file the returns through electronic channel independently.

20UKC101 – FINANCIAL ACCOUNTING – I
COURSE OUTCOMES

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

- CO1: explain the concepts of financial accounting
- CO2: apply the accounting principles for preparing financial accounts
- CO3: classify various accounting statements to solve business problems
- CO4: compute the financial results of trading and non trading concerns
- CO5: construct the reports based on the accounting data.

20UKC202 – FINANCIAL ACCOUNTING – II
COURSE OUTCOMES

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

- CO1: explain the terms of financial accounting
- CO2: apply the accounting principles for preparing various accounts
- CO3: analyse the performance of business through accounting reports
- CO4: determine the trading results of business
- CO5: solve the business problems.

20UKC203 – MODERN MARKETING
COURSE OUTCOMES

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

- CO1: understand the various marketing and internet marketing terminologies.
- CO2: identify the stages of new product development process, factors influencing pricing decisions and distribution channel metrics.
- CO3: explore the process of product mix, promotional mix and E-Marketing
- CO4: explain the stages of product life cycle, pricing strategies, channels of distribution and promotional tools
- CO5: discuss the pros and cons of recent trends in marketing.

20UKC304 – COST ACCOUNTING
COURSE OUTCOMES

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

- CO1: explain the various concepts of cost accounting
- CO2: identify the methods of issue of materials, wages payment, allocation and absorption of overheads.
- CO3: analyse the various stock levels, labour, overheads, process, joint and contract costs
- CO4: assess the cost per unit, Economic Order Quantity, labour turnover, machine hour rate, and profit or loss on completed contracts.
- CO5: build the cost sheet with material, labour and overheads for a manufacturing concern

20UKC305 – BUSINESS LAW

COURSE OUTCOMES

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

- CO1: understand the formation of contract, performance of contract, bailment, pledge, indemnity, guarantee, contract of agency and arbitration.
- CO2: identify the elements of valid contract and modes of discharge of contract
- CO3: examine the importance of bailment and pledge, indemnity, guarantee, sale and agreement to sell.
- CO4: evaluate the elements of a valid contract.
- CO5: formulate the contract of agency, pledge, guarantee and arbitration and to avoid the cyber crimes.

20UKC306 – BANKING LAW AND PRACTICE

COURSE OUTCOMES

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

- CO1: understand various types of relationships between banker and customer and concepts of E-banking
- CO2: apply different types of crossings and endorsement for safer transactions
- CO3: analyse the principles of sound lending and factors contributing to NPAs.
- CO4: evaluate the circumstances for dishonor of cheques, models of E-Banking and modus operandi of Mobile banking
- CO5: construct the remedies for minimizing NPA's.

20UKC307 – ACCOUNTING AUTOMATION

COURSE OUTCOMES

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

- CO1: extend the knowledge on computerized accounting with Tally
- CO2: build the ledgers, groups, stock group, stock categories, stock items and order Processing in Tally
- CO3: analyse the usage of vouchers and bank reconciliation statement
- CO4: compute reorder level, interest and profit / loss of a business
- CO5: design the financial reports, quotations and orders

20UKC308 – CORE PRACTICAL – I (ACCOUNTING AUTOMATION - LAB)

COURSE OUTCOMES

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

- CO1: expand the practical accounting knowledge using Tally
- CO2: apply the practical knowledge in preparation of groups, ledgers, stock groups and stock items for business
- CO3: analyse the business transactions using Tally
- CO4: examine the stock categories of business
- CO5: prepare various reports and statements in Tally.

20UKC409 – MANAGEMENT ACCOUNTING

COURSE OUTCOMES

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

- CO1: explain the concepts of management accounting
- CO2: select the appropriate ratio, cash inflow and outflow, break even sales, budget and standard cost
- CO3: analyse the financial statement, cash flow statement, marginal, zero base budget and variance cost.
- CO4: estimate the liquidity ratios, cash flow from various activities, P/V ratio, cash budget and material and labour cost variances
- CO5: construct reports and budgets on the managerial efficiency of a company based on its financial and cash flow statements.

20UKC410 – COMPANY LAW

COURSE OUTCOMES

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

- CO1: explain the procedure for formation of companies, raising of capital, company management and winding up of companies.
- CO2: identify the contents of MoA, Articles of Association and petition
- CO3: analyse the role of NCLT and NCLAT
- CO4: evaluate various modes of winding up of a company and Composition of Key Managerial Personnel.
- CO5: summarise the methods of raising capital of a company and the consequences of winding up of a company.

20UKC411 – GOODS AND SERVICES TAX AND CUSTOMS DUTY

COURSE OUTCOMES

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

- CO1: explain the concepts of Goods and Services Tax and Customs Act.
- CO2: apply the procedures for registration of Goods and Services Tax.
- CO3: classify the transactions under Central Goods and Services Tax, State Goods and Services Tax, Integrated Goods and Services Tax and Union Territory Goods and Services Tax.
- CO4: analyse the procedures for filing of GST and availing input tax credit and the methods of valuation of customs.
- CO5: discuss the composition levy and time, place and value of supply under GST and the ways for duty drawback of customs.

20UKO401 – DERIVATIVES MANAGEMENT

COURSE OUTCOMES

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

- CO1: recall the basic ideas relating to derivative markets and instruments.
- CO2: demonstrate the difference between exchange- traded and over- the-counter derivatives, risk management and alternative investments
- CO3: analyse the benefits of forward contracts, futures contracts and options.
- CO4: evaluate the role of arbitrage in determining prices and promoting market efficiency.
- CO5: adapt the strategies regarding valuation and calculation returns on hedge funds, private equity, real estate, commodities, and infrastructure.

20UKC512 – CORPORATE ACCOUNTING - I

COURSE OUTCOMES

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

- CO1: explain the concepts of corporate accounting
- CO2: apply the accounting principles to record the transactions of corporate
- CO3: analyse operational performance of corporate by preparing reports
- CO4: interpret the results of a corporate
- CO5: create corporate statement to take decision making.

20UKC513 – INCOME TAX LAW AND PRACTICE – I

COURSE OUTCOMES

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

- CO1: recall the various elements of incomes.
- CO2: identify the exempted items in all heads of income
- CO3: analyse the residential status of various persons.
- CO4: evaluate the duties and powers of income tax authorities in computing incomes and advance payment of tax.
- CO5: construct a statement of income under various heads.

20UKC514 – AUDITING AND ASSURANCE

COURSE OUTCOMES

Upon completion of the Course, the students will able to

- CO1: understand the attributes of auditing and e-auditing.
- CO2: prepare audit notebook, audit programme and audit report
- CO3: plan the auditing methods, audit programme and audit note book.
- CO4: analyze the procedures for vouching the receipts and payments and for e-auditing.
- CO5: formulate policies for internal control, internal check and internal audit.

20UKC515 – BUSINESS STATISTICS

COURSE OUTCOMES

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

- CO1: recollect the statistical concepts like central tendency, dispersion, skewness, correlation, regression, index numbers and time series
- CO2: solve the problems on central tendency, dispersion, correlation, regression, time series and index numbers
- CO3: apply the basic statistical techniques in business
- CO4: assess the various methods of analysis of time series, correlation, regression and index numbers
- CO5: forecast the future trend of a business.

20UKC516 – CORE PRACTICAL – II

(COMMERCE PRACTICAL)

COURSE OUTCOMES

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

- CO1: understand the practical aspects of commerce
- CO2: make use of forms in Railways, Banks, Stock market, Postal services and Taxation.
- CO3: draft the notice, agenda and minutes for company meetings
- CO4: analyze the activities of the modern business concern
- CO5: plan the factory layout.

20UKC517 – COMPREHENSION AND *viva voce* - I

COURSE OUTCOMES

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

- CO1: recall the concepts and theories related to commerce
- CO2: communicate business ideas
- CO3: build the reasoning ability and reflective thinking towards the subject matter of commerce
- CO4: interact with interview panel respectfully and acquire the soft skills needed for the career development
- CO5: adapt the interview skills and keep ready for competitive examinations.

20UKO502 – TOURISM MARKETING

COURSE OUTCOMES

Upon completion of the course the students will be able to

- CO1: explain the concepts of tourism marketing
- CO2: identify the positive and negative aspects of tourism
- CO3: categorize the four A's of tourism marketing segmentation
- CO4: interpret the various dimensions of TQM in tourism
- CO5: discuss the four A's of tourism marketing.

20UKC618 – CORPORATE ACCOUNTING – II
COURSE OUTCOMES

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

- CO1: explain the terms of corporate accounting
- CO2: identify the accounting formats of corporate companies
- CO3: analyse the accounting information to take business decisions
- CO4: evaluate the corporate business performance by preparing various reports
- CO5: discuss the accounting principles for preparing company accounts.

20UKC619 – INCOME TAX LAW AND PRACTICE – II
COURSE OUTCOMES

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

- CO1: explain the procedures for clubbing of incomes, set-off losses, assessment of individuals, HUF, firm, AOP and companies, and filing of returns
- CO2: apply the concepts of TCS and TDS
- CO3: examine the procedure for assessment of tax.
- CO4: compute the tax liability of individuals, HUF, firm, AOP and companies
- CO5: adapt e-filing of tax returns of all assesses.

20UKC620 – BUSINESS COMMUNICATION AND OFFICE METHODS
COURSE OUTCOMES

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

- CO1: outline the general principles of business communication and office methods
- CO2: choose persuasive business terms for effective communication
- CO3: analyse the various types of conventional and digital communication
- CO4: evaluate the appropriate technology for office methods
- CO5: develop effective business correspondence, preparation of e- reports and designing office layout.

20UKC621 – INTERNSHIP
COURSE OUTCOMES

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

- CO1: conceive and express the ideas about the business
- CO2: solve the problems of the business
- CO3: evaluate critically the policies, practices, theories of business
- CO4: develop the leadership qualities through co-operation and team work
- CO5: identify the resources, acquire knowledge and skills of business by their own self directed methods of learning.

20UKC622 – COMPREHENSION AND *viva voce* - II

COURSE OUTCOMES

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

- CO1: recall the concepts and theories related to commerce
- CO2: communicate business ideas
- CO3: build the reasoning ability and reflective thinking towards the subject matter of commerce
- CO4: interact with interview panel respectfully and acquire the soft skills needed for the career development
- CO5: adapt the interview skills and keep ready for competitive examinations.

20UKL601 – ENTREPRENEURIAL DEVELOPMENT

COURSE OUTCOMES

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

- CO1: recall the concepts of entrepreneurship and its importance to Indian economy
- CO2: demonstrate the role of EDPs and MSMEs
- CO3: analyze the qualities to become an entrepreneur and device strategies to overcome the problems of women and rural entrepreneurs.
- CO4: appraise the assistance rendered by the various institutions to entrepreneurs
- CO5: formulate business ideas for DIC approval.

20UKL602 – PROJECT AND *viva voce*

COURSE OUTCOMES

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

- CO1: communicate the suggestions to solve the business problems
- CO2: apply the analytic thoughts to a body of knowledge
- CO3: acquire the research related skills and reflect their thinking
- CO4: evaluate an ethical awareness about the business
- CO5: facilitate co-operative efforts towards the objectives of the business.

20UKA101 – PRINCIPLES OF COMMERCE

COURSE OUTCOMES

Upon completion of the course, the students will be able to:

- CO1: explain the terminologies of commerce
- CO2: demonstrate the various concepts of banking and insurance
- CO3: analyse the various objectives, , characteristic, advantages and disadvantages of various business organizations
- CO4: evaluate the functions of banking sector and insurance sector
- CO5: formulate the policies and procedures regarding the usage of Mobile banking and E-banking.

20UKA202 – PRINCIPLES OF ACCOUNTING

COURSE OUTCOMES

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

- CO1: explain the fundamentals of financial accounting
- CO2: identify the assets & liabilities, cash book & pass book entries and errors
- CO3: classify the subsidiary books, methods of depreciation and insurance claims
- CO4: assess the financial position of the business firms
- CO5: solve problems on final accounts, bank reconciliation, depreciation account and insurance claim.

20UKA303 – PARTNERSHIP ACCOUNTS

COURSE OUTCOMES

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

- CO1: outline the concepts of partnership
- CO2: make use of the methods for the preparation of partnership accounts.
- CO3: examine the restructuring process of partnership firms
- CO4: determine the trading performance of partnership
- CO5: organise the accounting process for restituting the partnership firms.

20UKA404 – COMPANY ACCOUNTS

COURSE OUTCOMES

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

- CO1: recall and understand the concepts of company accounts
- CO2: apply the accounting principles to record and report the transactions of companies
- CO3: examine the process of valuation
- CO4: interpret the results of companies
- CO5: design the way of recording the transactions of companies.

20UKE401 – INDUSTRIAL LAW

COURSE OUTCOMES

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

- CO1: describe the various Acts related to the Industrial Law and IPR
- CO2: identify the applicability and implementation of the various Acts
- CO3: apply the provisions of the various Acts concerning the Industrial units
- CO4: evaluate the practical implications of the various Acts of Industrial units
- CO5: develop the industrial units using the various Acts.

20UKE502 – PRINCIPLES OF INSURANCE

COURSE OUTCOMES

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

- CO1: explain the concepts of insurance and its kinds
- CO2: classify life insurance and non-life insurance
- CO3: choose specific life and non-life insurance policy
- CO4: assess the value of claims under fire, marine and miscellaneous insurance
- CO5: elaborate the schemes of different insurances.

20UKE603 – FINANCIAL MARKETS AND SERVICES

COURSE OUTCOMES

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

- CO1: explain the concepts of financial system, capital market, SEBI and Venture capital
- CO2: choose securities in stock exchanges for buying and selling.
- CO3: evaluate the role of SEBI in capital markets.
- CO4: analyse the structure of Indian financial system services and venture capital
- CO5: elaborate the services of SEBI, mutual funds and depositories.

20UKN201 – CAPITAL MARKET

COURSE OUTCOMES

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

- CO1: explain the recent development in the Indian financial system
- CO2: identify the optimal choice of securities market for long term investment and short term investment
- CO3: categorise different financial assets and how to buy and sell these assets in financial markets.
- CO4: evaluate the methods of issuing shares and role of intermediaries in the primary market
- CO5: elaborate the structure of capital market in India

20UKJ601 – HOTEL MANAGEMENT

COURSE OUTCOMES

Upon completion of the course the students will be able to

- CO1: recall the concepts of hotel and hospitality industry
- CO2: choose best eco friendly practices followed by hospitality industry
- CO3: classify the types of hotels and types of rooms.
- CO4: appraise the functions of different departments in hotel.
- CO5: design strategies for hospitality industry to improve tourism

20UKJ602 – SHORTHAND
COURSE OUTCOMES

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

- CO1: explain the short-hand symbols
- CO2: make use of the principles of short-hand writing
- CO3: practice the exercises
- CO4: take notes in short-hand and transcribe into longhand.
- CO5: communicate information through short-hand.

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



B.Com (Computer Applications)

PROGRAMME SPECIFIC OUTCOMES

AND

COURSE OUTCOMES

B.Com. (COMPUTER APPLICATIONS) DEGREE PROGRAMME

Programme Code : UGP015

PROGRAMME SPECIFIC OUTCOMES

On successful completion of B.Com (Computer Applications) Programme, the students would have

PSO1: gained knowledge on preparing the accounts for business concerns and extend IT skills

PSO2: applied the business skills and programming knowledge for computing practices

PSO3: integrated commerce and computer with the relevant applied aspects suited to real-life issues at different levels

PSO4: analyzed and solve various business problems

PSO5: formulated the professional and cyber ethics for working in modern business environment

PSO6: led a team through the experience gained from the activities like seminars, industrial visit, and association activities and so on for achieving common goal

PSO7: adapted ICT knowledge and skills to appear for various competitive examinations.

20UUC101 - FINANCIAL ACCOUNTING – I

COURSE OUTCOMES

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

- CO1: explain the concepts of financial accounting
- CO2: apply the accounting principles for preparing financial accounts
- CO3: classify various accounting statements to solve business problems
- CO4: compute the financial results of trading and non trading concerns
- CO5: construct the reports based on the accounting data

20UUC102 - COMPUTER APPLICATIONS IN BUSINESS

COURSE OUTCOMES

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

- CO1: explain the components of computer and scripting languages
- CO2: identify the role of information technology in business
- CO3: analyse the various applications of computers in business
- CO4: evaluate the efficiency of HTML, CSS and Javascript
- CO5: build commercial websites using scripting languages

20UUC103 - CORE PRACTICAL – I (Computer Applications in Business - Lab)

COURSE OUTCOMES

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

- CO1: demonstrate the various commercial webpages
- CO2: apply HTML, CSS and Javascript tags to build business webpages
- CO3: analyse the applications of scripting languages
- CO4: evaluate the various elements of scripting languages
- CO5: design innovative webpages using scripting languages.

20UUC204 - FINANCIAL ACCOUNTING – II

COURSE OUTCOMES

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

- CO1: explain the terms of financial accounting
- CO2: apply the accounting principles for preparing various accounts
- CO3: analyse the performance of business through accounting reports
- CO4: determine the trading results of business
- CO5: solve the business problems.

20UUC205 - C PROGRAMMING

COURSE OUTCOMES

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

- CO1: explain the concepts of C programming
- CO2: identify the various statements of C programming
- CO3: examine the role of procedure oriented programming
- CO4: evaluate the functions of structure oriented programming
- CO5: develop the logical ability to solve the commercial problems.

20UUC206 - CORE PRACTICAL – II (C Programming)

COURSE OUTCOMES

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

- CO1: demonstrate the structure of C programs
- CO2: make use of functions to solve arithmetic problems
- CO3: examine the applications of procedure oriented programming
- CO4: evaluate the various statements in C programming
- CO5: develop programs to solve the commercial problems.

20UUC307 - COST ACCOUNTING

COURSE OUTCOMES

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

- CO1: explain the various concepts of cost accounting
- CO2: identify the methods of issue of materials, wages payment, allocation and absorption of overheads.
- CO3: analyse the various stock levels, labour, overheads, process, joint and contract costs
- CO4: assess the cost per unit, Economic Order Quantity, labour turnover, machine hour rate, and profit or loss on completed contracts.
- CO5: build the cost sheet with material, labour and overheads for a manufacturing concern.

20UUC308 - BUSINESS CORRESPONDENCE

COURSE OUTCOMES

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

- CO1: explain the importance of business correspondence
- CO2: make use of business documents to maintain better relationship in business
- CO3: compare the traditional with modern communication methods
- CO4: evaluate the functions of various business letters
- CO5: adapt the ethical communication practices in business

20UUC309 - WEB PROGRAMMING

COURSE OUTCOMES

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

- CO1: explain the web programming concepts of PHP and MySQL
- CO2: experiment with web programming to develop business applications
- CO3: analyse the efficiency of various commands in PHP and MySQL
- CO4: evaluate the various functions of web programming
- CO5: design commercial websites using PHP and MySQL

20UUC310 - CORE PRACTICAL – III (Web Programming - Lab)

COURSE OUTCOMES

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

- CO1: demonstrate business applications using PHP and MySQL
- CO2: experiment with web forms to develop business applications
- CO3: analyse the various commands in PHP and MySQL
- CO4: evaluate the various functions of web programming
- CO5: develop commercial websites.

20UUC411 - MANAGEMENT ACCOUNTING

COURSE OUTCOMES

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

- CO1: explain the concepts of management accounting
- CO2: select the appropriate ratio, cash inflow and outflow, break even sales, budget and standard cost
- CO3: analyse the financial statement, cash flow statement, marginal, zero base budget and variance cost.
- CO4: estimate the liquidity ratios, cash flow from various activities, P/V ratio, cash budget and material and labour cost variances
- CO5: construct reports and budgets on the managerial efficiency of a company based on its financial and cash flow statements.

20UUC412 - .NET

COURSE OUTCOMES

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

- CO1: explain the concepts of ASP.NET programming
- CO2: identify the role of ASP.Net in commercial applications
- CO3: analyse the functions of various controls in ASP.NET
- CO4: evaluate standard, navigation, validation and web controls
- CO5: develop web based applications using ASP.Net

20UUC413 - CORE PRACTICAL – IV (.NET - Lab)

COURSE OUTCOMES

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

- CO1: demonstrate the applications of ASP.NET programming
- CO2: apply ASP.Net controls to build business applications
- CO3: examine database operations for windows form and web application
- CO4: evaluate the various functions of ASP.NET
- CO5: develop ASP.NET applications for business enterprise.

20UUC401 – RETAIL MARKETING

COURSE OUTCOMES

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

- CO1: explain the concepts of retail marketing
- CO2: identify the factors influencing the growth of retail marketing
- CO3: analyse the strategies adopted to implement the retail marketing
- CO4: evaluate the performance of traditional and e-retailing
- CO5: predict the opportunities and challenges of retail marketing.

20UUC514 - CORPORATE ACCOUNTING - I

COURSE OUTCOMES

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

- CO1: explain the concepts of corporate accounting
- CO2: apply the accounting principles to record the transactions of corporate
- CO3: analyse operational performance of corporate by preparing reports
- CO4: interpret the results of a corporate
- CO5: create corporate statement to take decision making

20UUC515 - DIRECT TAXES

COURSE OUTCOMES

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

- CO1: explain the concepts of taxation
- CO2: identify the various basis of charging income tax and deductions
- CO3: analyse the taxable and exempted income from income tax
- CO4: determine the different heads of income and set off carry forward of losses
- CO5: prepare offline and online income tax returns for individuals and businessmen

20UUC516 - BUSINESS STATISTICS

COURSE OUTCOMES

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

- CO1: explain the key concepts, tools and techniques in statistical analysis
- CO2: experiment with and solve practical problems using statistical tools
- CO3: analyse and examine the assumptions underlying behind application of statistical tools
- CO4: evaluate the importance and uses of statistical techniques
- CO5: adapt the statistical tools and techniques for forecasting and estimating business trends.

20UUC517 - ACCOUNTING AUTOMATION

COURSE OUTCOMES

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

- CO1: explain the concepts of tally package
- CO2: identify the significance of accounting automation
- CO3: analyse the various menus in accounting package
- CO4: determine various types of invoices and vouchers
- CO5: create financial statements in business concern

20UUC518 - CORE PRACTICAL – V (Accounting Automation - Lab)

COURSE OUTCOMES

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

- CO1: demonstrate the various applications of accounting package
- CO2: select the appropriate vouchers for business transactions
- CO3: categorize the screen components of Tally
- CO4: evaluate the various financial accounting statements in Tally
- CO5: design the financial reports in Tally.

20UUC519 - COMPREHENSION AND *viva voce* - I

COURSE OUTCOMES

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

- CO1: demonstrate a literal comprehension of reading
- CO2: identify main idea in reading materials, books and other sources
- CO3: analyse the comprehensive knowledge in subjects
- CO4: evaluate the level of understanding in the subject matter
- CO5: develop skills in succeeding in the interviews

20UOU502 - INTERNET APPLICATIONS

COURSE OUTCOMES

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

- CO1: explain the concepts of Ajax, Bootstrap and jQuery
- CO2: identify the various applications of Internet
- CO3: examine the working mechanism of internet application languages
- CO4: evaluate the functions of internet application languages
- CO5: develop business websites using Ajax, Bootstrap and jQuery

20UUC620 - CORPORATE ACCOUNTING – II

COURSE OUTCOMES

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

- CO1: explain the terms of corporate accounting
- CO2: identify the accounting formats of corporate companies
- CO3: analyse the accounting information to take business decisions
- CO4: evaluate the corporate business performance by preparing various reports
- CO5: discuss the accounting principles for preparing company accounts

20UUC621 - INDIRECT TAXES

COURSE OUTCOMES

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

- CO1: explain the concepts of indirect taxes
- CO2: make use of the modern tax procedures and reports in business organisation
- CO3: analyse the procedures for preparing indirect tax
- CO4: evaluate the GST types and reports
- CO5: adapt various forms of filing returns and GST payments

20UUC622 - BUSINESS LAW AND COMPANY LAW

COURSE OUTCOMES

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

- CO1: explain the various concepts of business law and company law
- CO2: identify legal formats used in business
- CO3: analyse the set of laws relating to business and company
- CO4: elucidate the legal rules for discharging the contract
- CO5: adapt business law and company law in business.

20UUC623 - INTERNSHIP
COURSE OUTCOMES

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

- CO1: conceive and express the ideas about the business
- CO2: solve the problems of the business
- CO3: analyse critically the policies, practices, theories of business
- CO4: determine the leadership qualities through co-operation and team work
- CO5: promote to work independently, identify the resources, acquire knowledge and skills of business by their own self directed methods of learning.

20UUC624 - COMPREHENSION AND *viva voce* - II
COURSE OUTCOMES

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

- CO1: demonstrate a literal comprehension of reading
- CO2: identify main idea in reading materials, books and other sources
- CO3: analyse the comprehensive knowledge in subjects
- CO4: evaluate the level of understanding in the subject matter
- CO5: develop skills in succeeding in the interviews

20UUL601 - DIGITAL MARKETING
COURSE OUTCOMES

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

- CO1: explain the concepts of digital marketing
- CO2: identify the different areas in web marketing
- CO3: examine the functions of internet marketing
- CO4: evaluate the various techniques applied for cyber marketing
- CO5: discuss the strategies of web marketing.

20UUL602 - PROJECT AND *viva voce*
COURSE OUTCOMES

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

- CO1: demonstrate the various models of software projects
- CO2: identify the phases of software project development
- CO3: acquire the project related skills and reflect their thinking
- CO4: evaluate the modules in software projects
- CO5: improvise efforts towards the objectives of the business

20UUA101 - PRINCIPLES OF ACCOUNTING

COURSE OUTCOMES

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

- CO1: explain concepts of accounting
- CO2: apply the accounting principles to solve business problems
- CO3: analyse the accounting information to support business process and practices
- CO4: assess the financial position of trading and non-trading organisation
- CO5: construct accounting statements of an organization.

20UUA202 - PRINCIPLES OF BANKING

COURSE OUTCOMES

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

- CO1: outline the concepts and principles of banking
- CO2: apply the various techniques adapted in banking operations
- CO3: analyse the functions of banking
- CO4: evaluate the types of bank deposits and forms
- CO5: adapt various methods used in offline and online banking.

20UUA303 - FINANCIAL ACCOUNTING

COURSE OUTCOMES

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

- CO1: explain the terminologies in accounting
- CO2: apply accounting principles to prepare financial statements
- CO3: classify accounting information to take business decisions
- CO4: determine the financial position of an organisation
- CO5: adapt manual methods and accounting package to solve accounting problems.

20UUA404 - COST ACCOUNTING

COURSE OUTCOMES

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

- CO1: explain the concepts of cost accounting
- CO2: apply the techniques of costing in management operations
- CO3: divide the cost for preparing cost of production of various operations
- CO4: evaluate the various elements of cost and applicability of costing methods
- CO5: construct statements to ascertain production cost for manufacturing concerns.

20UUA405 - ALLIED COMMERCE (CA) PRACTICAL
COURSE OUTCOMES

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

- CO1: demonstrate the screen components of accounting package
- CO2: apply the accounting package for preparing vouchers, cost sheet, payroll and budget
- CO3: analyse the various principles adopted to solve accounting problems using tally
- CO4: evaluate the accounting and financial statements using accounting package
- CO5: create financial and cost accounting reports using tally

20UUE401 - LOGISTICS MANAGEMENT
COURSE OUTCOMES

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

- CO1: explain the basic and modern concepts of logistic management
- CO2: identify the role of logistics management in domestic and global logistics
- CO3: analyse the methods of calculating logistics costs
- CO4: evaluate the techniques used to reduce the logistics costs
- CO5: discuss various principles adapted in logistic management.

20UUE502 - COMPUTER NETWORKS
COURSE OUTCOMES

Upon Completion of the course, the students will be able to

- CO1:** explain the concepts of computer networks
- CO2:** identify the various network components
- CO3:** analyze the architecture of computer networks
- CO4:** evaluate the functions of computer networks
- CO5:** discuss the applications of computer networks

20UUE603 - SERVICES MARKETING
COURSE OUTCOMES

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

- CO1: explain the concepts of services marketing
- CO2: identify the practices and challenges in services marketing
- CO3: analyse the applicability of service quality in service sectors
- CO4: evaluate the performance of service sectors in India
- CO5: adapt the strategies followed in services marketing.

20UUN201 - MODERN BANKING

COURSE OUTCOMES

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

- CO1: explain the terminologies of banking
- CO2: identify the special features of banking in recent era
- CO3: analyse the operating procedures adopted in banking sector
- CO4: evaluate the role of banker
- CO5: elaborate the techniques involved in banking.

20UUN201 - MODERN BANKING

COURSE OUTCOMES

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

- CO1: explain the concepts of dreamweaver
- CO2: identify the various tags in dreamweaver
- CO3: examine the attributes in paired tags
- CO4: evaluate the working of tags
- CO5: design static web pages

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



B.Com (E-Commerce)

**PROGRAMME SPECIFIC OUTCOMES
AND
COURSE OUTCOMES**

B.Com. (E-COMMERCE) DEGREE PROGRAMME

Programme Code : UGP016

PROGRAMME SPECIFIC OUTCOMES

On successful completion of completion of B.Com (E-Commerce) Programme, the students would have

PSO1: related the knowledge on technological and legal business environment associated with E-commerce sectors

PSO2: applied necessary skills for analyzing financial statements

PSO3: designed and implemented business projects

PSO4: analyzed business data by using computer software

PSO5: developed entrepreneurial skills by developing e-commerce websites

PSO6: led a team through the experience gained from different associations, seminars and industrial visits for achieving common goals

PSO7: adapted commercial and technological skills to perform well in various competitive examinations.

20URC101 - FINANCIAL ACCOUNTING – I

COURSE OUTCOMES

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

CO1: explain the concepts of financial accounting

CO2: apply the accounting principles for preparing financial accounts

CO3: classify various accounting statements to solve business problems

CO4: compute the financial results of trading and non trading concerns

CO5: construct the reports based on the accounting data

20URC102 - E-COMMERCE

COURSE OUTCOMES

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

CO1: explain the concepts of e-commerce

CO2: identify the applications of digital commerce

CO3: analyse the role of e-commerce

CO4: evaluate the technologies in e-commerce

CO5: discuss the strategies and functions of digital commerce

20URC203 - FINANCIAL ACCOUNTING – II

COURSE OUTCOMES

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

- CO1: explain the terms of financial accounting
- CO2: apply the accounting principles for preparing various accounts
- CO3: analyse the performance of business through accounting reports
- CO4: determine the trading results of business
- CO5: solve the business problems.

20URC204 - C PROGRAMMING

COURSE OUTCOMES

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

- CO1: explain the concepts of C programming
- CO2: identify the various statements of C Programming
- CO3: examine the role of procedure oriented programming
- CO4: evaluate the functions of structure oriented programming
- CO5: develop the logical ability to solve the commercial problems.

20URC205-CORE PRACTICAL – I (C Programming - Lab)

COURSE OUTCOMES

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

- CO1: demonstrate the structure of C programs
- CO2: make use of functions to solve arithmetic problems
- CO3: examine the applications of procedure oriented programming
- CO4: evaluate the various statements in C programming
- CO5: develop programs to solve the commercial problems.

20URC306 - COST ACCOUNTING

COURSE OUTCOMES

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

- CO1: explain the various concepts of cost accounting
- CO2: identify the methods of issue of materials, wages payment, allocation and absorption of overheads.
- CO3: analyse the various stock levels, labour, overheads, process, joint and contract costs
- CO4: assess the cost per unit, Economic Order Quantity, labour turnover, machine hour rate, and profit or loss on completed contracts.
- CO5: build the cost sheet with material, labour and overheads for a manufacturing concern.

20URC307 - SOFTWARE ENGINEERING

COURSE OUTCOMES

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

- CO1: explain the concepts of software engineering
- CO2: identify the stages of software engineering projects
- CO3: analyse the role of software project management
- CO4: evaluate the various models and testing used in software projects
- CO5: discuss the principles and applications of software engineering

20URC308 - WEB PROGRAMMING

COURSE OUTCOMES

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

- CO1: explain the concepts of web programming
- CO2: identify the various tags in web programming languages
- CO3: classify the features of web programming languages
- CO4: evaluate the concepts of static and dynamic websites development
- CO5: design websites for a business using web programming.

20URC309 - CORE PRACTICAL – II (Web Programming - Lab)

COURSE OUTCOMES

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

- CO1: demonstrate the various commercial web pages
- CO2: apply singular and paired tags to build business websites
- CO3: analyse the concept of static and dynamic websites
- CO4: evaluate the various elements of web programming
- CO5: design professional web pages for an organisation

20URC410 - MANAGEMENT ACCOUNTING

COURSE OUTCOMES

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

- CO1: explain the concepts of management accounting
- CO2: select the appropriate ratio, cash inflow and outflow, break even sales, budget and standard cost
- CO3: analyse the financial statement, cash flow statement, marginal, zero base budget and variance cost.
- CO4: estimate the liquidity ratios, cash flow from various activities, P/V ratio, cash budget and material and labour cost variances
- CO5: construct reports and budgets on the managerial efficiency of a company based on its financial and cash flow statements.

20URC411 - .NET
COURSE OUTCOMES

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

- CO1: explain the basics concepts and features of .net framework and C# language
- CO2: identify the role of namespaces, objects and procedure in .net
- CO3: analyse the functions of various .net controls
- CO4: evaluate the event driven and object oriented programming
- CO5: develop console, windows and web applications based on user requirements

20URC412 - CORE PRACTICAL – III (.NET - Lab)
COURSE OUTCOMES

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

- CO1: demonstrate the applications of console and event driven programming
- CO2: apply C# and ASP.NET controls to build business applications
- CO3: analyze the various form controls, ADO.NET objects for developing .Net applications
- CO4: assess the various functions of C# and ASP.Net
- CO5: develop ASP.Net applications for business enterprise.

20URO401 - BUSINESS PROCESS OUTSOURCING
COURSE OUTCOMES

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

- CO1: explain the concepts of business process outsourcing
- CO2: identify the strategies followed in BPO
- CO3: examine the technologies adapted in business process outsourcing
- CO4: evaluate the functions of business and knowledge process outsourcing
- CO5: discuss the role of information technology in BPO

20URC513 - CORPORATE ACCOUNTING - I
COURSE OUTCOMES

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

- CO1: explain the concepts of corporate accounting
- CO2: apply the accounting principles to record the transactions of corporate
- CO3: analyse operational performance of corporate by preparing reports
- CO4: interpret the results of a corporate
- CO5: create corporate statement to take decision making

20URC514 - DIRECT TAXES

COURSE OUTCOMES

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

- CO1: explain the concepts of taxation
- CO2: identify the various basis of charge of income tax and deductions
- CO3: analyse the taxable and exempted income from income tax.
- CO4: determine the different heads of income and set off carry forward of losses
- CO5: prepare offline and online income tax returns for individuals and businessmen

20URC515 - BUSINESS LAW AND COMPANY LAW

COURSE OUTCOMES

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

- CO1: explain the various concepts of business law and company law
- CO2: identify legal formats used in business
- CO3: analyse the set of laws relating to business and company
- CO4: elucidate the legal rules for discharging the contract
- CO5: adapt business law and company law in business.

20URC516 - ACCOUNTING AUTOMATION

COURSE OUTCOMES

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

- CO1: explain the concepts of tally package
- CO2: identify the significance of accounting automation
- CO3: analyse the various menus in accounting package
- CO4: determine various types of invoices and vouchers
- CO5: create financial statements in business concern

20URC517 - CORE PRACTICAL – IV (Accounting Automation - Lab)

COURSE OUTCOMES

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

- CO1: demonstrate the various applications of accounting package
- CO2: select the appropriate vouchers for business transactions
- CO3: categorize the screen components of Tally
- CO4: evaluate the various financial accounting statements in Tally
- CO5: design the financial reports in Tally.

20URC518 - COMPREHENSION AND *viva voce* - I
COURSE OUTCOMES

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

- CO1: demonstrate a literal comprehension of reading
- CO2: identify main idea in reading materials, books and other sources
- CO3: analyse the comprehensive knowledge in subjects
- CO4: evaluate the level of understanding in the subject matter
- CO5: develop skills in succeeding in the interviews

20URO502 - MULTIMEDIA
COURSE OUTCOMES

Upon Completion of the course the students will be able to

- CO1:** explain the basic concept of text, images, graphics and animation
- CO2:** identify the components of Adobe Flash and After Effects
- CO3:** examine the advanced concepts used for editing the interactive styles
- CO4:** evaluate the various resources available in Adobe Flash and After Effects
- CO5:** develop multimedia contents based on recent trends

20URC619 - CORPORATE ACCOUNTING – II
COURSE OUTCOMES

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

- CO1: explain the terms of corporate accounting
- CO2: identify the accounting formats of corporate companies
- CO3: analyse the accounting information to take business decisions
- CO4: evaluate the corporate business performance by preparing various reports
- CO5: discuss the accounting principles for preparing company accounts

20URC620 - INDIRECT TAXES
COURSE OUTCOMES

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

- CO1: explain the concepts of indirect taxes
- CO2: make use of the modern tax procedures and reports in business organisation
- CO3: analyse the procedures for preparing indirect tax
- CO4: evaluate the GST types and reports
- CO5: adapt various forms of filing returns and GST payments

20URC621 - BUSINESS STATISTICS

COURSE OUTCOMES

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

- CO1: explain the key concepts, tools and techniques in statistical analysis
- CO2: experiment with and solve practical problems using statistical tools
- CO3: analyse and examine the assumptions underlying behind application of statistical tools
- CO4: evaluate the importance and uses of statistical techniques
- CO5: adapt the statistical tools and techniques for forecasting and estimating business trends.

20URC622 - INTERNSHIP

COURSE OUTCOMES

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

- CO1: conceive and express the ideas about the business
- CO2: solve the problems of the business
- CO3: analyse critically the policies, practices, theories of business
- CO4: determine leadership qualities through co-operation and team work
- CO5: promote to work independently, identify the resources, acquire knowledge and skills of business by their own self directed methods of learning.

20URC623 - COMPREHENSION AND *viva voce* - II

COURSE OUTCOMES

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

- CO1: demonstrate a literal comprehension of reading
- CO2: identify main idea in reading materials, books and other sources
- CO3: analyse the comprehensive knowledge in subjects
- CO4: evaluate the level of understanding in the subject matter
- CO5: develop skills in succeeding in the interviews

20URL601 - CYBER SECURITY

COURSE OUTCOMES

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

- CO1: explain the concepts of cyber security
- CO2: identify the significance of cyber security
- CO3: analyse the various tools and techniques used in cyber security
- CO4: evaluate the recent practices followed in online security
- CO5: discuss the security measures taken in online transactions

20URL602 - PROJECT AND *viva voce*

COURSE OUTCOMES

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

- CO1: demonstrate the various models of software projects
- CO2: identify the phases of software project development
- CO3: acquire the project related skills and reflect their thinking
- CO4: evaluate the modules in software projects
- CO5: improvise efforts towards the objectives of the business

20URA101 - ADVERTISING

COURSE OUTCOMES

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

- CO1: explain the concepts of advertising
- CO2: identify various strategies followed in advertising campaigns
- CO3: analyse the forms and techniques used in advertising
- CO4: evaluate the societal impact of advertising on business
- CO5: create an advertising campaign for a product.

20URA202 - PUBLIC RELATIONS

COURSE OUTCOMES

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

- CO1: explain the concepts of public relations
- CO2: identify the role of public corporate relations
- CO3: analyze the principles of public relations
- CO4: evaluate the media, elements and functions of public relations
- CO5: discuss the practices of public relations followed in Indian institutions.

20URE401 - ENTERPRISE RESOURCE PLANNING

COURSE OUTCOMES

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

- CO1: explain the concepts of enterprise resource planning
- CO2: identify the various functions of ERP modules and salesforce
- CO3: analyse the features of ERP and salesforce
- CO4: evaluate the components of ERP modules and salesforce
- CO5: adapt the business reports using salesforce

20URE502 - BUSINESS CORRESPONDENCE AND OFFICE METHODS

COURSE OUTCOMES

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

- CO1: explain the concepts of business correspondence and office methods
- CO2: select appropriate type of letters for different business situations
- CO3: analyse the nature and importance of different business letters and modern communication devices used in office
- CO4: evaluate the various types of business letters and office layout
- CO5: improvise different business letters for an effective communication and design a suitable office layout.

20URE603 - E-AUDITING

COURSE OUTCOMES

Upon completion of the course the students will be able to

- CO1: explain the concepts of auditing and e-auditing
- CO2: identify the various techniques adopted in e-auditing
- CO3: examine the functions of e-auditing
- CO4: determine the e-auditing procedure adopted by an enterprise
- CO5: develop the modus operandi of e-auditing

20URN201 - E-LEARNING

COURSE OUTCOMES

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

- CO1: explain the key concepts of online learning
- CO2: identify the various communications in e-learning
- CO3: analyse the structure of e-content
- CO4: evaluate the types of e-learning softwares
- CO5: develop the multimedia content for e-learning

20URJ601 - EVENT MARKETING

COURSE OUTCOMES

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

- CO1: explain the concepts of event marketing
- CO2: identify the types of event marketing
- CO3: analyse the requirements for an event proposal
- CO4: evaluate the event marketing operations
- CO5: design different techniques adopted in conducting an event

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



B.Com (Corporate Secretaryship)

PROGRAMME SPECIFIC OUTCOMES

AND

COURSE OUTCOMES

B.Com. (CORPORATE SECRETARYSHIP) DEGREE PROGRAMME

Programme Code : UGP017

PROGRAMME SPECIFIC OUTCOMES

On successful completion of B.Com. (Corporate Secretaryship) Programme, the students would have

PSO1: gained the knowledge in various areas of Corporate Sectors and laws related to companies.

PSO2: acquired competence in Communication skills especially related to business transactions.

PSO3: mastered decision making skills to cope up with the dynamic changes that happen in industries from time to time

PSO4: formulated strategies to address the complex situations of corporate sector.

PSO5: developed entrepreneurial, managerial and consultancy skills in an ethical way and react suitably when confronted with critical situations.

PSO6: gained adequate legal knowledge and skills to function efficiently in a team.

PSO7: acquired proficiency and confidence to appear for various competitive examinations and pursue courses CS, CA and CMA to serve the society.

20UWC101 – FINANCIAL ACCOUNTING – I

COURSE OUTCOMES

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

- CO1: explain the concepts of financial accounting
- CO2: apply the accounting principles for preparing financial accounts
- CO3: classify various accounting statements to solve business problems
- CO4: compute the financial results of trading and non trading concerns
- CO5: construct the reports based on the accounting data

20UWC202 – FINANCIAL ACCOUNTING – II

COURSE OUTCOMES

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

- CO1: explain the terms of financial accounting
- CO2: apply the accounting principles for preparing various accounts
- CO3: analyse the performance of business through accounting reports
- CO4: determine the trading results of business
- CO5: solve the business problems.

20UWC203 - BUSINESS ENTITIES
COURSE OUTCOMES

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

- CO 1: explain the concepts of business
- CO 2: apply the legal procedure to form a new business
- CO 3: analyse the legal formalities for registration of firms
- CO 4: appraise the performance of public and private entities
- CO 5: adapt the procedure for formation of organization

20UWC304 – COST ACCOUNTING
COURSE OUTCOMES

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

- CO1: explain the various concepts of cost accounting
- CO2: identify the methods of issue of materials, wages payment, allocation and absorption of overheads.
- CO3: analyse the various stock levels, labour, overheads, process, joint and contract costs
- CO4: assess the cost per unit, Economic Order Quantity, labour turnover, machine hour rate, and profit or loss on completed contracts.
- CO5: build the cost sheet with material, labour and overheads for a manufacturing concern.

20UWC305 – BUSINESS STATISTICS
COURSE OUTCOMES

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

- CO1: recollect the statistical concepts like central tendency, dispersion, skewness, correlation, regression, index numbers and time series
- CO2: solve the problems on central tendency, dispersion, correlation, regression, time series and index numbers
- CO3: analyse the business problems with statistical techniques
- CO4: assess the various methods of analysis of time series, correlation, regression and index numbers
- CO5: forecast the future trend of a business.

20UWC306 – BUSINESS AND ALLIED LAWS
COURSE OUTCOMES

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

- CO1: explain the contract, bailment, pledge, indemnity, guarantee, contract of agency and arbitration
- CO2: identify the elements of valid contract, modes of discharge of contract and types of cybercrimes
- CO3: distinguish bailment and pledge, indemnity and guarantee, sale and agreement to sell
- CO4: assess the functioning of Insolvency and Bankruptcy Board of India (IBBI)
- CO5: develop a valid business contract

20UWC307 – ACCOUNTING AUTOMATION

COURSE OUTCOMES

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

- CO1: extend the knowledge on computerized accounting with Tally
- CO2: build the ledgers, groups, stock group, stock categories, stock items and order Processing in Tally
- CO3: analyse the usage of vouchers and bank reconciliation statement
- CO4: compute reorder level, interest and profit / loss of a business
- CO5: design the financial reports, quotations and orders.

20UWC308 – CORE PRACTICAL – I (ACCOUNTING AUTOMATION - LAB)

COURSE OUTCOMES

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

- CO1: expand the practical accounting knowledge using Tally
- CO2: apply the practical knowledge in preparation of groups, ledgers, stock groups and stock items for business
- CO3: analyse the business transactions using Tally
- CO4: examine the stock categories of business
- CO5: prepare various reports and statements in Tally.

20UWC409 – MANAGEMENT ACCOUNTING

COURSE OUTCOMES

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

- CO1: explain the concepts of management accounting
- CO2: select the appropriate ratio, cash inflow and outflow, break even sales, budget and standard cost
- CO3: analyse the financial statement, cash flow statement, marginal, zero base budget and variance cost.
- CO4: estimate the liquidity ratios, cash flow from various activities, P/V ratio, cash budget and material and labour cost variances
- CO5: construct reports and budgets on the managerial efficiency of a company based on its financial and cash flow statements.

20UWC410 – COMPANY LAW

COURSE OUTCOMES

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

- CO1: explain the procedure for formation of companies, raising of capital, company management and winding up of companies.
- CO2: identify the contents of MoA, Articles of Association and petition
- CO3: analyse the role of NCLT and NCLAT
- CO4: evaluate various modes of winding up of a company and Composition of Key Managerial Personnel.
- CO5: summarise the methods of raising capital of a company and the consequences of winding up of a company.

20UWC411 – BANKING LAW AND PRACTICES

COURSE OUTCOMES

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

- CO1: understand various types of relationships between banker and customer and concepts of E-banking
- CO2: apply different types of crossings and endorsement for safer transactions
- CO3: analyse the principles of sound lending and factors contributing to NPAs.
- CO4: evaluate the circumstances for dishonor of cheques, models of E-Banking and modus operandi of Mobile banking
- CO5: construct the remedies for minimizing NPA's.

20UWO401 – FINANCIAL SERVICES

COURSE OUTCOMES

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

- CO1: explain the recent development in the Indian financial system
- CO2: identify the responsibilities of providers of financial services
- CO3: analyze the procedure of hire purchasing, leasing, mutual funds and venture capital
- CO4: evaluate the various financial services
- CO5: discuss the pros and cons of various financial services

20UWC512 – CORPORATE ACCOUNTING- I

COURSE OUTCOMES

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

- CO1: explain the concepts of corporate accounting
- CO2: apply the accounting principles to record the transactions of corporate
- CO3: analyse operational performance of corporate by preparing reports
- CO4: interpret the financial results of corporates
- CO5: create corporate statement to take decision making

20UWC513 – DIRECT TAX

COURSE OUTCOMES

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

- CO1: explain the basic principles of taxation
- CO2: compute the total income from various heads of income
- CO3: analyse the procedure of calculations of incomes
- CO4: assess the procedure for clubbing of incomes and set off and carry forward of losses
- CO5: adapt e-filing procedure.

20UWC514 – SECURITIES LAW AND CAPITAL MARKET

COURSE OUTCOMES

Upon completion of the Course, the students will be able to

- CO1: explain the various acts related to securities law
- CO2: apply the procedure of dematerialization of securities and capital market
- CO3: examine the powers and functions of SEBI and various investment schemes
- CO4: evaluate the role of SEBI in capital markets
- CO5: suggest the right investment from available collective investment schemes and capital market instruments

20UWC515 – FINANCIAL MANAGEMENT

COURSE OUTCOMES

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

- CO1: illustrate the concepts of Financial Management Techniques
- CO2: apply financial management techniques in business
- CO3: compute the Cost of capital and working capital requirements of the Firm
- CO4: assess the various theories of cost of capital, capital structure and dividend policy
- CO5: design capital structure and dividend policy for a business unit.

20UWC516 – COMPREHENSION AND *viva voce* - I

COURSE OUTCOMES

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

- CO1: demonstrate a literal comprehension of reading
- CO2: apply knowledge of vocabulary used in commerce subjects
- CO3: identify main idea in reading materials, books and other sources
- CO4: depict the level of understanding in the subject matter
- CO5: develop skills in succeeding in the interviews

20UWO502 - MARKETING

COURSE OUTCOMES

Upon completion of the Course, the students will be able to

- CO1: explain the concepts of marketing
- CO2: identify the various technique of marketing
- CO3: analyse the various segmentation of marketing and techniques of sales promotion
- CO4: examine the marketing mix, sales promotion and e-marketing
- CO5: construct the advertisement copy and marketing plan.

20UWC617 – CORPORATE ACCOUNTING – II

COURSE OUTCOMES

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

- CO1: explain the terms of corporate accounting
- CO2: identify the accounting formats of corporate companies
- CO3: analyse the accounting information to take business decisions
- CO4: evaluate the corporate business performance by preparing various reports
- CO5: discuss the accounting principles for preparing company accounts

20UWC618 – INDIRECT TAXES

COURSE OUTCOMES

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

- CO1: explain the Indirect tax structure of India.
- CO2: apply the tax procedure in real life situation.
- CO3: distinguish between intrastate supply and interstate supply.
- CO4: compute value of supply and input tax credit
- CO5: prepare and submit GST return online.

20UWC619 – AUDITING AND SECRETARIAL PRACTICES

COURSE OUTCOMES

Upon completion of the Course, the students will be able to

- CO1: explain the concepts of auditing and secretarial practices
- CO2: apply the procedures of auditing and secretarial standard
- CO3: implement secretarial standards during his secretarial practices
- CO4: assess the procedure for preparation of status report
- CO5: prepare audit note, audit programme and audit report

20UWC620 – INTERNSHIP

COURSE OUTCOMES

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

- CO1 : conceive and express the ideas about the business
- CO2: solve the problems of the business
- CO3 : evaluate critically the policies, practices, theories of business
- CO4 : develop the leadership qualities through co-operation and team work
- CO5 : identify the resources, acquire knowledge and skills of business by their own self directed methods of learning.

20UWC621 – COMPREHENSION AND *viva voce* - I

COURSE OUTCOMES

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

- CO1: demonstrate a literal comprehension of reading
- CO2: apply knowledge of vocabulary used in commerce subjects
- CO3: identify main idea in reading materials, books and other sources
- CO4: depict the level of understanding in the subject matter
- CO5: develop skills in succeeding in the interviews

20UWL601 – CORPORATE GOVERNANCE AND ETHICS

COURSE OUTCOMES

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

- CO1: understand the concept of corporate Governance and ethics
- CO2: identify the significance of corporate governance in the dynamic business scenario.
- CO3: analyze the functions and role of different committees of the Board.
- CO4: evaluate the role of ethics in business operations
- CO5: design the CSR activities for the firm as per Law.

20UWL602 – PROJECT AND *viva voce*

COURSE OUTCOMES

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

- CO1 : communicate the suggestions to solve the business problems
- CO2: apply the analytic thoughts to a body of knowledge
- CO3 : acquire the research related skills and reflect their thinking
- CO4 : evaluate an ethical awareness about the business
- CO5 : facilitate co-operative efforts towards the objectives of the business

20UWA101 – ENTREPRENEURSHIP DEVELOPMENT

COURSE OUTCOMES

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

- CO1: explain the concept of entrepreneur and entrepreneurship
- CO2: utilize the skills to become an Entrepreneur
- CO3: analyse various business opportunities.
- CO4: choose appropriate Business Model
- CO5: construct the Business Plan

20UWA202 – INDIAN FINANCIAL SYSTEM

COURSE OUTCOMES

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

- CO 1: explain the concepts in Indian financial systems.
- CO 2: identify the various services of financial Institutions.
- CO 3: analyse the performance of regulatory institutions.
- CO 4: justify the need of financial services
- CO 5: choose suitable type of investment options.

20UWA303 – CORPORATE AND OTHER LAWS – I

COURSE OUTCOMES

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

- CO1: explain the procedures followed in filing returns, meetings, incorporation of company and allotment of shares
- CO2: construct the Memorandum of Association, Articles of Association and prospectus of a company
- CO3: analyze the rules for acceptance of public deposits and payment of dividend
- CO4: assess the books of accounts and duties of auditors in company
- CO5: create CSR policy for a company.

20UWA404 – CORPORATE AND OTHER LAWS – II

COURSE OUTCOMES

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

- CO1: explain the basic concepts of contract Act, Negotiable Instrument Act and The General Clauses Act
- CO2: apply the various rules and regulations of acts
- CO3: examine the features of negotiable instruments and applications of General Clauses Act
- CO4: appraise the general rules of construction and various modes of negotiation
- CO5: prepare various deeds and documents of company.

20UWE401 – LABOUR LAWS

COURSE OUTCOMES

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

- CO1: illustrate the concepts of labour laws.
- CO2: apply the procedures regarding various labour laws
- CO3: analyse the methods of calculation of wages, compensation, bonus etc.
- CO4: choose the appropriate methods of calculation of wages, bonus and compensation
- CO5: adapt the dispute redressal mechanism and employees welfare facilities.

20UWE502 – BUSINESS RESEARCH METHODS

COURSE OUTCOMES

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

- CO1: explain the concepts of research and its types
- CO2: make use of the best method for data collection
- CO3: analyse the sample design and sampling techniques
- CO4: criticize the various research design for selection of a problem
- CO5: design a research report

20UWE603 – CUSTOMER RELATIONSHIP MANAGEMENT

COURSE OUTCOMES

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

- CO1: explain the concepts of customer relationship management
- CO2: apply the different levels of e-CRM to retain the existing customers
- CO3: analyse the customer retention process
- CO4: assess the level of customer satisfaction
- CO5: create a customer data base

20UWN201 – FORMS OF ORGANISATION

COURSE OUTCOMES

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

- CO1: illustrate the concepts of trade and commerce.
- CO2: identify the most favorable type of organization
- CO3: analyze the various form of organization
- CO4: evaluate each type of organization with its merits and demerits
- CO5: choose the best model for the business.

20UWJ601 – FORENSIC AUDIT

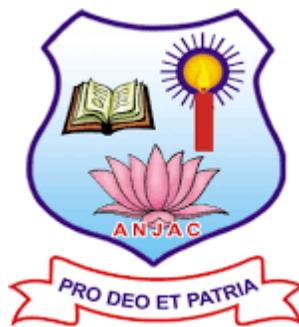
COURSE OUTCOMES

Upon completion of the Course, the students will be able to

- CO1: explain the concepts of forensic audit
- CO2: apply the forensic audit to minimize frauds
- CO3: examine the duties of forensic auditor
- CO4: assess the forensic auditing tools and techniques
- CO5: develop the forensic audit report

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



B.Com (Professional Accounting)

PROGRAMME SPECIFIC OUTCOMES

AND

COURSE OUTCOMES

B.Com. (PROFESSIONAL ACCOUNTING) DEGREE PROGRAMME

Programme Code : UGP018

PROGRAMME SPECIFIC OUTCOMES

On successful completion of the Bachelor of Commerce (Professional Accounting) Programme, the students would have

PSO1: gained thorough knowledge in Accounting, Finance, Taxation and Business Laws.

PSO2: acquired knowledge to communicate thoughts and ideas in appropriate forums effectively, confidently and succinctly.

PSO3: possessed practical skills to work as GST practitioners and Tax consultants and to enroll as articled clerks or audit assistants.

PSO4: acquired capability to continuously evolve and to dynamically respond to new experiences in higher education and employment.

PSO5: imbibed moral and ethical values and positive attitude to understand and respect the pluricultural society.

PSO6: possessed leadership skills and esprit de corps to work effectively and efficiently with employers, fellow articled clerks and audit assistants with a sense of cooperation.

PSO7: acquired a penchant for continuous learning and prepare for CA Final and other professional examinations.

20UGC101 - PRINCIPLES AND PRACTICES OF ACCOUNTING – I
COURSE OUTCOMES

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

- CO1: explain the principles and practices of accounting
- CO2: solve problems on final accounts, depreciation accounting, account current and average due date
- CO3: analyse the errors and pass rectification and adjustment entries
- CO4: assess the different methods of providing depreciation
- CO5: elaborate on the valuation of inventory and construct bank reconciliation statement

20UGC102 - BUSINESS ECONOMICS AND COMMERCIAL KNOWLEDGE
COURSE OUTCOMES

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

- CO1: explain the concepts of demand and supply, production and costs, price mechanism, forms of business organization, and the common business terminologies
- CO2: identify scope of the theory of demand and supply, the factors of production, the phases of business cycle, business, salient features of profession, employment and the measures on liberalization, privatization and globalization
- CO3: examine the of the law of demand and supply, the law of variable proportions, the problems of Indian Economy, the role of price mechanism, the micro and macro environment of business and the role of government organisations in facilitating business.
- CO4: evaluate the marginal, average, variable, fixed and total costs, the activities of business, the determinants of demand and supply and the structure of markets, economic and non-economic activities, and Indian development banks
- CO5: discuss the elasticity of demand and supply , the business cycle, the law of return to scale, the producers equilibrium, price determination in different markets, environment of Indian and overseas companies and government policies towards business

20UGC203 - PRINCIPLES AND PRACTICES OF ACCOUNTING – II
COURSE OUTCOMES

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

- CO1: outline the principles and practices of accounting
- CO2: solve problems on partnership accounts, ratio analysis, bills of exchange, final accounts of non–profit organisation issue and forfeiture of shares and issue of debentures
- CO3: distinguish between the accounting treatment for retirement and death of partner and different forms of accounting for sale or return
- CO4: evaluate the financial statements for profitability, liquidity, solvency and performance
- CO5: construct the balance sheet of companies using accounting ratios and prepare receipt and payments accounts from income and expenditure accounts

20UGC204 - BUSINESS LAW

COURSE OUTCOMES

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

- CO1: summarize the elements of contract, and essentials of contract of sale, features of partnership, LLP and companies
- CO2: illustrate the essential elements of a valid contract, forms of contract of sale, partnership, LLP and interpret the principle of caveat emptor, the memorandum of association and the articles of association of company
- CO3: analyze the contingent contracts and wagering agreements, the conditions and warranties, the relations among the partners, the contents of LLP agreement and the features of different types of companies
- CO4: appraise the remedies for breach of contract and contract of sale, the different methods of dissolution of partnership, the relative advantages of LLP over other forms and the effect of incorporation of a company
- CO5: discuss the methods of discharging a contract, the rights of buyer and unpaid seller, the rights and liabilities of partners on dissolution, corporate veil theory, the doctrine of ultra vires and the doctrine of indoor management

20UGC305 - FINANCIAL ACCOUNTING – I

COURSE OUTCOMES

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

- CO1: explain the main aspects of financial accounting
- CO2: solve problems on branch, departmental, hire purchase, instalment accounts, single entry, investment accounts, and sale to a company
- CO3: distinguish hire purchase and installment accounting systems and analyse the in-transit items in branch accounts
- CO4: evaluate the profitability of investments and the value of repossessed stock
- CO5: compile insurance claims for loss of stock and profit, make up single entry into double entry system and branch accounts in head office books and plan piecemeal distribution of assets of firms

20UGC306 - COST ACCOUNTING

COURSE OUTCOMES

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

- CO1: explain the basic concepts of cost accounting and integrated cost accounting system
- CO2: solve problems on EOQ, stock levels, material and labour cost, job cost, contract cost, process cost, joint products and by-products.
- CO3: categorise the overheads and allocate, apportion and absorb overheads and reconcile the differences between cost and financial profits.
- CO4: measure product costs using absorption costing and Activity Based Costing
- CO5: estimate the value of work-in-progress and solve problems on inter-process profit

20UGC307 - INCOME TAX
COURSE OUTCOMES

Upon completion of the Course, the students will be able to

- CO1: understand the basic concepts of incometax procedure for filing return of income
- CO2: identify the deductions under different heads of income and apply the provisions of TDS
- CO3: compute taxable income under different heads and examine the residential status
- CO4: determine the total income, advance tax payable and tax liability of individuals
- CO5: plan the tax liability of individuals

20UGC308 - BANKING THEORY, LAW AND PRACTICE
COURSE OUTCOMES

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

- CO1: understand the basic concepts of banking theory, law and practice
- CO2: explain the relationship between banker and customer and effect of material alteration and crossing of cheque
- CO3: examine the statutory protection available for paying and collecting banker, NPA and online payment systems
- CO4: perceive e-banking and online payment procedures
- CO5: discuss the various forms of bank loans, advances and NPA

20UGC409 - FINANCIAL ACCOUNTING – II
COURSE OUTCOMES

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

- CO1: explain the basic concepts of financial accounting
- CO2: construct cash flow statements and solve problems on pre-incorporation profit or loss, redemption of preference shares and debentures
- CO3: examinethe accounting treatment for bonus and rights issue and determine the value of rights
- CO4: explain the procedure for redemption of preference shares and debentures
- CO5: adapt accounting system as per accounting standards

20UGC410 - MANAGEMENT ACCOUNTING
COURSE OUTCOMES

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

- CO1: outline the features of management accounting
- CO2: prepare common-size, comparative statements, functional, flexible, cash and master budgets and find BEP, PV ratio and margin of safety
- CO3: analyze material, labour, overhead and sales variances and make trend analysis
- CO4: recommend appropriate solutions for managerial decision making using marginal costing and compare the cost of products under marginal costing
- CO5: estimate the working capital requirements of business organizations

20UGC411 - GOODS AND SERVICES TAX

COURSE OUTCOMES

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

- CO1: explain the concepts of GST
- CO2: apply the procedure to avail the input tax credit and composition scheme
- CO3: examine the provisions of GST regarding time, place and value of supply, reverse charge, ITC, tax invoice and job work
- CO4: explain the procedure for GST registration, filing returns and paying tax
- CO5: solve problems on GST and generate e-way bill

20UGO401 - CONSUMER BEHAVIOUR

COURSE OUTCOMES

Upon Completion of the course, the students will be able to

- CO1: explain the concepts of consumer behaviour
- CO2: construct a cross cultural analysis of consumer, consumer involvement and perception
- CO3: list an overview of personality of consumers and their attitude and learning
- CO4: assess the consumer perception, attitude, learning and consumer behaviour
- CO5: discuss consumer involvement, perception, attitude and decision making.

20UGC512 - ADVANCED ACCOUNTING – I

COURSE OUTCOMES

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

- CO1: understand the basic concepts of advanced accounting
- CO2: solve problems in the preparation of final accounts of companies, buyback of shares and ESOP
- CO3: analyze the liability of underwriters and the provisions regarding buyback of shares and managerial remuneration
- CO4: appraise the value of goodwill and shares
- CO5: design schemes for alteration of share capital and internal reconstruction

20UGC513 - ENTERPRISE INFORMATION SYSTEM – THEORY

COURSE OUTCOMES

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

- CO1: explain the basic concepts of business process management and information systems
- CO2: make use of MS-Word, MS-Excel and Tally for business
- CO3: examine the applications of enterprise information system
- CO4: evaluate the system flow diagrams, computing architectures, delivery models and business information systems
- CO5: elaborate on the latest technologies and devices of information systems

20UGC514 - CORE PRACTICAL – I (EIS - LAB)

COURSE OUTCOMES

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

- CO1: explain the menus and tools of MS Word, Excel, Access and Tally
- CO2: make use of Tally and MS Office for business accounting
- CO3: analyse the various MS Excel functions and tools
- CO4: select data using queries from database
- CO5: create word documents using macros, mail merge, tables and pictures and generate reports using Tally.

20UGC515 - PRINCIPLES OF MANAGEMENT

COURSE OUTCOMES

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

- CO1: explain the basic concepts and functions of management
- CO2: identify the forms of organisation and communication and apply the rules of delegation
- CO3: analyse the different types of plans, controls, leadership styles and organizational structures
- CO4: evaluate delegation, motivation, leadership and direction in organisations
- CO5: elaborate on the controlling techniques and MIS.

20UGC516 - STRATEGIC MANAGEMENT

COURSE OUTCOMES

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

- CO1: summarise the basic strategic management concepts
- CO2: organize strategic business units and profit centres for the enterprises
- CO3: categorise the various functional strategies and make strategic analysis
- CO4: evaluate the contemporary strategic practices in management
- CO5: formulate strategic plans and functional strategies for organisations

20UGC517- COMPREHENSION AND *viva voce* - I

COURSE OUTCOMES

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

- CO1: demonstrate a literal comprehension of reading
- CO2: apply knowledge of vocabulary used in curriculum
- CO3: identify main idea in reading materials, books and other sources
- CO4: depict the level of understanding in the subject matter
- CO5: develop skills in succeeding in the interviews

20UGO502 MANAGING CHANGE IN ORGANISATION

COURSE OUTCOMES

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

- CO1: outline the reasons for resistance to change
- CO2: identify the applications of different toolkits of change
- CO3: analyse the theories of change management
- CO4: assess the change effectiveness
- CO5: propose ideas for managing people issues

20UGC618 - ADVANCED ACCOUNTING – II

COURSE OUTCOMES

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

- CO1: explain the basic concepts of advanced accounting
- CO2: solve problems on amalgamation, statement of affairs, deficiency account, revenue account, holding company accounts and insurance company accounts
- CO3: determine the cost of control, minority interest and order of payment to creditors
- CO4: construct liquidator's final statement of accounts and appraise intercompany owings
- CO5: develop a scheme of reconstruction and delete unrealized intercompany profits.

20UGC619 - APPRENTICESHIP

COURSE OUTCOMES

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

- CO1: summarise the office procedure followed by auditors
- CO2: make use of Tally for recording journal entries and develop reports
- CO3: analyse GST forms and income particulars and examine tax liability of clients
- CO4: appraise the clients regarding the compliance requirements of Income Tax, GST and Companies Act
- CO5: create and upload IT, GST and corporate returns for clients.

20UGC620 - COMPREHENSION AND *viva voce* - II

COURSE OUTCOMES

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

- CO1: demonstrate a literal comprehension of reading
- CO2: apply knowledge of vocabulary used in curriculum
- CO3: identify main idea in reading materials, books and other sources
- CO4: depict the level of understanding in the subject matter
- CO5: develop skills in succeeding in the interviews

20UGL601 - AUDITING AND ASSURANCE

COURSE OUTCOMES

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

- CO1: summarize the principles of auditing and assurance
- CO2: make use of audit plans, audit programmes, audit documentation and external confirmations
- CO3: analyse the related party relationship, audit evidence, auditing standards and relationship between materiality and audit risks
- CO4: appraise audit documentation and audit risks
- CO5: formulate internal audit control systems and discuss auditors' independence

20UGL602 - PROJECT AND *viva voce*

COURSE OUTCOMES

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

- CO1 : communicate suggestions to solve business problems
- CO2: apply the analytic thoughts to a body of knowledge
- CO3 : acquire the research related skills and reflect their thinking
- CO4 : obtain an ethical awareness about the business
- CO5 : facilitate co-operative efforts towards the objectives of the business.

20UGA101 - PRINCIPLES OF INSURANCE

COURSE OUTCOMES

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

- CO1: understand basic concepts of insurance
- CO2: identify insurance products and the role of IRDI
- CO3: analyse the types of fire and marine insurance policies and policy documents
- CO4: evaluate personal, retail and health insurance products
- CO5: choose among different insurance products

20UGA202 - PRACTICAL BANKING

COURSE OUTCOMES

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

- CO1: explain the basic concepts of practical banking
- CO2: identify the relationship between banker and customer, effect of material alteration and crossing of cheques
- CO3: analyse NPA, online payment system and duties of paying banker and collecting banker
- CO4: appraise the different types of deposits, loans and advances
- CO5: elaborate on the various electronic payment systems

20UGE401 - ACCOUNTING STANDARDS

COURSE OUTCOMES

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

- CO1: recall the various accounting standards
- CO2: apply the accounting standards for preparation of accounts
- CO3: examine the requirements of accounting standards
- CO4: explain the components of financial statements
- CO5: solve the problems using the accounting standards

20UGE502 - FINANCIAL MANAGEMENT

COURSE OUTCOMES

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

- CO1: outline the concepts of financial management
- CO2: identify the sources of finance and avenue of investment
- CO3: examine the sources of working capital and dividend policy decisions
- CO4: determine the cost of capital, working capital and evaluate the capital structure
- CO5: develop the capital budgeting proposals and financial plans

20UGE603 - FINANCIAL ECONOMICS

COURSE OUTCOMES

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

- CO1: outline the components of financial economics
- CO2: identify the measures of national income and money supply
- CO3: analyse the fiscal policy, monetary policy, exchange rate regimes and theories of international trade
- CO4: evaluate the different types of fiscal policy and impact of FDI
- CO5: discuss about tariff and non-tariff measures and the functions of GATT and WTO

20UGN301 - SECURITIES MARKET

COURSE OUTCOMES

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

- CO1: understand the concepts of securities market
- CO2: identify the components of securities market
- CO3: analyse the features of derivative market and mutual funds
- CO4: assess the risks in securities markets
- CO5: discuss about the present trends in securities market

20UGJ601 - FINANCIAL ADVISORY SERVICES

COURSE OUTCOMES

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

- CO1: explain the basic concepts of financial, investment and tax planning
- CO2: identify the risks and returns on various investments
- CO3: examine the deductions available under Income Tax Act for life and health insurance
- CO4: assess the tax liability of individual investors
- CO5: discuss about the risk and return profile of various investment products

20UOU101 - LOGICAL REASONING

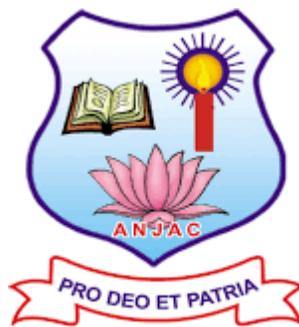
COURSE OUTCOMES

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

- CO1: outline the different concepts of logical reasoning
- CO2: apply Pythagoras theorem and solve problems on direction sense tests, series, coding and classification
- CO3: analyse the problems on number sequence, direction sense, syllogism and Circular and Polygon arrangements
- CO4: evaluate the conceptions of logical reasoning
- CO5: construct and test valid conclusions of logical reasoning

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



B.A English

PROGRAMME SPECIFIC OUTCOMES

AND

COURSE OUTCOMES

B.A. DEGREE PROGRAMME IN ENGLISH

Programme Code: UGP019

PROGRAMME SPECIFIC OUTCOMES

On successful completion of B.A. English Programme, the students would have

PSO1: understood the literary merits of writings in English

PSO2: demonstrated skills in expressing thoughts and ideas intelligibly

PSO3: applied critical faculty to relish pieces of literature and reflect upon them

PSO4: explored scope for research using various literary tools and theories

PSO5: acquired moral values and global perspectives through reading various literary texts

PSO6: emerged as socially responsible individuals with necessary leadership qualities to work for common interests

PSO7: gained skills and knowledge to pursue life-long learning as creative writers, critics, academicians, journalists, administrators and entrepreneurs

20ULC101 - BRITISH LITERATURE- I (15th to 17th CENTURY)

COURSE OUTCOMES

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

CO1: exhibit a comprehensive knowledge of the writers from Renaissance to the Neo- classical age

CO2: use different rhetorical devices to enhance their writing skills

CO3: examine the socio-political conditions of the period

CO4: assess the writing style of various writers

CO5: build aesthetic and ethical values discussed in the literary works

20ULC202 - INDIAN WRITING IN ENGLISH

COURSE OUTCOMES

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

CO1: explain the characteristic features of Indian English Literature

CO2: identify the themes explored in the Indian context

CO3: discover the unique features of Indian writers

CO4: appraise the writing style of Indian writers

CO5: construct ideals based on various social and cultural values of India

20ULC203 - ADVANCED ENGLISH GRAMMAR
COURSE OUTCOMES

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

- CO1: relate the grammatical rules with appropriate situations
- CO2: utilize suitable syntax to construct meaningful sentences
- CO3: analyze and use various sentences and expressions in practical contexts
- CO4: deduct various strategies for effective communication
- CO5: adapt the grammatical structures to crack competitive examinations

20ULC304 - BRITISH LITERATURE - II (18th to 20th CENTURY)
COURSE OUTCOMES

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

- CO1: outline the salient features of Romantic Age to the Modern Age
- CO2: identify the themes depicted in the literary works of the period
- CO3: examine the socio-political conditions of the period
- CO4: assess the writing style of the various writers
- CO5: develop aesthetic and moral values propounded in the literary works

20ULC305 - LITERARY GENRES AND FORMS
COURSE OUTCOMES

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

- CO1: infer and explain various literary devices
- CO2: apply various literary devices and techniques in writing
- CO3: critically analyze the literary merits and values expressed in various works
- CO4: appraise the writers' styles and use them in real life contexts
- CO5: develop their creative and critical faculty through composing literary pieces

20ULC406 - INTRODUCTION TO LANGUAGE AND LINGUISTICS
COURSE OUTCOMES

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

- CO1: recall the history and origin of the English language
- CO2: identify and apply various kinds of sounds for right pronunciation
- CO3: distinguish different grammatical structures
- CO4: discover the varieties in English language spoken across the globe
- CO5: discuss the changes in English language in the course of its development

20ULO401 - CAREER-ORIENTED COMMUNICATIVE ENGLISH
COURSE OUTCOMES

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

- CO1: explain the principles and process of communication
- CO2: organize their ideas for effective communication
- CO3: examine the different styles of writing
- CO4: assess the various situations and communicate effectively
- CO5: design various reports using various tools and techniques

20ULC507- AMERICAN LITERATURE

COURSE OUTCOMES

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

- CO1: infer the growth of American literature and its culture
- CO2: identify the themes explored by the American writers
- CO3: inspect literary tools and techniques used in various texts
- CO4: critically appreciate the writing style of the American writers
- CO5: formulate ideas about the complex and diverse nature of American society

20ULC508 - SHAKESPEARE

COURSE OUTCOMES

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

- CO1: define the rudiments of Shakespeare's plays
- CO2: identify and appreciate the dramatic tools used by Shakespeare
- CO3: analyse significant values in Shakespeare's plays
- CO4; evaluate the themes and issues expressed in Shakespeare's plays
- CO5: adapt the theatrical conventions of Shakespeare to stage plays

20ULC509 - WOMEN'S WRITINGS IN ENGLISH

COURSE OUTCOMES

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

- CO1: list out the core issues focussed by women in their writings
- CO2: identify the different problems faced by women
- CO3: analyse the narrative techniques adopted by women writers
- CO4: assess the literary merits of women writers
- CO5: discuss various methods to analyse works of women writers

20ULC510 - INTRODUCTION TO WORLD CLASSICS

COURSE OUTCOMES

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

- CO1: explain the literary merits of world classics
- CO2: identify and appreciate the grand style of classical writers
- CO3: discover values expounded in the timeless classics
- CO4: interpret human psychology through the characters of classical works
- CO5: build their value system through real-life illustrations

20ULC511- COMPREHENSION AND *viva voce* - I

COURSE OUTCOMES

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

- CO1: explain the salient features of literatures across the globe
- CO2: identify the universal themes discussed by the writers across different ages
- CO3: discover and follow the values expounded in the great literary works of the world
- CO4: evaluate and appreciate the theatrical conventions of Shakespeare's time with the other ages
- CO5: develop a comprehensive knowledge about different literatures

20ULO502 - OBJECTIVES IN ENGLISH LITERATURE

COURSE OUTCOMES

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

- CO1: recall all major writers, works and significant events
- CO2: identify and use the right rhetoric device for analyzing a text
- CO3: analyze various literary schools, theories and movements
- CO4: assess the literary merits of major writers across the globe
- CO5: compile all works chronologically to choose the right option in NET/SET/TRB Examinations

20ULC612 - POSTCOLONIAL LITERATURES IN ENGLISH

COURSE OUTCOMES

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

- CO1: list down the problems encountered by the Third World Nations
- CO2: experiment with the works of Third World Nations to reach the depths of their traditional values and beliefs
- CO3: discover the agony of the colonists through their indigenous literature
- CO4: deduct global perspectives by analysing the writings of Third World Nations
- CO5: elaborate on the concepts of identity and independence revealed through the language of postcolonial literature

20ULC613 - LITERARY CRITICISM

COURSE OUTCOMES

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

- CO1: infer the critical observations made by important critics
- CO2: make use of their critical faculty to judge literary works
- CO3: compare and contrast different critical approaches to find the relevance of a text to the society
- CO4: evaluate the modern literary trends and techniques employed in literary works
- CO5: discuss the relative importance of different writers and find out their aims, methods and effects.

20ULC614 - INDIAN WRITING IN TRANSLATION

COURSE OUTCOMES

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

- CO1: relate the literary merits of Indian writers with other writers
- CO2: identify and analyse the characteristics of translated works
- CO3: examine the unique style of Indian writers
- CO4: appraise the narrative techniques and stylistic features of Indian writers
- CO5: discuss the various superstitious beliefs prevalent in Indian society

**20ULC615 - INTERNSHIP
COURSE OUTCOMES**

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

- CO1: demonstrate skills needed for at least one particular trade
- CO2: make use of appropriate words for effective communication
- CO3: analyse their skills in the working knowledge of English
- CO4: evaluate the internship experience in terms of personal, educational and career needs
- CO5: develop their strengths to become resourceful.

**20ULC616 - COMPREHENSION AND *viva voce* - II
COURSE OUTCOMES**

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

- CO1: relate the problems discussed in the literary works with real life contexts
- CO2: use their critical faculty to judge rightly of an author or any literary work
- CO3: analyze and appreciate the literary merits of the regional writers through translated works
- CO4: assess the salient features of literary works across nations
- CO5: develop strategies to address various social issues

**20ULL601 - MARGINAL WRITINGS
COURSE OUTCOMES**

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

- CO1: show comprehensive knowledge in understanding the issues of the marginalised
- CO2: make use of their emotional ability to interact respectfully with diverse groups
- CO3: examine and empathize with the complex human relationships
- CO4: criticize the patriarchal setup that denies gender equality and justice
- CO5: invent strategies to sort out the problems of the marginalized

**20ULL602 - PROJECT AND *viva voce*
COURSE OUTCOMES**

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

- CO1: infer the core issues highlighted in literary works
- CO2: organise ideas to draft a project
- CO3: examine new thrust areas for research
- CO4: appraise a literary work following a systematic methodology
- CO5: develop strategies to communicate their research ideas effectively

**20ULA101- SOCIAL HISTORY OF ENGLAND
COURSE OUTCOMES**

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

- CO1: outline the historical background of England
- CO2: identify the causes that led to the major political changes in England
- CO3: analyze the social and cultural setup of England
- CO4: assess the sway of various revolutions and movements that reversed the history of England
- CO5: discuss the impact of wars and its consequent changes

20ULA202 - HISTORY OF ENGLISH LITERATURE

COURSE OUTCOMES

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

- CO1: infer the social, political, religious and cultural aspects of England
- CO2: identify the literary merits of the English writers
- CO3: analyse and classify works of similar kind and examine the advancements that have taken place from time to time
- CO4: determine the salient features of different genres
- CO5: discuss the relevance of the contributions of writers to literature and society

20ULE401 - COMMUNICATIVE ENGLISH

COURSE OUTCOMES

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

- CO1: show proficiency in speaking English fluently with right articulation
- CO2: organize their thoughts for effective presentation
- CO3: discover ways to transfer information intelligibly
- CO4: assess any kind of information whether graphical, written or spoken
- CO5: formulate strategies to present their ideas coherently

20ULE502 - ENGLISH FOR CAREERS

COURSE OUTCOMES

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

- CO1: infer the appropriate usage of formal terms in a communication
- CO2: apply their critical thinking and problem-solving skills as occasion demands
- CO3: discover innovative practices in using language functions
- CO4: justify their ideas through negotiation skills
- CO5: build confidence in facing interviews

20ULE603 - ENGLISH FOR COMPETITIVE EXAMINATIONS

COURSE OUTCOMES

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

- CO1: choose the right usage of words
- CO2: organize their ideas effectively in writing and orally
- CO3: examine and transform different kinds of sentences
- CO4: interpret and evaluate a passage critically to understand its essence
- CO5: develop vocabulary acquisition to appear for various competitive examinations

20ULN201 - ENGLISH FOR INSPIRATION

COURSE OUTCOMES

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

- CO1: recall the significant events in the lives of eminent personalities
- CO2: experiment with and explore the struggles and challenges of great people
- CO3: analyse and acknowledge the contributions of Nobel Laureates to society
- CO4: appraise the nobility of great leaders
- CO5: build upon their value system taking great men as sources of inspiration

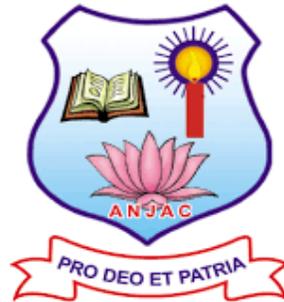
20ULJ601 - BUSINESS ENGLISH
COURSE OUTCOMES

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

- CO1: show competence in using business English for professional development
- CO2: identify and draft different types of business reports and letters
- CO3: analyze the various business situations and tackle them effectively
- CO4: influence people through negotiation skills and show ethics in interaction
- CO5: build good relationship with co-workers through managerial skills.

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



PROGRAMME OUTCOMES

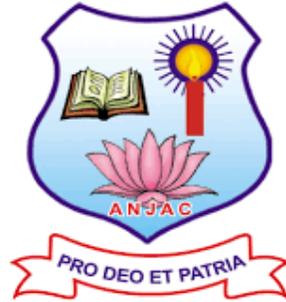
PROGRAMME OUTCOMES (PO)

Programme Outcomes are narrower statements that describe the capabilities the students are expected to have by the time of graduation. On completion of the Post graduate Degree Programmes the student would be able to acquire the following Programme Outcomes (POs):

- i. **Disciplinary knowledge:** Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate programme of study.
- ii. **Communication Skills:** Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.
- iii. **Critical thinking, Problem solving and Analytical reasoning :** Capability to apply analytic thought to a body of knowledge; analyses and evaluate evidence, arguments, claims, beliefs on the basis of empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories, philosophies
- iv. **Acquiring research-related skills, scientific reasoning and reflective thinking:** A sense of inquiry and capability for asking relevant/appropriate questions; ability to recognize cause-and-effect relationships, define problems, formulate and test hypotheses, analyses, interpret and draw conclusions from data; ability to plan, execute and report the results of an experiment or investigation.
- v. **Multicultural competence with moral and ethical awareness/ reasoning:** Possess knowledge of the values and beliefs of multiple cultures and a global perspective; capability to effectively engage in a multicultural society and interact respectfully with diverse groups; ability to embrace moral/ethical values in one's life and career.
- vi. **Cooperation/Team work with leadership qualities:** Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.
- vii. **Self-directed lifelong learning with information/digital literacy:** Capability to use ICT in a variety of learning situations; ability to work independently, identify appropriate resources required for a project; ability to acquire knowledge and skills, through self-paced and self-directed learning aimed at personal development.

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



M.A Tamil

**PROGRAMME SPECIFIC OUTCOMES
AND
COURSE OUTCOMES**

Programme Code: PGT01

Programme Name: M.A (Tamil)

Program Specific Outcomes

- PSO1 :** தமிழ் இலக்கண, இலக்கியத்தில் புலமையும், பயன்பாட்டு மொழியறிவும் கொண்டவர்களாகத் திகழ்ந்திருப்பர்
- PSO2 :** மொழிபெயர்ப்புச் சிந்தனையினால் பன்னாட்டு மக்களின் பண்பாடுகளையும், மொழிக் கூறுகளையும் காரண காரியங்களோடு ஆய்ந்தறிந்து மொழிபெயர்க்கும் மொழி பெயர்ப்பாளராகியிருப்பர்
- PSO3 :** இலக்கியப் பதிவுகளின் ஊடாக அமைந்திருக்கும் சுற்றுச்சூழல் அறிவினால் சூழல் பாதுகாப்புணர்வோடு சமூக நலன் சார்ந்து வாழ்ந்திருப்பர்
- PSO4 :** மொழி ஆர்வத்தை ஏற்படுத்துவதால் தொடர்புமொழி ஆற்றலையும், ஆய்வுச் சிந்தனையினால் அறிவியல் மனப்பான்மையையும் வளர்த்திருப்பர்
- PSO5:** தமிழகத்தின் வரலாறு, பண்பாடு, அறநெறிகள், தொன்மை சார்ந்தகலைகள் போன்றவற்றைக் கற்றறிந்து சமூகத்தை நல்வழிப்படுத்துவதுடன், சமூகப் பாதுகாப்பு விழுமியங்களையும் பெற்றிருப்பர்
- PSO6 :** ஊடகவியலாளர், எழுத்தாளர், பன்னாட்டு அளவிலான ஆசிரியர், தமிழ் வளர்ச்சித்துறைப் பணியாளர் போன்ற பல்வேறு பணிவாய்ப்புகளைப் பெறுவதற்கு வாய்ப்புகள் உள்ளன
- PSO7:** UGC - NET, SET, TNPSC போன்ற போட்டித் தேர்வுகளை வெற்றிகரமாக எதிர்கொண்டிருப்பர்

Course Outcomes

Course Code : 20PTC101

Course Name: இலக்கணம் - I எழுத்து

மாணவர்கள், இலக்கணம் - I எழுத்து கற்றுத் தேர்ந்த பின்

CO1: தொல்காப்பிய எழுத்திலக்கணம், மொழியியல் குறித்து அறிந்துகொள்ள வாய்ப்பு உண்டு

CO2: தமிழ் எழுத்துக்களின் வகைப்பாட்டினையும் உச்சரிப்பு முறைகளையும் தேர்ந்து தெளிய இயலும்

CO3: தொல்காப்பியர் காலச் சாரியை, புணர்ச்சி, பண்டையகால அளவை முறைகள் குறித்த சிந்தனைகளை இக்காலச் சான்றுகளோடு பொருத்திக் காணமுடியும்

CO4: காலந்தோறும் தோன்றிய இலக்கண நூல் கருத்துக்களைப் பகுத்தாய வழிவகைகள் உள்ளன

CO5: அறிவியல் நோக்கிலான மொழியியல் சிந்தனைகளையும் இலக்கணக் கருத்துக்களையும் மேம்படுத்திக்காண இயலும்.

Course Code: 20PTC102**Course Name: இக்கால இலக்கியம்**

மாணவர்கள், இக்கால இலக்கியம் கற்றுத் தேர்ந்த பின்

- CO1: காலந்தோறும் மாறிவரும் கவிதைகளின் பொருள், வடிவம், உத்தி ஆகியவற்றை அறிந்திடச் செய்வதுடன் கவிதை இயற்றிட வாய்ப்பு உண்டு
- CO2: சிறுகதைகளின் கலை நுட்பத்தைக் கற்றுத் தேர்வதுடன் படைப்பாளுமையைப் பயன்படுத்திக் காண இயலும்
- CO3: புதின இலக்கியம் வழியாக சமூகச் சிக்கல்களைப் பட்டியலிட்டு சமூகத்துடன் பொருத்தமுற வாழ இயலும்
- CO4: நாடக இலக்கியத்தின் வழியாக நடிப்புத்திறனைத் தீர்மானிக்க வாய்ப்பு உண்டு
- CO5: கட்டுரை இலக்கியத்தின் வழியாக தெளிந்த மொழி நடையையும் சிந்தனைப் புலத்தையும் மேம்படுத்திட இயலும்.

Course Code: 20PTC103**Course Name: தமிழக வரலாறும் பண்பாடும்**

மாணவர்கள், தமிழக வரலாறும் பண்பாடும் கற்றுத் தேர்ந்த பின்

- CO1: தமிழக வரலாற்றுக்கான அடிப்படைச் சான்றுகளை அறிந்து கொள்ள முடியும்
- CO2: சங்க இலக்கியங்கள் வழி பண்டைய தமிழரின் வாழ்க்கை முறைகளை அறிந்து சமூகச் சிந்தனையோடு செயல்பட வாய்ப்பு உண்டு
- CO3: பல்லவர்களின் ஆட்சிமுறை, சமுதாய நிலை, கலை மற்றும் பண்பாடுகளைப் பகுத்தாய முடியும்
- CO4: பிற்காலச்சோழர், பாண்டியர் காலத்தில் தமிழகம் அடைந்த வளர்ச்சி நிலைகளைத் தீர்மானிக்க இயலும்
- CO5: ஐரோப்பியர் வருகையால் தமிழகத்தில் ஏற்பட்ட மாற்றம், இந்திய விடுதலைப் போரில் தமிழகத்தின் நிலைகளைத் தொகுத்துக்காண இயலும்.

Course Code: 20PTC205**Course Name: இலக்கணம் - II சொல்**

மாணவர்கள், இலக்கணம் - II சொல் கற்றுத் தேர்ந்த பின்

- CO1: தொல்காப்பியம் முன் வைக்கும் சொல் உருவாக்கம், வேற்றுமை குறித்து அறிந்து கொள்ள இயலும்
- CO2: பழந்தமிழ் இலக்கியப் பனுவல்களில் இடம் பெற்றுள்ள அழைக்கும் மரபு, பெயர், வினைகளைப் புரிந்து கொண்டு பயன்பெற முடியும்
- CO3: சொல்லிலக்கணக் கூறுகளான இடை, உரி, எச்சச் சொற்களை வகைப்படுத்திட வழிவகை உண்டு
- CO4: இலக்கண நூல்களுக்கு இடையேயான ஒற்றுமைக் கூறுகளையும் தனித்துவக் கூறுகளையும் மதிப்பிட்டறிய இயலும்
- CO5: தமிழில் காணப்பெறும் மொழியியல் கூறுகளையும் தொடரிலக்கணச் சிந்தனையையும் பொருத்திக்காண வாய்ப்பு உள்ளது.

Course Code: 20PTC206**Course Name: சிற்றிலக்கியம்**

மாணவர்கள், சிற்றிலக்கியம் கற்றுத் தேர்ந்த பின்

CO1: பிள்ளைத் தமிழுக்குரிய பருவங்களை அறிய இயலும்

CO2: கரிவலம் வந்த நல்லூர் பால் வண்ணநாதரின் பெருமைகளைத் தெரிந்து கொண்டு இறை உணர்வை வெளிக் கொணர முடியும்

CO3: தூது இலக்கியச் சிறப்பினைப் பட்டியலிட்டுக் காண வாய்ப்பு உண்டு.

CO4: சோழர்களின் ஆட்சித்திறனையும் போர் நடப்பங்களையும் பயன்பாட்டு நோக்கில் மதிப்பிட்டுக்காண வாய்ப்பு உள்ளது.

CO5: பள்ளு இலக்கியம் மூலம் உழவர்களின் வாழ்வியலை உணர்ந்து சமூக சமய, மத நல்லிணக்கத்தோடு வாழ்ந்திட இயலும்.

Course Code: 20PTC207**Course Name: சமய இலக்கியம்**

மாணவர்கள், சமய இலக்கியம் கற்றுத் தேர்ந்த பின்

CO1 : சமய இலக்கியங்களின் தோற்றம், வளர்ச்சியினை அறிய இயலும்

CO2 : சைவ சமய இலக்கியங்களின் வழி இறைத் தத்துவம், புராண நம்பிக்கையையும் சூழலியல் சிந்தனைகளையும் மதிப்பிட முடியும்

CO3 : வைணவ சமய இலக்கியங்களைப் பண்பாட்டு நோக்கில் ஒப்பிட்டு அறிய முடியும்

CO4 : ஆழ்வார்களின் பக்தித்திறனை மதிப்பிட்டுத் தெளிவு பெற முடியும்

CO5 : கிறித்துவ, இசுலாமிய இலக்கியங்களின் சுவைகளைத் தொகுத்துக் காண வழிவகைகள் உள்ளன.

Course Code: 20PTC208**Course Name: இலக்கியத் திறனாய்வியல்**

மாணவர்கள், இலக்கியத் திறனாய்வியல் கற்றுத் தேர்ந்த பின்

CO1: தமிழாய்வுப் பரப்பில் திறனாய்வு வரலாற்றை அறிந்து கொள்ள இயலும்

CO2: திறனாய்வாளரின் பண்புகளைக் கற்று ஆய்வில் பயன்படுத்த வாய்ப்பு உண்டு

CO3: திறனாய்வு வகைகளைப் பட்டியலிட்டுக் காட்ட முடியும்

CO4: இலக்கிய உள்ளீடுகள், உத்திகள் ஆகியவற்றின் முக்கியத்துவத்தை உணர இயலும்

CO5: திறனாய்வுப் பயன்பாட்டை மேம்படுத்த வழிவகை உண்டு.

Course Code: 20PTC310**Course Name: இலக்கணம் III - பொருள் - 1**

மாணவர்கள், இலக்கணம் III - பொருள் - 1 கற்றுத் தேர்ந்த பின்

CO1: தொல்காப்பிய அகத்திணையியல் கோட்பாடுகளை அறிய இயலும்

CO2: தொல்காப்பியப் புறத்திணையியல் கோட்பாடுகளை இலக்கியங்களில் பயன்படுத்த வழிவகை உண்டு

CO3: செவ்வியல் காலக் களவுக்கோட்பாடுகளை வகைப்படுத்தி அறிய இயலும்

CO4: தொல் கற்புமரபின் முக்கியத்துவத்தை உணர முடியும்

CO5: தொல் அகக்கோட்பாடுகளின் தனித்துவத்தை இலக்கியத்துடன் பொருத்திக் காண இயலும்.

Course Code: 20PTC311

Course Name: பண்டை இலக்கியம்

மாணவர்கள், பண்டை இலக்கியம் கற்றுத் தேர்ந்த பின்

CO1: பண்டைத் தமிழரின் வெற்றி, வீரம், கொடைச்சிறப்பு, விருந்தோம்பல் பண்பு முதலானவற்றை அறிய இயலும்

CO2: அகத்திணைகளான குறிஞ்சி, மருதம், பாலை முதலான செய்யுட்களில் காணப்பெறும் பண்பாட்டுச் சிந்தனைகளைப் பயன்படுத்த முடியும்

CO3: அகத்திணைக் கூறுகளான நெய்தல், முல்லை முதலான செய்யுட்களில் காணப்பெறும் பழக்க வழக்கங்களையும், வழிபாட்டு முறைகளையும் வகைப்படுத்த வாய்ப்புகள் உள்ளன

CO4: ஆற்றுப்படை நூல்களின் வாயிலாக இரவலர் - புரவலர் உறவுநிலைகள், விருந்தோம்பல் முதலானவற்றை மதிப்பிட வழிவகை உண்டு

CO5: அகப்பாட்டுக்களின் வாயிலாக பண்டைத் தமிழரின் அகத்திணை ஒழுக்கங்களைப் பொருத்திக்காட்ட முடியும்.

Course Code: 20PTC312

Course Name: காப்பிய இலக்கியம்

மாணவர்கள், காப்பிய இலக்கியம் கற்றுத் தேர்ந்த பின்

CO1: தமிழில் தோன்றிய இரட்டைக் காப்பியங்களின் சிறப்பினை அறிய இயலும்

CO2: சீவகசிந்தாமணி, கம்பராமாயணம் ஆகியவற்றைப் பண்பாட்டு நோக்கில் பயன்படுத்த இயலும்

CO3: சிவனடியார்களின் சிறப்புகளையும், சிவனின் திருவிளையாடல்களையும் பட்டியலிட்டு உணர முடியும்

CO4: கிறித்துவ, இசுலாமியக் காப்பியங்களின் முக்கியத்துவத்தை அறிய இயலும்

CO5: தற்காலக் காப்பியங்களில் மக்களின் வாழ்வியலைக் கண்டறிந்து சமூகநல மனப்பான்மையை மேம்படுத்திட வழிவகை உண்டு.

Course Code: 20PTC414

Course Name: இலக்கணம் - IV பொருள் -2

மாணவர்கள், இலக்கணம் IV - பொருள் - 2 கற்றுத் தேர்ந்த பின்

CO1: மெய்ப்பாடு குறித்த தொல்காப்பியச் செய்திகளை அறிய இயலும்

CO2: உவமையின் இலக்கணம் மற்றும் வகைகளை இலக்கியங்களில் பயன்படுத்த முடியும்

CO3: பழந்தமிழ் மரபின் இன்றியமையாமையைப் பட்டியலிட வழிவகை உண்டு

CO4: செய்யுள் இயற்றும் நுட்பங்களை மதிப்பிட்டு அறிய முடியும்

CO5: தொல் மரபுப் பெயர்களைத் தொகுத்திட வாய்ப்பு உண்டு.

Course Code: 20PTC415**Course Name: அறநெறி இலக்கியம்**

மாணவர்கள், அறநெறி இலக்கியம் கற்றுத் தேர்ந்த பின்

CO1: திருக்குறள் மற்றும் நாலடியாரின் கருத்தாக்கங்களை அறிய முடியும்

CO2: அறநெறிக் கருத்துக்களைப் பயின்று வாழ்வில் பயன்படுத்த இயலும்

CO3: திரிகடுகம், ஏலாதி நூல் கருத்துக்களை ஒப்பிட வாய்ப்பு உண்டு

CO4: பழமொழி உணர்த்தும் அறநெறியையும் ஆசாரக்கோவை உணர்த்தும் ஒழுக்க நெறியையும் மதிப்பிட்டறிய முடியும்

CO5: விவேக சிந்தாமணி, புதிய ஆத்திசூடி கற்று வாழ்வில் மேம்பட முடியும்.

Course Code: 20PTC416**Course Name: மானிடவியல்**

மாணவர்கள், மானிடவியல் கற்றுத் தேர்ந்த பின்

CO1: மானிடவியலின் தோற்றம் மற்றும் வளர்ச்சி நிலைகளை அறிய இயலும்

CO2: மானிடவியலின் முக்கியக் கூறான பண்பாட்டு நிலைகளைப் பரிசோதித்து உணர முடியும்

CO3: மனித சமுதாய அமைப்பு, குடும்ப உறவுநிலைகள் ஆகியவற்றைப் பகுத்தாய முடியும்

CO4: மனிதர்களின் உணவு ஈட்டல், வேளாண் பொருட்கள் பரிமாற்ற முறைகள், சமய நம்பிக்கைகள் ஆகியவற்றின் முக்கியத்துவத்தை மதிப்பிட முடியும்

CO5: பல்வேறு மனித சமுதாய வளர்ச்சி நிலைகளையும் அவை சமூகத்தில் ஏற்படுத்தும் பண்பாட்டு மாற்றங்களையும் தொகுத்து உணர முடியும்.

Course Code: 20PTC417**Course Name : படைப்புக்கலை**

மாணவர்கள், படைப்புக்கலை கற்றுத் தேர்ந்த பின்

CO1: படைப்பின் வகைகளை அறிய இயலும்

CO2: படைப்பு ஆளுமையை அடையாளம் காண வாய்ப்பு உண்டு

CO3: படைப்பு இயக்கங்களை வகைப்படுத்தி அறிய முடியும்

CO4: படைப்பாக்க உத்திகளை மதிப்பிட்டு உணர இயலும்

CO5: படைப்பாக்க நெறிகளைத் தொகுத்துக் காண இயலும்.

Course Code: 20PTE101**Course Name: ஒப்பிலக்கியம்**

மாணவர்கள், ஒப்பிலக்கியம் கற்றுத் தேர்ந்த பின்

CO1: ஒப்பிலக்கியம் பற்றிய கருத்தாக்கங்களை அறிய முடியும்

CO2: ஒப்பிலக்கியத்தின் வளர்ச்சி நிலைகளைப் பயன்படுத்திக் காண இயலும்

CO3: ஒப்பீட்டியல் குறித்த அறிவியல் முறைகளை வகைப்படுத்த முடியும்

CO4: ஒப்பீட்டியல் இலக்கிய, இசை, கூத்து பற்றித் தீர்மானிக்க இயலும்

CO5: ஒப்பிலக்கிய இலக்கிய வடிவங்களைக் கட்டமைக்க வழி உண்டு.

Course Code: 20PTE102**Course Name : நாட்டுப்புறவியல்**

மாணவர்கள், நாட்டுப்புறவியல் கற்றுத் தேர்ந்த பின்

CO1: நாட்டுப்புற இலக்கியங்கள், பண்பாட்டுக் கருத்தாக்கங்களை அறிந்திட வாய்ப்பு உண்டு

CO2: நாட்டுப்புற விளையாட்டுக்கள், நாட்டுப்புற மருத்துவம் ஆகியவற்றைக் கற்றுப் பயன்படுத்த இயலும்

CO3: நாட்டுப்புறக் கதைப்பாடல்களின் தன்மையினைப் பகுத்தாய முடியும்

CO4: நாட்டுப்புறக் கோட்பாடுகள் குறித்தும் நாட்டுப்புறக் கதைகள் குறித்தும் மதிப்பிட இயலும்

CO5: நாட்டுப்புறக் கலைகளை வாழ்வியலோடு இணைத்துக் காண இயலும்.

Course Code: 20PTE203**Course Name: பயன்பாட்டுத்தமிழ்**

மாணவர்கள், பயன்பாட்டுத்தமிழ் கற்றுத் தேர்ந்த பின்

CO1: பேச்சுத் தமிழை நன்கு கற்று, அதன் வழி பேசும் கலையை அறிய இயலும்

CO2: இதழியல் தமிழை நன்கு பயின்று அதன் வழி பத்திரிகை எழுதும் ஆற்றலைப் பயன்படுத்த வழிவகை உண்டு

CO3: வானொலி, தொலைக்காட்சித் தமிழை நன்கு அறிந்து அதன்வழி வானொலி, தொலைக்காட்சியில் பணிபுரிவதற்கான வாய்ப்புக்களைப் பட்டியலிட முடியும்

CO4: விளம்பர உத்திகளை அறிந்து, அதன்வழி வானொலி, தொலைக்காட்சி ஆகியவற்றின் முக்கியத்துவத்தை மதிப்பிட முடியும்

CO5: இதழியல், தொலைக்காட்சி, திரைப்படம், கணினி, இணையம், ஆகிய மக்கள் தொடர்பு ஊடகங்களின் ஆற்றலை மேம்படுத்திக்காண இயலும்.

Course Code: 20PTE304**Course Name: மொழிபெயர்ப்பியல்**

மாணவர்கள், மொழிபெயர்ப்பியல் கற்றுத் தேர்ந்த பின்

CO1: மொழிபெயர்ப்பு குறித்த அடிப்படைச் சிந்தனைகளை அறிய வாய்ப்பு உண்டு

CO2: மொழிபெயர்ப்பு நுட்பங்களைப் பயன்படுத்தித் தெளிய வாய்ப்புகள் உள்ளன

CO3: பன்மொழி இலக்கியங்களைப் பகுத்தாய இயலும்

CO4: மொழிபெயர்ப்பு இலக்கியங்களை மதிப்பிட வழிவகைகள் உள்ளன.

CO5: மொழிபெயர்ப்பின் வழி அறநெறி ஆளுமையாளரின் சிந்தனையை மேம்படுத்திக்காண முடியும்.

Course Code: 20PTE305**Course Name: கல்வெட்டுக்களும் கலைகளும்**

மாணவர்கள், கல்வெட்டுக்களும் கலைகளும் கற்றுத் தேர்ந்த பின்

CO1: கல்வெட்டு எழுத்துக்கள் குறித்து அறிய வாய்ப்புகள் உள்ளன.

CO2: கல்வெட்டுச் செய்திகள் வாயிலாகச் சமூகப் பின்புலங்களை இனங்காண வழியுண்டு

CO3: கலைகளின் வரலாற்று ஆவணப் பதிவுகளை ஒப்பிட்டு அறிய இயலும்.

CO4: காலந்தோறும் வளர்ச்சியடைந்த கலைகளின் தன்மைகளை மதிப்பிட முடியும்

CO5: கலைகளைப் பாதுகாத்து மேம்படுத்திட வாய்ப்பு உண்டு.

Course Code: 20PTC104, 20PTC209, 20PTC313, 20PTC418

Course Name: தெரிதிறன் தேர்வும் வாய்மொழித் தேர்வும் (Comprehension and viva voce)

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

- CO1: demonstrate a literal comprehension of reading
- CO2: apply knowledge of vocabulary used in curriculum
- CO3: analyse main idea in reading materials, books and other sources
- CO4: judge the level of understanding in the subject matter
- CO5: improve the communication skills to face the interviews successfully

Course Code: 20PTC419

Course Name: பயில்நிலை (Internship)

மாணவர்கள், பயில்நிலைப் பயிற்சியினை முடித்த பின்,

- CO1 : தமிழ்மொழி மற்றும்இலக்கியத்தில் நல்ல அறிவு பெற்றிருப்பர்
- CO2 : கல்வெட்டியலில் செய்முறைப் பயிற்சி பெற்றுத் திகழ்வர்
- CO3 : தமிழ் இலக்கணத்தில் தோய்ந்த அறிவு பெற்று விளங்குவர்
- CO4 : இலக்கியத்தினைத் திறனாய்வு செய்வதில் சிறந்து விளங்குவர்
- CO5 : குழுமனப்பான்மையுடன் ஒருங்கிணைப்புத்திறன் பெற்றுத் திகழ்வர்.

Course Code: 20PTC420

Course Name: ஆய்வேடும் வாய்மொழித் தேர்வும் (Project and viva voce)

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

- CO1 : understand and identify the real life problem which needs the solution
- CO2 : make the survey for the collection of the data required for the study
- CO3 : test the hypothesis by applying the appropriate statistical tools, infer the results drawn and report the suggestions
- CO4 : emerge as a leader by suggesting suitable solutions to the problems
- CO5 : co-ordinate and execute research related work as a member of research team and apply ICT tools for research independently.

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



M.A English

**PROGRAMME SPECIFIC OUTCOMES
AND
COURSE OUTCOMES**

Programme Code: PGL02

Programme Name: M.A (English)

Program Specific Outcomes

Upon completion of M. A. programme, the students will be able to

PSO1: read and interpret texts from multiple genres of literature, and write about them using appropriate evidence

PSO2: communicate and present ideas and sources accurately and present complex views effectively

PSO3: deploy ideas from works of criticism and theory to be applied in their reading and Writing

PSO4: identify the topics, appropriate methods and sources for research for furthering research activities

PSO5: develop a critical understanding of diverse texts within their historical and cultural Contexts to incorporate their inherent values

PSO6: work with responsibility for achieving the teams goal as a group member and leader

PSO7: engage in lifelong learning to equip themselves to adapt to the changing environment and face career challenges

COURSE OUTCOMES

Course Code: 20PNC101

Course Name: CHAUCER TO MILTON

Upon completion of this course, the students will be able to

- CO1: know the poetic tactics of the classical writers
- CO2: recognize the difference between Old English and Middle English
- CO3: be aware of the salient features of aphoristic style
- CO4: discover the creative power behind art and literature
- CO5: critically analyze the life and works of great writers.

Course Code: 20PNC102

Course Name: SHAKESPEARE

Upon completion of this course, the students will be able to

- CO1: appreciate the magnitude of the Shakespearean world
- CO2: introspect the complexities of Shakespeare's plays
- CO3: analyze the stylistic features of Shakespeare
- CO4: attain a comprehensive knowledge of the plays of Shakespeare
- CO5: relish the sublimity of Shakespearean language.

Course Code: 20PNC103

Course Name: RESTORATION TO NEOCLASSICAL AGE

Upon completion of this course, the students will be able to

- CO1: realize the sense of rationalism and sensibility of the writers
- CO2: recognize and understand the figurative language
- CO3: apply the technical nuances of Neo-Classical dramas
- CO4: interpret the artistic style of the writers
- CO5: appreciate the intense zeal of the writers.

Course Code: 20PNC205

Course Name: LITERARY CRITICISM AND THEORIE

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

- CO1: have firsthand knowledge of great critics and their views
- CO2: familiarize with the important critical movements of the modern time
- CO3: apply the knowledge of literary criticism to literary texts
- CO4: undertake further reading in literary theories and movements
- CO5: relish the art of criticism.

Course Code: 20PNC206

Course Name: ROMANTIC AGE

Upon completion of this course, the students will be able to

- CO1: know the revolutionary ideologies of the romantic writers
- CO2: identify the lyrical qualities in romantic poetry
- CO3: discover the creative power behind art and literature
- CO4: appreciate the style of the essayists
- CO5: relish the aesthetic beauty and wonder in the realm of nature.

Course Code: 20PNC207

Course Name: VICTORIAN AGE

Upon completion of this course, the students will be able to

- CO1: know the religious and philosophical insight through dramatic monologues
- CO2: appreciate the writers' vision for the betterment of mankind
- CO3: analyze the life of the Victorians
- CO4: ponder the values and ideas propagated by the Victorian writers
- CO5: explore the several social problems in the Victorian England.

Course Code: 20PNC208

Course Name: MODERN AGE

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

- CO1: know the realistic expression of modern sensibility
- CO2: experience the originality of modern writers
- CO3: analyze the intense zeal of the writers in religious novels
- CO4: interpret the richness of modern literary works
- CO5: appreciate the serious critics of contemporary modern society in humorous plays

Course Code: 20PNC310

Course Name: STRUCTURE OF MODERN ENGLIS

Upon completion of this course, the students will be able to

- CO1: know the concepts of linguistics
- CO2: familiarize with the basic symbols of the International Phonetic Alphabet
- CO3: analyze the intrinsic values of language usage
- CO4: appraise the various aspects of articulation effects
- CO5: practise the intricacies of various structures of modern English.

Course Code: 20PNC311

Course Name: AFRO-AMERICAN LITERATURE

Upon completion of this course, the students will be able to

- CO1: learn the literary works and culture of the Africans and Americans
- CO2: identify the literary activities of the writers of African descent
- CO3: gain a perception of literary trends set by the Afro-American writers

CO4: interpret the racial discrimination encountered by the Afro-Americans

CO5: appreciate the positive approaches of the Afro-American writers towards equality and emancipation.

Course Code: 20PNC312 Course Name: TRANSLATION THEORY AND PRACTIC

Upon completion of this course, the students will be able to

CO1: outline the history of translation

CO2: make use of the translational skills

CO3: apply the intrinsic skills of translation

CO4: refine their standard in translation

CO5: appreciate the intercultural concepts.

Course Code: 20PNC414 Course Name: MASTERPIECES OF WORLD LITERATUR

Upon completion of this course, the students will be able to

CO1: learn, to be entertained and enlightened

CO2: perceive the historical roots of global cultures

CO3: describe intimate human experiences

CO4: appreciate the incorporated ethics in human cultures

CO5: communicate the emotional truth and objective facts.

Course Code: 20PNC415 Course Name: TEACHING ENGLISH AS A SECOND LANGUAGE

Upon completion of this course, the students will be able to

CO1: know the role of teaching and learning English in India

CO2: utilize the basic skills in English

CO3: discover the resources needed to teach and evaluate

CO4: demonstrate the methods and approaches in teaching and learning English

CO5: critically assess the new teaching methods and learning strategies in the second language acquisition.

Course Code: 20PNC416 Course Name: NEW LITERATURES IN ENGLISH

Upon completion of this course, the students will be able to

CO1: relate the emerging body of literature

CO2: intimate the process of cross-cultural studies and comparative literary studies

CO3: display an understanding of both literal and metaphorical meaning of literary texts

CO4: negotiate the complexities and ambiguities

CO5: incorporate the literary products with different cultural and geographical specificity

Course Code: 20PNC417

Course Name: RESEARCH METHODOLOGY

Upon completion of this course, the students will be able to

CO1: outline various contemporary literary theories for the practical application to literary text

CO2: identify the linguistic, cultural and historical background of the texts

CO3: critically evaluate and interpret a literary text

CO4: relate their own researches with current theories

CO5: independently work in a research environment, consolidate the outcome of the research and write technical papers.

Course Code: 20PNE101

Course Name: INDIAN WRITING IN ENGLISH

Upon completion of this course, the students will be able to

CO1: learn the foundation and significance of Indian writing

CO2: recognize the core elements of the writers' compositional workmanship

CO3: analyze the style of the prose writers

CO4: distinguish the beauty of the diverse characterizations

CO5: appreciate the implications of the human values.

Course Code: 20PNE102

Course Name: GENDER STUDIES

Upon completion of this course, the students will be able to

CO1: comprehend the biological and cultural definition of gender roles in the public and private spheres

CO2: grasp the hidden realities of the society and various types and forms of evidences on women

CO3: familiarize themselves with gender issues in the organized and unorganized sectors

CO4: facilitate the understanding of social dynamics in the context of gender

CO5: sensitize the students on the invisibility of women's work and inhuman practices in the name of culture on the third gender.

Course Code: 20PNC305

Course Name: ENVIRONMENTAL LITERATURE

Upon completion of this course, the students will be able to

CO1: comprehend the significance of environment

CO2: demonstrate the value of human interaction with the environment

CO3: analyse their aesthetic and ethical sense towards environment and nature

CO4: justify and implement the need for more researches in Ecocriticism

CO5: fortify the environment through enormous contribution in research and development.

Course Code: 20PNC104, 20PNC209, 20PNC313 and 20PNC418

Course Name: COMPREHENSION AND *viva voce*

Upon completion of this course, the students will be able to

- CO1: organize and integrate all the critical theories studied
- CO2: recapitulate and comprehend the knowledge coherently
- CO3: develop their confidence for facing competitive examinations
- CO4: optimize the performance of the students beyond written examinations
- CO5: respond relevantly to the examiners' questions.

Course Code: 20PNC419

Course Name: INTERNSHIP

Upon completion of this course, the students will be able to

- CO1: comprehend the scope of career avenues
- CO2: keep pace with the industrial needs
- CO3: cope with the changing scenario of technological complexities
- CO4: assimilate the acquired knowledge, skills, and theoretical practice in their respective professions
- CO5: build in confidence to face the challenging competitions

Course Code: 20PNC420

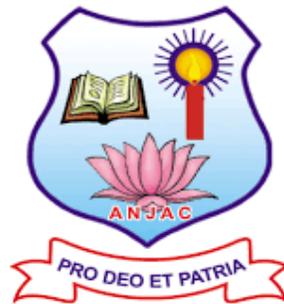
Course Name: PROJECT AND *viva voce*

Upon completion of this course, the students will be able to

- CO1: motivate themselves and develop an interest in planning and implementation of research
- CO2: characterize, analyze and interpret the data collected
- CO3: propose a research study and apply appropriate methodologies
- CO4: carry out advanced research in specialized areas and transmit their knowledge to the society
- CO5: recognize and integrate life-long learning skills to become pro-active in personal and professional life.

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



M.Sc Mathematics

**PROGRAMME SPECIFIC OUTCOMES
AND
COURSE OUTCOMES**

Programme Code: PGM03

Programme Name: M.Sc. (Mathematics)

PROGRAM SPECIFIC OUTCOMES

On successful completion of M.Sc., Mathematics programme, the students would have

PSO1 : understood the advance concepts in Mathematics and communicate Mathematics effectively

PSO2 : developed confidence to learn new concepts/ideas in Mathematics independently

PSO3 : explored areas that remain potential for research and development in the discipline of Mathematics

PSO4 : applied the Mathematical concepts in various fields of learning including research, and prepare for lifelong learning

PSO5: equipped themselves to crack Lectureship / Fellowship /Public Service Commission examinations for career development

PSO6 : acquired leadership qualities through the experience gained from the activities of Association, Seminars, Workshops and Field visits organized by the Department of Mathematics

PSO7 : acquired analytical ability and problem solving skills required for applications of Mathematics in the fields of Science and Technology

COURSE OUTCOMES

Course Code: 20PMC101

Course Name: GROUPS, RINGS AND LATTICES

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

- CO1: explain and illustrate the concepts in groups, rings and lattices
- CO2: prove theorems such as Cauchy's theorem, Sylow's theorem, Jordan Holder theorem, Fermat's theorem and Schreier's theorem
- CO3: analyze the structure of finite abelian groups and lattices, solvability, isomorphism of group
- CO4: determine maximal ideals of a ring, generators of a group
- CO5: discuss the irreducibility of polynomials and solvability of groups.

Course Code: 20PMC102

Course Name: REAL ANALYSIS

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

- CO1: explain and illustrate the concepts of real number system, basic topology, continuity, Differentiate ability integrability and sequence and series of functions
- CO2: demonstrate the limit process in sequences, series, differentiation and integration
- CO3: test the continuity, differentiability and Riemann integrability of functions
- CO4: evaluate Riemann integrals and limits of functions using ' Hospital's rule and to measure the length of a curve.
- CO5: develop specific examples of different kinds of sets and functions under specific conditions.

Course Code: 20PMC103

Course Name: DIFFERENTIAL EQUATIONS

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

- CO1: demonstrate ordinary and partial differential equations of various types and to know different types of solutions
- CO2: solve ordinary and partial differential equations using various methods such as power series, Cauchy's method and method of separation of variables
- CO3: analyze the solutions of ordinary and partial differential equations using various techniques
- CO4: determine the solutions of differential equations with initial and boundary conditions
- CO5: formulate ordinary and partial differential equations

Course Code: 20PMC205 Course Name: FIELD THEORY AND LINEAR ALGEBRA

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

- CO1: explain the concepts in linear algebra and role of fields in modern mathematics.
- CO2: identify normal extensions using splitting fields and matrices from linear transformations
- CO3: analyze the characteristics of field extension, finite field, matrices and linear transformations
- CO4: determine the solutions of certain equations in a finite field and examine the similarity of two nilpotent matrices
- CO5: construct a finite field with p^n elements and generate real quadratic forms.

Course Code: 20PMC206 Course Name: MULTIVARIABLE CALCULUS AND MEASURE THEORY

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

- CO1: understand the concepts of multivariable calculus, Lebesgue measure, Lebesgue integral and product measures
- CO2: prove standard theorems in measure theory and multivariable calculus
- CO3: characterize bounded linear functionals on spaces
- CO4: evaluate integrals with respect to Lebesgue measure and product measure
- CO5: construct measurable sets, non measurable sets and measurable functions

Course Code: 20PMC207 Course Name: COMPLEX ANALYSIS

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

- CO1: explain the concepts of complex analysis and their roles in modern Mathematics and applied contexts
- CO2: apply the techniques in complex theory to evaluate definite integrals and infinite series
- CO3: examine the conformality of arcs, analyticity of a function, local properties of an analytic function and different forms of Cauchy's theorem
- CO4: decide when and where a given function is analytic and to find its series and product development
- CO5: develop power series expansions and infinite products of analytic functions.

Course Code: 20PMC208

Course Name: MATHEMATICAL STATISTICS

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

- CO1: demonstrate the knowledge of probability and statistical distributions
- CO2: obtain the probability distributions of transformed variables and various parameters using special distributions
- CO3: analyze some inequalities like Markov's inequality, Jenson's inequality, independency for transformation of random vectors and relation between random variables using correlation coefficient
- CO4: estimate probability value using central limit theorem and bounds for the probability Chebyshev's inequality
- CO5: elaborate the concepts of probability in multivariate distribution

Course Code: 20PMC310

Course Name: TOPOLOGY

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

- CO1: comprehend dense subsets, open sets, closed sets, limit point and neighborhoods related to general topology.
- CO2: demonstrate the concept of metric spaces and compute topology from metrics.
- CO3: distinguish spaces by means of simple topological invariants namely, compactness, connectedness and the fundamental group
- CO4: demonstrate how a choice of distance determines shapes, and will discuss the main types of geometries
- CO5: develop intuition regarding proofs, make arguments based on logic

Course Code: 20PMC311

Course Name: FUNCTIONAL ANALYSIS

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

- CO1: learn the fundamentals of normed, Banach and Hilbert spaces
- CO2: prove standard theorems such as Hahn-Banach theorem, open mapping theorem, closed graph theorem, uniform boundedness theorem and spectral theorem
- CO3: analyze the behavior of linear operators on normed spaces
- CO4: determine dual of some well known spaces and evaluate spectrum of certain linear operators
- CO5: construct new Banach spaces from the given Banach spaces and normed spaces with the help of bounded linear operators

Course Code: 20PMC312**Course Name: GRAPH THEORY**

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

- CO1: understand the definitions and various parameters in graph theory
- CO2: prove standard theorems such as Whitney's theorem, Chavatal's theorem, Hall's Marriage theorem, Vizing's theorem and Euler's formula
- CO3: characterize bipartite, Eulerian, Hamiltonian and planar graphs
- CO4: determine the various parameters such as number of spanning trees, chromatic, independence, Ramsey numbers and domination numbers
- CO5: form closure of a graph and minimal dominating set for a graph

Course Code:20PMC414**Course Name: NUMBER THEORY**

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

- CO1: understand and work numerous problems and congruences
- CO2: solve the problems using the theory of congruences, Diophantine equations and theory of quadratic residues
- CO3: analyze the solutions of congruences, the existence of primitive roots and various forms of Diophantine equations
- CO4: determine the solutions of different number theoretic functions
- CO5: discuss the equivalent forms of the prime number theorems, the solution of system of linear congruences and solutions of linear Diophantine equations

Course Code: 20PMC415**Course Name: DIFFERENTIAL GEOMETRY**

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

- CO1: demonstrate the concepts in theory of curves and surfaces and know its roles in modern Mathematics
- CO2: apply appropriate space and surface equations to derive the different kinds of curvatures
- CO3: analyze the local intrinsic and non-intrinsic properties of a surface
- CO4: evaluate the curvatures, torsion, involutes, evolutes, isometric correspondence and geodesics of a space curve
- CO5: develop the theory of revolution generated surfaces and other specialized surfaces.

Course Code: 20PMC416

Course Name: MECHANICS

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

- CO1: understand the mathematical and physical principle behind the derivation of Lagrange's, Hamilton's Formalism and central force field
- CO2: prove standard theorems and results in mechanics
- CO3: distinguish the concept of the Lagrange's, Hamilton equations of motion and conservation theorems in various principles
- CO4: determine equation of motion using various techniques and orbit equation in the central force field
- CO5: formulate the differential equation for various concepts and solve this equation

Course Code: 20PMC417

Course Name: STOCHASTIC PROCESSES

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

- CO1: demonstrate the basic concepts of stochastic processes and their applications
- CO2: identify the applications of stochastic models in real life
- CO3: classify the states and chain of a process and analyze stationarity
- CO4: determine the higher transition probabilities and equilibrium probabilities of a chain and derive the renewal equation
- CO5: formulate simple stochastic process models in the time domain and provide qualitative and quantitative analyzes of such models

Course Code: 20PME101

Course Name: METHODS OF NUMERICAL ANALYSIS

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

- CO1: understand basics of numerical analysis
- CO2: apply numerical methods to obtain approximate solutions to mathematical problems
- CO3: analyse and evaluate the accuracy of common numerical methods
- CO4: obtain approximate solutions to intractable mathematical problems
- CO5: Derive numerical methods for various mathematical operations and tasks, such as interpolation, differentiation, integration, the solution of linear and nonlinear equations, and the solution of differential equations.

Course Code: 20PME102

Course Name: THEORY OF ENUMERATION

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

- CO1: remember the rules of sum and product of permutations and combinations.
- CO2: apply technique of generating functions and recurrence relations to solve combinatorial problems
- CO3: discuss the distribution of objects into distinct or non-distinct positions
- CO4: enumerate derangements using inclusion-exclusion principle and equivalence classes using Burnside theorem
- CO5: formulate generating functions, recurrence relations, rook polynomials and inventories of functions for the given problems.

Course Code: 20PMC20

Course Name: APPLICATIONS OF MATHEMATICS

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

- CO1: understand the theoretical foundations of differential equation, linear algebra, finance and operations research
- CO2: apply the concepts of pure mathematics in other branches and in some real life problems
- CO3: discuss the applications of mathematics and computational approaches in various fields
- CO4: evaluate the solution of differential, difference equations; estimate the term of an annuity and interest rate; schedule of sequence of jobs
- CO5: formulate models of natural phenomena using known mathematical techniques.

Course Code: 20PME304

Course Name: CRYPTOGRAPHY

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

- CO1: understand the basic concepts of number theory and cryptography
- CO2: apply various concepts of number theory in cryptographic systems
- CO3: compare and apply different encryption and decryption techniques to solve problems related to confidentiality and authentication
- CO4: evaluate the authentication and hash algorithms
- CO5: use the techniques of cryptography to achieve common security goals

Course Code: 20PME305

Course Name: OPERATIONS RESEARCH

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

- CO1: understand the concepts in linear, integer, dynamic and non-linear programming problems
- CO2: apply optimization techniques for solving equality and inequality constrained problems
- CO3: identify the optimization problem and solve by means of appropriate technique
- CO4: choose rational options in practical decision-making problems using standard LP techniques
- CO5: construct linear and non linear programming models and discuss their solutions.

Course Code: 20PMC104, 20PMC209, 20PMC313 and 20PMC418

Course Name: COMPREHENSION and *viva voce*

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

- CO1: understand and interpret the learned information
- CO2: apply the knowledge of vocabulary used in curriculum
- CO3: identify main idea in reading materials; books and other sources
- CO4: depict the level of understanding in the subject matter
- CO5: improve their confidence and inter-personal skills.

Course Code: 20PMC419

Course Name: INTERNSHIP

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

- CO1: remember the concepts of applied mathematics to get practical knowledge in industry / institutions
- CO2: apply mathematical skills to solve of problems of real world
- CO3: analyze and write logical arguments to prove mathematical concepts
- CO4: decide and use appropriate technology to simulate and visualize mathematical ideas
- CO5: formulate and apply mathematics to solve a broad spectrum of complex problems

Course Code: 20PMC420

Course Name: PROJECT and *viva voce*

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

- CO1: understand research oriented work to formulate a research problem and produce results based on its implementation
- CO2: apply research methods, techniques, and problem solving approaches from the field of research in which they are specializing
- CO3: analyze research papers published in the reputed journals
- CO4: evaluate relevant professional information reliably
- CO5: create new ideas and to face interview both at the academic and industrial sector

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



M.Sc Physics

**PROGRAMME SPECIFIC OUTCOMES
AND
COURSE OUTCOMES**

Programme Code: PGP04

Programme Name: M.Sc. (Physics)

Program Specific Outcomes

On successful completion of M.Sc., Physics programme, the students would have

PSO1: understood the concepts in Mathematical Physics, Thermodynamics and Statistical Physics, Group Theory, Classical Mechanics, Quantum Mechanics *etc.*,

PSO2: applied the knowledge gained in the core areas of Physics such as Electromagnetic Theory, Solid State Physics, Nuclear & Particle Physics *etc.*, for undertaking research in Physics

PSO3: solved problems in Electronics Industry through the knowledge gained from Electronics and Experimental Techniques and Industrial Electronics courses

PSO4: developed the skills to design and analyze analog and digital circuits for successful application in Electronic industries

PSO5: realized the importance of energy conservation and the protection of environment by mastering the courses such as Energy and Environmental Physics

PSO6: kept abreast of the recent developments in Physics for enhancing the core competencies

PSO7: acquired the core knowledge and skills to appear for competitive examinations such as CSIR-NET, SET, GATE, JEST *etc.*,

COURSE OUTCOMES

Course Code: 20PPC101

Course Name: MATHEMATICAL PHYSICS – I

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

- CO1: explain the basics of vectors, matrices and special functions
- CO2: identify the concepts with necessary arguments
- CO3: examine the appropriate methods to solve the specific problems
- CO4: evaluate the integrals, determinant of matrix and special functions
- CO5: adapt the methodologies to solve the problems in the applications of Physics

Course Code: 20PPC102

Course Name: CLASSICAL MECHANICS

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

- CO1: explain the basic concepts of classical mechanics
- CO2: apply the concepts of classical mechanics to simple systems
- CO3: examine the physical problems using the formulations viz., Lagrangian, Hamiltonian, Hamilton - Jacobi and small oscillations
- CO4: justify the Lagrangian and Hamiltonian approaches in classical mechanics
- CO5: discuss the transition from classical mechanics to quantum mechani

Course Code: 20PPC103

Course Name: THERMODYNAMICS AND STATISTICAL PHYSICS

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

- CO1: explain the basics of statistical thermodynamics
- CO2: apply the concepts of ensembles, phase space, thermodynamic probability and Gibb's phase rule to thermodynamic systems
- CO3: categorize the statistical distributions into canonical, micro canonical and grand canonical
- CO4: evaluate the thermodynamic parameters by finding partition functions
- CO5: discuss the phase transitions using the statistical concepts

Course Code: 20PPC104

Course Name: ANALOG ELECTRONICS LAB

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

- CO1: list the characteristics of operational amplifier and its applications
- CO2: construct and study sine wave, square wave and triangular wave generators
- CO3: design, construct and study the frequency response of filters
- CO4: modulate a carrier wave with a signal using amplitude modulation technique
- CO5: develop analog computation circuits to solve simultaneous equations

Course Code: 20PPC206

Course Name: MATHEMATICAL PHYSICS-II

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

- CO1: explain the basics of complex variables, tensors and differential equations
- CO2: apply the mathematical methods to solve simple problems
- CO3: analyze the complex functions, tensors and partial differential equations for their applicability to physical problems
- CO4: justify the need of tensors and differential equations to study the physical phenomena
- CO5: develop the mathematical equations for various physical problems and to solve them.

Course Code: 20PPC207

Course Name: QUANTUM MECHANICS-I

Upon completion of the course the students will be able to

- CO1: explain the origin of quantum mechanics and Schrodinger's formalism
- CO2: apply the Schrodinger's formalism to one dimensional and three dimensional systems
- CO3: inspect the state functions and their energy for correction
- CO4: evaluate the solutions of wave equations of simple and complex molecules using the theories of perturbation, variational and WKB methods.
- CO5: discuss the degeneracies of the system

Course Code: 20PPC208

Course Name: ELECTROMAGNETIC THEORY

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

- CO1: explain the fundamental concepts of electrostatics, magnetostatics and electrodynamics
- CO2: apply the laws of electromagnetic theory to physical systems
- CO3: compare the materials based on the electric and magnetic field theories
- CO4: interpret the propagation of electromagnetic waves and guided waves
- CO5: discuss the solutions of the problems in electromagnetism

Course Code: 20PPC209

Course Name: COMPUTATIONAL PHYSICS LAB

Upon completion of the course the students will be able to

- CO1: demonstrate the computational methods required to solve physical problems
- CO2: select suitable numerical method to solve a particular physical situation at hand
- CO3: compare the limitations of different numerical techniques in solving a particular physical problem
- CO4: determine the values of parameters in physical equations using different numerical techniques
- CO5: develop a numerical model for a given physical system

Course Code: 20PPC210

Course Name: DIGITAL ELECTRONICS LAB

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

- CO1: explain the working of various combinational circuits
- CO2: construct and study A/D and D/A converters
- CO3: investigate the action of sequential circuits
- CO4: interpret the different techniques to construct digital circuits
- CO5: design various combinational and sequential circuits

Course Code: 20PPC312

Course Name: QUANTUM MECHANICS-II

Upon completion of the course the students will be able to

- CO1: explain the matrix formalism of quantum mechanical problems and to solve them
- CO2: make use of the quantum mechanics to study the angular momentum and spin of the systems.
- CO3: examine the scattering and perturbation theories of different physical problems.
- CO4: appraise the elegance of quantum mechanical theories for both non-relativistic and relativistic cases
- CO5: discuss the quantum mechanics of the probability density of free and bounded particles based on the Dirac's formalism

Course Code: 20PPC313

Course Name: SOLID STATE PHYSICS – I

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

- CO1: recall fundamental types of lattices and identify different crystal structures
- CO2: classify different types of bonds in crystals
- CO3: analyze density of states using Debye and Einstein models
- CO4: estimate the electrical conductivity and thermal conductivity of metals
- CO5: discuss different zone schemes and orbit

Course Code: 20PPC314

Course Name: INDUSTRIAL ELECTRONICS

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

- CO1: recall the basic concepts of digital computer fundamentals
- CO2: apply basic concepts to write simple programs for the microcontroller 8051
- CO3: analyze the data transfer information through parallel and serial ports
- CO4: assess how different peripherals are interfaced with microcontroller
- CO5: program the 8051 timers to generate time delays

Course Code: 20PPC315

Course Name: MICROCONTROLLER LAB

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

- CO1: know the importance of interfacing circuits to the microcontroller
- CO2: interface analog to digital and digital to analog converters with microcontroller kit
- CO3: analyze the working of stepper motor control signal sequences
- CO4: write and execute assembly language programs using simulators for 8051
- CO5: develop observational skills and report writing

Course Code: 20PPC417

Course Name: SOLID STATE PHYSICS – II

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

- CO1: explain the theories of superconductivity, magnetism, dielectrics and defects.
- CO2: organize the materials based on their magnetic and dielectric properties.
- CO3: analyze the flux quantization, particle tunneling, susceptibility, polarizations, defects and dislocations
- CO4: calculate coherence length, critical magnetic field, dielectric constant and coercivity
- CO5: discuss the salient features of materials possessing superconductivity, dielectric and magnetic properties.

Course Code: 20PPC418

Course Name: NUCLEAR AND PARTICLE PHYSICS

Upon on completion of the course, the students will be able to

- CO1: explain liquid drop model and shell model of nucleus to study the structure and general properties of nucleus
- CO2: apply the nuclear models to study two body problem
- CO3: solve one dimensional potential barrier problem
- CO4: appraise the nuclear reactions and understand puzzles of nature
- CO5: discuss the origin and evolution of universe

Course Code: 20PPC419

Course Name: NANOSCIENCE

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

- CO1: classify the synthesizing techniques based on the states of matter
- CO2: make use of the available instruments to study the properties of nanomaterials
- CO3: assess the effect of grain sizes on various physical properties of nanomaterials
- CO4: interpret the results of physical and chemical properties measurements
- CO5: develop new materials for green energy and environmental applications

Course Code: 20PPC420

Course Name: GENERAL PHYSICS LAB

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

- CO1: familiarize with the experimental setup
- CO2: experiment with different parameters of materials
- CO3: analyze the results of the experiments
- CO4: estimate error in the calculated result
- CO5: elaborate the experimental procedures

Course Code: 20PPE101

Course Name: APPLICATIONS OF GROUP THEORY

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

- CO1: explain the fundamentals of group theory of Hilbert spaces and representation
- CO2: apply the group theory concepts to quantum mechanics and solid state physics
- CO3: analyze the concept of Discrete and Continuous groups to physics problems, which is a pre-requisite for deeper understanding of crystallography, particle physics, quantum mechanics and energy bands in solids
- CO4: assess the results of the evaluated problems such as splitting of energy levels under magnetic field, multipole transitions etc.,
- CO5: discuss the crystallographic symmetries using group theory

Course Code: 20PPE102

Course Name: ELECTRONICS AND EXPERIMENTAL TECHNIQUES

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

- CO1: explain the working principle of operational amplifiers and various diodes
- CO2: experiment with operational amplifiers to construct arithmetic and logic circuits
- CO3: analyze linear and non-linear analog systems
- CO4: determine the functions of various types of op-amps, memory, registers and counters
- CO5: construct logic circuits, registers and counters

Course Code: 20PPE203

Course Name: GREEN ENERGY

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

- CO1: define the various renewable energy sources
- CO2: model the different non-conventional type of power generation
- CO3: analyze the need and role of non-conventional energy sources particularly when the conventional sources are scarce in nature
- CO4: interpret the different energy conversion methods and its applications
- CO5: adapt engineering techniques to explain power generations using solar, wind, ocean, biomass and geothermal energy

Course Code: 20PPE304 Course Name: ENERGY AND ENVIRONMENTAL PHYSICS

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

- CO1: outline the environmental problems and issues at their place
- CO2: make use of the available resources to protect their environment
- CO3: conclude the factors responsible for the environmental problems
- CO4: assess the possibilities to install solar devices to protect environment
- CO5: improve utilization of alternate energy storage sources for better life

Course Code: 20PPE305 Course Name: MOLECULAR SPECTROSCOPY

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

- CO1: explain the basics of spectroscopy
- CO2: identify the spectral lines of rotational, vibrational, Raman, NMR ,ESR, Mossbauer and the splitting of spectral lines under the external fields
- CO3: examine the materials using different types of spectroscopic methods
- CO4: determine the structure of molecules by applying the spectroscopic concepts
- CO5: discuss the applications of different spectroscopic methods in research fields

Course Code: 20PPC105, 20PPC211, 20PPC316 and 20PPC421

Course Name: COMPREHENSION AND *viva voce*

Upon completion of the course, the student will be able to

- CO1: recall the basic physical concepts
- CO2: apply the empirical relations to solve problems
- CO3: examine the conceptual description of physical phenomenon
- CO4: defend their own and their peers questions using background knowledge
- CO5: develop skills in observation, interpretation, reasoning, predicting and communicating the learnt concepts.

Course Code: 20PPC422

Course Name: INTERNSHIP

Upon completion of the course, the student will be able to

- CO1: find the industry / institution for his/her career
- CO2: make use of the job opportunities in industry / institution
- CO3: drive his passion towards self-employment
- CO4: appraise the importance of employment and his / her employability
- CO5: develop as entrepreneur on the basis of their programme

Course Code: 20PPC423

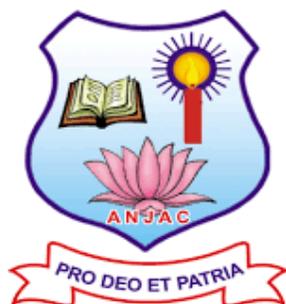
Course Name: PROJECT AND *viva voce*

Upon completion of the course the students will be able to

- CO1: relate the physical, chemical and mathematical concepts with the innovative parts in the project
- CO2: make use of the research methodologies
- CO3: examine the factors responsible for the results arrived at the project work
- CO4: justify the procedures to carry out the experimental and the theoretical work
- CO5: elaborate the project work done without plagiarism

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



M.Sc Chemistry

**PROGRAMME SPECIFIC OUTCOMES
AND
COURSE OUTCOMES**

Programme Code: PGC05

Programme Name: M.Sc. (Chemistry)

PROGRAM SPECIFIC OUTCOMES

On successful completion of M.Sc. Chemistry programme, the students would have

- PSO 1:** gathered comprehensive theoretical and practical knowledge in chemistry
- PSO 2:** acquired the ability to express the advanced concepts in chemistry effectively
- PSO 3:** equipped themselves to analyze the compounds qualitatively and quantitatively by spectroscopy and microscopy techniques
- PSO 4:** developed the confidence to pursue research in thrust areas of Chemistry
- PSO 5:** adopted the principles of green chemistry for designing experimental techniques to mitigate environmental pollution
- PSO 6:** equipped themselves to act as a team member/leader in Research & Development laboratories and industries
- PSO 7:** trained themselves to confidently appear for competitive examinations such as NET, GATE, SET, UPSC, TNPSC, BARC, ONGC *etc.*, and also to become entrepreneur

#

COURSE OUTCOMES

Course Code: 20PCC101

Course Name: BIO-ORGANIC AND GREEN CHEMISTRY

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

- CO1: explain the preparation, properties of heterocyclic compounds, basic concepts of greenchemistry and aromaticity
- CO2: apply the knowledge of green chemistry and electronic effects in organic synthesis
- CO3: examine the concepts in retrosynthesis and protecting groups in organic synthesis
- CO4: determine the structure of vitamins
- CO5: discuss the structural elucidation of flavonoids and biosynthesis of flavonoids.

Course Code: 20PCC102

Course Name: THEORETICAL INORGANIC CHEMISTRY

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

- CO1: explain the theories of chemical bonding, acid-base, structures of cage, ring and cluster compounds
- CO2: make use of the knowledge of MOT to various molecules and electrode potential in redox system
- CO3: compare the properties of silicates, polyacids, metal clusters, solvents and rare earth elements
- CO4: determine the term symbols and study the reactions in non-aqueous solvents
- CO5: discuss the structure of boranes and carboranes.

Course Code: 20PCC103

Course Name: THERMODYNAMICS AND APPLICATIONS OF QUANTUM CHEMISTRY- I

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

- CO1 explain the basic concept of thermodynamics quantum mechanics
- CO2: apply the LeChatelier and Braun principle to equilibrium reactions
- CO3: compare the significance of different distribution laws and examine phase diagram of three component systems
- CO4: determine the fugacity and activity of gases and heat capacity of solids at low temperatures
- CO5: set up and solve the Schrodinger Wave equation of simple quantum mechanical systems.

Course Code: 20PCC104**Course Name: PRACTICAL – I (COMPLEXOMETRIC ESTIMATION AND SEMI-MICROQUALITATIVE ANALYSIS)**

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

- CO1: explain the basic principle of complexometric estimation and semimicroqualitative analysis
- CO2: apply the complexometric principle for the estimation of binary and ternary mixtures of cations
- CO3: analyze inorganic salt mixture containing familiar and less familiar cations
- CO4: choose the colorimetric technique for the estimation of cations
- CO5: design the experiment for the estimation of various metal ions using EDTA.

Course Code: 20PCC206**Course Name: SPECTROSCOPY AND STEREOCHEMISTRY**

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

- CO1: explain the basic principles of UV, IR, NMR spectroscopy and Mass spectrometry
- CO2: make use of concepts of stereochemistry in organic synthesis
- CO3: examine the conformation and fragmentation pattern of organic compounds
- CO4: determine the structure of organic compounds by using UV, IR, ¹H-NMR, ¹³C-NMR and mass spectral data
- CO5: discuss the structural elucidation of terpenoids.

Course Code: 20PCC207**Course Name: ELECTRONIC AND RESONANCE SPECTROSCOPY**

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

- CO1: explain the theories of M-L bonding and the properties of metal complexes
- CO2: apply the spectral knowledge for the structural determination of inorganic compounds
- CO3: analyze and identify the compounds using EPR, NMR, ORD and CD spectra
- CO4: appraise the structure and bonding of π -complexes
- CO5: discuss the magnetic and electronic spectra of metal complexes.

Course Code: 20PCC208**Course Name: CHEMICAL KINETICS AND APPLICATIONS OF QUANTUM CHEMISTRY - II**

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

- CO1: summarize the theories of quantum chemistry and chemical kinetics
- CO2: apply the various approximation methods to H and He atoms
- CO3: deduce the relationship between partition function and thermodynamic functions
- CO4: determine the mechanisms and rate constant of chemical reactions
- CO5: construct Schrodinger wave equation for hybrid and molecular orbitals.

Course Code: 20PCC209

Course Name: PRACTICAL – II (QUALITATIVE ORGANIC ANALYSIS)

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

- CO1: demonstrate the separation of organic compounds from the given mixture
- CO2: apply different chromatographic techniques for separation of organic compounds
- CO3: analyse various functional groups present in the organic compounds
- CO4: interpret the IR and NMR spectra of organic compounds
- CO5: develop the skill to operate UV-visible spectrophotometer.

Course Code: 20PCC210

Course Name: PRACTICAL – III (PHYSICAL CHEMISTRY)

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

- CO1: explain the basic principles of electrochemistry and non-electrochemistry experiments
- CO2: apply the principle to carryout physical chemistry experiments
- CO3: analyse the data of the experiments
- CO4: interpret the result of the experiments
- CO5: design physical chemistry related experiments.

Course Code: 20PCC312

Course Name: REACTION MECHANISMS AND PERICYCLIC REACTIONS

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

- CO1: explain the nucleophilic, electrophilic substitution reactions and pericyclic reactions
- CO2: apply Hofmann rule, Saytzeff rule and Woodward-Hofmann rule for organic reactions
- CO3: compare S_N1 and S_N2 reactions, E1 and E2 reactions
- CO4: determine the structure of alkaloids and antibiotics
- CO5: construct the correlation diagram for electrocyclic reactions and cycloaddition reactions.

Course Code: 20PCC313

Course Name: BIO-INORGANIC CHEMISTRY, PES AND MB SPECTROSCOPY

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

- CO1: summarize the inorganic chemistry of life and theories of Photoelectron and Mössbauer spectroscopy
- CO2: make use of metal complexes in the industrially important reactions and to study the kinetics of substitution reactions
- CO3: contrast the significance of porphyrin ring system, copper containing proteins, essential trace elements, vitamins and enzymes
- CO4: interpret the Photoelectron and Mössbauer spectra of inorganic species
- CO5: develop the mechanism of industrially important inorganic reactions, ligand substitution reactions and ion/electron transport in biological system.

Course Code: 20PCC314

Course Name: GROUP THEORY AND MOLECULAR SPECTROSCOPY

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

- CO1: explain the principles of group theory and molecular spectroscopy
- CO2: apply the spectroscopic principles to elucidate the structure of molecules
- CO3: infer the relationship between molecular symmetry and spectroscopy
- CO4: appreciate the importance of NMR spectroscopy in various fields
- CO5: develop and discuss the physical meaning of the irreducible representation character table.

Course Code: 20PCC315

Course Name: PRACTICAL – IV (ORGANIC PREPARATION AND ESTIMATION)

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

- CO1: demonstrate the preparation of organic compounds
- CO2: apply the green chemistry principles in organic synthesis
- CO3: inspect suitable solvent for crystallization of organic compounds
- CO4: determine the amount of organic compounds by volumetric method
- CO5: estimate the organic compound by using UV-visible spectrophotometer.

Course Code: 20PCC417

Course Name: REAGENTS AND NATURAL PRODUCTS

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

- CO1: explain the molecular rearrangement, reduction, oxidation reactions and photochemical reactions
- CO2: make use of various reagents in organic synthesis
- CO3: inspect the mechanism involved in the reductions, oxidations and molecular rearrangements
- CO4: determine the structural elucidation of steroids
- CO5: discuss the various photochemical reactions of organic molecules.

Course Code: 20PCC418**Course Name: NUCLEAR CHEMISTRY AND THERMOANALYTICAL METHODS**

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

- CO1: explain the properties of radioactive nucleus and demonstrate thermoanalytical methods
- CO2: apply the knowledge of nuclear reactions in its applications
- CO3: analyze the types of errors and metal ions using spectral methods
- CO4: appraise the applications of radioactive isotopes and elemental analysis
- CO5: create methodology for thermoanalytical methods and determination of errors.

Course Code: 20PCC419**Course Name: ADVANCED ELECTROCHEMISTRY AND PHOTOCHEMISTRY**

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

- CO1: explain the theories of conductance and Jablonski diagram
- CO2: apply the knowledge of electrochemistry understanding the principle of batteries and fuel Cells
- CO3: compare the salient features of models of electrical double layer.
- CO4: appreciate the importance of electroanalytical techniques and radiation chemistry
- CO5: determine the surface area of adsorbants using BET adsorption isotherm.

Course Code: 20PCC420**Course Name: PRACTICAL - V (GRAVIMETRIC ESTIMATION AND INORGANIC COMPLEX PREPARATION)**

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

- CO1: illustrate the principles involved in the preparation of inorganic complexes and gravimetric estimation
- CO2: apply the separation techniques of metal ions
- CO3: examine the magnetic spectral properties of the complexes
- CO4: estimate of the ions present in a ternary mixture of cations
- CO5: design the experiment to estimate both bivalent and trivalent metal ions by gravimetrically.

Course Code: 20PCE101**Course Name: BIOMOLECULES**

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

- CO1: explain the properties of amino acid and biological applications of enzymes, vitamins, lipids and flavonoids
- CO2: apply the Smith degradation and Kiliani synthesis to find out the position of linkage in polysaccharides and the configuration of monosaccharides
- CO3: differentiate ATP from ADP, Cellulose from starch and DNA from RNA
- CO4: determine the structure of nucleic acids, disaccharides, polysaccharides and alkaloids
- CO5: discuss the carbohydrate metabolism and structure of proteins.

Course Code: 20PCE102**Course Name: PHARMACEUTICAL CHEMISTRY**

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

- CO1: explain the general pharmacology of drugs and the nature of drugs
- CO2: identify the symptoms and applications of biochemical and homeopathic remedies
- CO3: compare the clinical uses of anticancer, anti-diabetic and homeopathy medicine
- CO4: estimate the amount of haemoglobin, glucose and serum cholesterol by various methods
- CO5: develop the gained knowledge to design drugs in pharmaceutical industries.

Course Code: 20PCE203**Course Name: APPLIED CHEMISTRY**

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

- CO1: explain the types of corrosion, alloys and catalysts
- CO2: identify the raw materials for the manufacture of ceramic powder, paints and polymers
- CO3: analyze the quality of industrial products with acquired knowledge
- CO4: realize the importance of chemistry in the field of corrosion, metallurgy and petroleum
- CO5: establish paint, enamels, lacquers, varnish and polymer based small scale industries

Course Code: 20PCE304**Course Name: MACRO - AND SUPRA- MOLECULAR SCIENCE**

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

- CO1: name the polymers by IUPAC nomenclature
- CO2: sort out the properties of polymers
- CO3: contrast the applications of functional polymers and supramolecules
- CO4: appraise the interactions in supramolecules
- CO5: predict the molecular weight of polymers by different methods.

Course Code: 20PCE305**Course Name: SOFTWARE FOR CHEMICAL SCIENCES**

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

- CO1: demonstrate executable VISUAL BASIC programme
- CO2: make use of CHEMDRAW ULTRA 12.0 to draw chemical structure
- CO3: analyze data and graphical manipulation using ORIGIN software
- CO4: determine molecular database and structural elucidation
- CO5: develop skill on application oriented chemistry softwares

Course Code: 20PCC105, 20PCC211, 20PCC316 and 20PCC421

Course Name: COMPREHENSION AND *viva voce*

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

- CO1: explain the concepts of organic, inorganic and physical chemistry
- CO2: solve the problems related to organic, inorganic and physical chemistry
- CO3: identify the appropriate answers for the multiple choice questions through online
- CO4: defend the questions in *viva voce* examination
- CO5: improve their confidence level to attend interview and group discussion.

Course Code: 20PCC422

Course Name: INTERNSHIP

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

- CO1: choose appropriate industry or institution with the gained theoretical knowledge
- CO2: apply the experimental techniques to solve the problems / environmental issues
- CO3: analyse the quality of samples
- CO4: estimate the cost of production of materials in large scale
- CO5: develop their entrepreneurial skills

Course Code: 20PCC423

Course Name: PROJECT AND *viva voce*

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

- CO1: explain the experiments in connection with the projects undertaken
- CO2: plan for literature survey, experimental work and documentation of results
- CO3: analyze the compounds using instruments effectively and independently
- CO4: defend the questions in *viva voce* examination
- CO5: develop the thrust areas of research like organic synthesis, green chemistry, environmental science, nanochemistry, polymer chemistry and electrochemistry.

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



M.Sc Botany

**PROGRAMME SPECIFIC OUTCOMES
AND
COURSE OUTCOMES**

Programme Code: PGB06

Programme Name: M.Sc. (Botany)

Program Specific Outcomes

On successful completion of M.Sc. Degree Programme in Botany, the students would have

PSO 1: understood the diversity of plants in relation to their classification, nomenclature and taxonomy

PSO2: acquired the domain knowledge and skills to identify the plants and investigate their relationship with microbes

PSO3: developed the expertise in conducting experiments in the areas of Ecology, Plant Physiology, Biochemistry and Plant Biotechnology for arriving at logical solutions to the problems faced by the human society

PSO4: developed the ability to pursue research and get opportunities in Research & Development Organizations and Industries related to the botanical world

PSO5: gained the knowledge and skill to tap the economic potential of Plant Science to become a successful bio-entrepreneur

PSO6: examined the issues faced by the environment and found solutions to ultimately arrive at sustainable development through the facets of botany

PSO7: acquired the core knowledge and wisdom to appear for competitive examinations such as NET, GATE, SET and TNPSC and UPSC for their career development

COURSE OUTCOMES

Course Code: 20PBC101

Course Name: PLANT DIVERSITY - I

Upon Completion of the Course, the students will be able to

- CO1: outline and illustrate the types of thallophytes
- CO2: demonstrate the vegetative and reproductive structure of thallophytes
- CO3: examine the spore dispersal mechanism in fungi
- CO4: assess the evolution of sporophytes and gametophytes of thallophytes
- CO5: develop protocols for the cultivation of fresh water and marine algae

Course Code: 20PBC102

Course Name: PLANT DIVERSITY - II

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

- CO1: summarize the general features of Pteridophytes and Gymnosperms
- CO2: illustrate the structure and reproduction of Pteridophytes and Gymnosperms
- CO3: analyze the theories relating to the origin of sporophylls in Pteridophytes and examine the importance of seed habit
- CO4: trace the developmental stages of gametophytes of Gymnosperms
- CO5: compile the geological era and elaborate the features of fossil Gymnosperms

Course Code: 20PBC103

Course Name: CELL BIOLOGY AND GENETICS

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

- CO1: summarize the Mendel's Law of inheritance, modifications and chromosomal aberrations
- CO2: organize the functions of membrane transport system
- CO3: analyze the role of cyclin and cyclin dependent kinase in cell mechanics
- CO4: evaluate the eukaryotic gene architecture and assess DNA repair mechanism
- CO5: discuss the mechanism of gene regulation

Course Code: 20PBC104

Course Name: PRACTICAL - I (PLANT DIVERSITY- I & II)

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

- CO1 : illustrate the vegetative and reproductive structure of bryophytes, pteridophytes and gymnosperms
- CO2 : spell out the structure of fossil plants
- CO3 : examine the vegetative and reproductive structure of micro and macro algae
- CO4 : analyze the vegetative and reproductive structure of fungi
- CO5 : identify the characters of Pteridophytes and Gymnosperms

Course Code: 20PBC206**Course Name: ANGIOSPERM TAXONOMY**

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

- CO1 : recall the morphology and the history of plant systematics
- CO2 : experiment with the morphological characters thereby identifying and solving the phylogeny of plants
- CO3 : examine the distinguishing features of monocotyledons
- CO4 : assign names to unknown plants using numerical taxonomy
- CO5 : develop e- flora, monograph and construct cladogram for the given set of plants

Course Code: 20PBC207**Course Name: PLANT ANATOMY AND EMBRYOLOGY**

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

- CO1 : outline the classification of meristematic tissues
- CO2 : identify the developmental stages of gametes
- CO3 : analyze the vascular differentiation of root, stem and leaf
- CO4 : assess the types of wood with physical and mechanical properties
- CO5 : discuss the types of endosperm and polyembryony

Course Code: 20PBC208 -**Course Name: MICROBIOLOGY AND PLANT PATHOLOGY**

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

- CO1: outline the classification of bacteria and plant viruses
- CO2: categorize the properties and life cycle of bacteria and viruses
- CO3: classify plant pathogens based on their causal agents and symptoms
- CO4: determine the symptoms, disease cycle and control measures of plant diseases
- CO5: elaborate the microbial flora of spoiled foods, potable and polluted water

Course Code: 20PBC209**Course Name: PRACTICAL – II (ANGIOSPERM TAXONOMY & PLANT ANATOMY AND EMBRYOLOGY)**

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

- CO1 : explain the anatomical and anomalous features of mono and dicot plants
- CO2 : identify and classify the higher plants using dichotomous key
- CO3 : examine the distinguishing features of monocotyledons
- CO4 : assess the nature and characteristics of wood
- CO5 : create virtual herbaria

Course Code: 20PBC210

**Course Name: PRACTICAL - III
(MICROBIOLOGY AND PLANT PATHOLOGY)**

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

- CO1 : explain the qualitative analysis of microbes of soil, air and water
- CO2 : identify the causal organism of diseases by its symptoms
- CO3 : classify the plant pathogens on the basis of their symptoms and life cycle
- CO4 : appraise the pure culture techniques and interpret the quality of milk
- CO5 : design the layout of a microbiology laboratory

Course Code: 20PBC312

Course Name: PLANT PHYSIOLOGY

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

- CO1: spell out the chemical reactions of C3, C4 and CAM pathway
- CO2: classify the types of stomata and mechanism of transpiration
- CO3: analyze the mechanism of Biological clock and circadian rhythm
- CO4: assess the role of hormones, phytochromes and cryptochromes in plant growth
- CO5: discuss the methods of delaying Programmed Cell Death

Course Code: 20PBC313

Course Name: PLANT BIOCHEMISTRY

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

- CO1: outline the metabolism and biosynthesis of aminoacids and proteins
- CO2: examine the metabolism of lipids
- CO3: Compare and contrast the types of enzymes, proteins, aminoacids and lipids
- CO4: decode the synthesis of secondary metabolites
- CO5: elaborate the mechanism of protein synthesis and its regulation

Course Code: 20PBC314

Course Name: RESEARCH METHODOLOGY

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

- CO1 : summarize the general laboratory practices and key research areas
- CO2 : identify the area of research and to extend the methodology
- CO3 : analyze the techniques used to solve the research problem
- CO4 : interpret the data
- CO5 : design a research problem

Course Code: 20PBC315

**Course Name: PRACTICAL – IV
(PLANT PHYSIOLOGY & PLANT BIOCHEMISTRY)**

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

- CO 1: find out the role of physico-chemical properties of water in plant growth and development
- CO 2: demonstrate the photosynthetic activities in higher plants
- CO 3: analyze the methods of determining the enzyme activity in plant materials
- CO 4: assess the plant macromolecules in terms of qualitative and quantitative attributes using biochemical techniques
- CO 5: estimate the enzymes in plants

Course Code: 20PBC417

Course Name: PLANT ECOLOGY

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

- CO1 : relate the biotic and abiotic factors relevant to different ecosystems
- CO2 : apply Clementsian units of vegetation to study plant succession
- CO3 : compare and contrast aquatic and terrestrial ecosystems
- CO4 : estimate the productivity of the aquatic ecosystem
- CO5 : compile the composition of the vegetation of a particular area using quadrat method

Course Code: 20PBC418

Course Name: PLANT BIOTECHNOLOGY

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

- CO 1: illustrate the principles of Genetic engineering and spell out the role of enzymes and vectors in Genetic engineering
- CO 2: apply the knowledge of tissue culture in plant propagation
- CO 3: analyze the methods of gene transfer and gene sequencing
- CO 4: assess the uses of transgenic plants
- CO 5: design suitable protocol for the transfer of desired genes in plants

Course Code: 20PBC419

Course Name: PLANT SIGNALLING AND BEHAVIOUR

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

- CO1 : relate the concept of signalling to the growth and development of plants
- CO2 : make use of UV-B and hormones in plant growth and defense
- CO3 : analyse the role of intercellular signalling in floral development
- CO4 : deduce the effect of Salicylic acid and Jasmonic acid in plant defense
- CO5 : compile the role of signalling molecules in plant growth and development

Course Code: 20PBC420

**Course Name: PRACTICAL - V
(PLANT ECOLOGY AND PLANT BIOTECHNOLOGY)**

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

- CO 1: apply the methods of studying vegetation to determine their composition
- CO 2: demonstrate plant tissue culture techniques
- CO 3: examine the quality of soil and water
- CO 4: determine minimum size of the quadrat and interpret the dominant and abundant species
- CO 5: design phytograph and IVI for a given vegetation

Course Code: 20PBE101

Course Name: HERBAL DRUGS AND NANOMATERIALS

Upon Completion of the course, the students will be able to

- CO1: illustrate plants as sources of drug in traditional systems of medicine
- CO2: experiment with the different parts of plants and identify the drugs
- CO3: classify the drugs based on their morphology and pharmacology
- CO4: Determine the type of plant metabolites using chromatography, XRD, SEM, TEM, AFM and STM
- CO5: develop and design the phytochemical screening protocol for unexplored plants

Course Code: 20PBE102

Course Name: ENTREPRENEURIAL BOTANY

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

- CO1: learn seed production, cultivation of algae and horticultural plants
- CO2: categorize the methods of production of biofertilizers and volatile oils
- CO3: compare and contrast the cultivation practices of floriculture and olericulture
- CO4: evaluate the different seed processing techniques and interpret its importance
- CO5: develop protocol for the preparation of organic manures

Course Code: 20PBE203

Course Name: PLANT RESOURCES AND UTILIZATION

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

- CO1: summarize the morphology of plants of economic value
- CO2: experiment with the different parts of plants and identify their economic potential
- CO3: classify the plants based on their sources
- CO4: deduce the applications of beverage plants
- CO5: realize the application of plants in terms of food, beverage, oils and energy

Course Code: 20PBE304

Course Name: BIODIVERSITY

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

- CO1: understand the concept, types and values of Biodiversity
- CO2: spell out the distribution of biodiversity of wild and cultivated plant species
- CO3: assess the types of vegetation
- CO4: appraise the strategies of conservation of biodiversity
- CO5: discuss the management of biodiversity and role of biotechnology in biodiversity conservation

Course Code: 20PBE305

Course Name: BIOPHYSICS AND BIOSTATISTICS

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

- CO1: relate the law of thermodynamics to the mechanism of oxidative phosphorylation
- CO2: categorize the types of sampling techniques, data representation and correlation
- CO3: analyze the data using MS-Excel and SPSS
- CO4: interpret the data using diagrammatic and graphical representations
- CO5: adapt a suitable test of significance for the data

Course Code: 20PBC105, 20PBC211, 20PBC316 and 20PBC421

Course Name: COMPREHENSION AND *viva voce*

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

- CO 1: define the relationships between the plants and their living habitats
- CO 2: make use of the plant resources in the day today life of human beings
- CO 3: classify the plants based on their morphology
- CO 4: defend the questions in *viva voce* examination
- CO 5: improve their confidence level to attend interview and group discussion

Course Code: 20PBC422

Course Name: INTERNSHIP

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

- CO 1: find out the role of botanists in different industries
- CO 2: identify the job avenues in plant sciences
- CO 3: understand the economic potential of botanical wealth
- CO 4: assess the quality of phytochemical constituents of plants
- CO 5: explore the thrust areas of research in Botany

Course Code: 20PBC423

Course Name: PROJECT AND *viva voce*

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

CO 1: choose a research problem to address the issues of the society

CO 2: demonstrate the ability to design a research problem

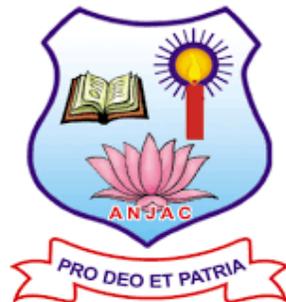
CO 3: analyze the results that he/she obtained from his/her research

CO4: interpret his/her research findings in a scientific manner

CO5: elaborate the outcome of those findings to find solutions to the real world problems

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



M.Sc Zoology

**PROGRAMME SPECIFIC OUTCOMES
AND
COURSE OUTCOMES**

Programme Code: PGZ07

Programme Name: M.Sc. (Zoology)

Program Specific Outcomes

On successful completion of M.Sc., Zoology programme, the students would have

PSO 1 : acquired the domain knowledge to recognize the relationship between animals and their physiological functions

PSO 2 : equipped themselves to comprehend the knowledge at molecular level and applied research-based skills

PSO 3 : identified the environmental issues and applied appropriate techniques to mitigate such issues

PSO 4 : engaged in lifelong learning independently for continual development to improve knowledge and core competency as researchers

PSO 5 : analysed and understood the ethical aspects involved in usage of animals in laboratory experiments and research for achieving the goal of conservation of organisms for future

PSO 6 : developed the entrepreneurial skills for mass practice of applied aspects of Zoology and communication skills for marketing of products

PSO 7 : acquired the knowledge and skills required for clearing competitive examinations such as NET, GATE, SET, TNPSC, UPSC etc.

COURSE OUTCOMES

Course Code: 20PZC101

Course Name: ANIMAL DIVERSITY

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

- CO1: explain the features of major phyla of animal kingdom
- CO2: identify various common animals using salient features
- CO3: classify the levels of animal organization
- CO4: assess the general and specific behavior of various animals
- CO5: discuss the adaptive mechanisms in various animals

Course Code: 20PZC102

Course Name: BIOCHEMISTRY

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

- CO1: summarize the structure and functions of biomolecules
- CO2: apply the acquired knowledge on enzymes and vitamins
- CO3: analyze the sequential reactions of metabolism
- CO4: assess the clinical significance of macromolecules
- CO5: discuss the synthesis and degradation of macronutrients

Course Code: 20PZC103

Course Name: CELL BIOLOGY

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

- CO1: relate the ultrastructure and functions of cellular organelles
- CO2: identify the significance of cellular organelles in eukaryotic cells
- CO3: analyse the structure and functions of nuclear materials
- CO4: interpret the modifications of cellular structures
- CO5: discuss the basic need of molecular biology.

Course Code: 20PZC104

Course name: PRACTICAL - I

(ANIMAL DIVERSITY, BIOCHEMISTRY AND CELL BIOLOGY)

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

- CO1: illustrate the structure of various animals from different phyla
- CO2: identify the spotters/specimens using their external features
- CO3: analyse the structure of animal cells and tissues using squash technique
- CO4: estimate the biochemical constituents from various animal tissue
- CO5: design an experiment to measure the quantity of macromolecules

Course Code: 20PZC206

Course Name: ANIMAL PHYSIOLOGY

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

- CO1: summarize the structure and functions of various systems of human
- CO2: identify the mechanisms involved in thermo and osmoregulations in animals
- CO3: analyse the structure and functions of photo and phono receptors
- CO4: determine the types of biological rhythm in human behaviour
- CO5: compile the knowledge on cardiac cycle and blood pressure.

Course Code: 20PZC207

Course Name: BASIC MICROBIOLOGY

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

- CO1: infer the microbial significance in environment
- CO2: identify the microbes based on their salient features
- CO3: categorize the control measures of different pathogen
- CO4: interpret the role of microbes in industrial products
- CO5: develop the knowledge on agricultural use of microbes

Course Code: 20PZC208

Course Name: IMMUNOLOGY

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

- CO1: explain the structure of lymphoid organs
- CO2: apply the knowledge of antigen-antibody reaction for the diagnosis of diseases
- CO3: categorize the hypersensitivity and autoimmune diseases
- CO4: interpret the mechanisms involved in humoral and cell mediated immunity
- CO5: discuss the knowledge of handling the laboratory animals to excel in research.

Course Code: 20PZC209

Course Name: PRACTICAL – II (ANIMAL PHYSIOLOGY)

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

- CO1: explain the basic principles of physiological mechanisms
- CO2: apply theoretical knowledge to study the physiological activities of fishes
- CO3: analyze the clinical importance of blood and urine
- CO4: determine the blood related parameters in man
- CO5: design an experiment to know the mechanism of biological clock in human.

Course Code: 20PZC210

**Course Name: PRACTICAL - III
(BASIC MICROBIOLOGY AND IMMUNOLOGY)**

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

- CO1: summarize various types of sterilization methods for microbial culture
- CO2: apply appropriate technique for isolation and characterization of microbes
- CO3: analyse the role of lymphoid organs in chicken
- CO4: evaluate the antimicrobial activity
- CO5: elaborate the antigen-antibody reaction using agglutination test.

Course Code: 20PZC312

Course Name: GENETICS AND BIostatISTICS

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

- CO1: illustrate the reasons behind the Mendelian principles, sex determination and chromosomal aberration and statistical analysis
- CO2: identify the role of gene frequency in different populations.
- CO3: compare the different biological parameters using statistical tools
- CO4: interpret the effect of changes in the chromosomes
- CO5: formulate the statistical tools for biological research data analysis

Course Code: 20PZC313

Course Name: EMBRYOLOGY AND ENDOCRINOLOGY

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

- CO1: explain the concepts of endocrinology
- CO2: categorize various steps of embryological development
- CO3: classify the embryological events in animal life
- CO4: assess the role of hormones and their related disorders
- CO5: discuss the mechanism of action of hormones in animal activities.

Course Code: 20PZC314

Course Name: GENERAL BIOTECHNOLOGY

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

- CO1: define the role of enzymes and vectors in rDNA technology
- CO2: identify the steps involved in animal and plant tissue culture
- CO3: analyze the rDNA principles to solving an environmental problems
- CO4: assess the advances in genomics and proteomics
- CO5: develop a new byproduct using advanced rDNA techniques

Course Code: 20PZC315

Course Name: PRACTICAL – IV

(GENETICS AND BIOSTATISTICS, EMBRYOLOGY AND ENDOCRINOLOGY AND GENERAL BIOTECHNOLOGY)

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

CO1: summarize the simple Mendelian concept of gene expressions using beads

CO2: make use of perform correlation and regression analysis during research.

CO3: analyze the sequential developmental stage of an animal

CO4: determine the effect of hormones and disorders of human beings

CO5: discuss various techniques of biotechnology

Course Code: 20PZC417

Course Name: ECOLOGY AND TOXICOLOGY

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

CO1: define the importance and progression of ecological system

CO2: apply ecological principles to understand the population ecology

CO3: examine the dynamics of ecosystem

CO4: evaluate the causes and impacts of environmental hazards

CO5: discuss the impact of toxicity and toxicodynamics

Course Code: 20PZC418

Course Name: GENERAL AND APPLIED ENTOMOLOGY

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

CO1: list out the features to classify the insects

CO2: apply the knowledge on beneficial and harmful aspects of insects

CO3: analyze the various physiological systems of insects

CO4: assess the economic threshold level and pest management

CO5: elaborate the economic importance of insects and bio-control.

Course Code: 20PZC419

Course Name: EVOLUTION AND ANIMAL BEHAVIOUR

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

CO1: explain the mechanism of origin of life

CO2: apply the biological variations and levels of evolution

CO3: interpret the rates of evolution and geological time scale

CO4: evaluate the animal extinction and fossils

CO5: compile the principles and classification of animal behaviour.

Course Code: 20PZC420

Course Name: PRACTICAL – V

(ECOLOGY AND TOXICOLOGY, GENERAL AND APPLIED ENTOMOLOGY AND EVOLUTION AND ANIMAL BEHAVIOUR)

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

- CO1: extend the various beneficial and harmful insects
- CO2: identify the environmental problems in relation to pollution
- CO3: analyze the various biological variance and evolutionary process
- CO4: estimate the water quality of various ecosystems
- CO5: discuss the lethal concentration for mosquito control

Course Code: 20PZE101

Course Name: MOLECULAR BIOLOGY

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

- CO1: illustrate the genomic machinery and its importance
- CO2: identify the regulatory mechanism of nucleic acids
- CO3: analyze the modern concepts of gene and its expression
- CO4: assess the gene expression patterns in different environmental conditions
- CO5: discuss the molecular aspects of both Prokaryotes and Eukaryotes

Course Code: 20PZE102

Course Name: HAEMATOLOGY

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

- CO1: illustrate the composition and functions of blood
- CO2: identify the causative factors of blood related diseases
- CO3: analyze various theories and factors related to blood clotting
- CO4: assess the knowledge on collection and preservation of blood
- CO5: discuss various disorders of Human blood

Course Code: 20PZE203

Course Name: INDUSTRIAL ZOOLOGY

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

- CO1: extend the economic importance of different organisms
- CO2: apply the various farming industries in India
- CO3: examine the beneficial values of by-products from animals
- CO4: evaluate the various culture techniques for commercially important animals
- CO5: improve the quality and quantity of the produces of cultivable animals

Course Code: 20PZE304

Course Name: BIOINSTRUMENTATION TECHNOLOGY

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

- CO1: define the principles of various bio-instruments
- CO2: apply the procedures on the working mechanism of bio-instruments
- CO3: examine the applications of bio-instruments
- CO4: criticize the techniques adopted in bio-instruments
- CO5: Compile the importance of bio-instruments in modern biological research

Course Code: 20PZE305

Course Name: WILDLIFE BIOLOGY

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

- CO1: explain the importance of wildlife
- CO2: apply the knowledge to conserve the wildlife
- CO3: analyze the threats faced by wildlife
- CO4: evaluate the need of wildlife protection act and amendments
- CO5: create an awareness among public on the conservation of wildlife

Course Code: 20PZC105, 20PZC211, 20PZC316 and 20PZC421

Course Name: COMPREHENSION AND *viva voce*

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

- CO1: spell out the in-depth knowledge in the subject matter
- CO2: apply presence of mind to develop their interpersonal interactions
- CO3: able to classify the applications of scientific knowledge for future carrier
- CO4: interpret their new ideas to strengthen individually
- CO5: adopt a new technology to evaluate their presentations

Course Code: 20PZC422

Course Name: INTERNSHIP

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

- CO1: identify the thrust areas to be strengthened to develop the entrepreneurial skills
- CO2: apply their knowledge to improve the practical / field experiences
- CO3: examine the utility of laboratory equipments in various thrust areas
- CO4: estimate the value of products through large scale production
- CO5: discuss the cost of production owing to improve the employability and marketing status

Course Code: 20PZC423

Course Name: PROJECT AND *viva voce*

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

- CO1: infer their subject knowledge towards various career oriented research
- CO2: apply their scientific knowledge to formulate a new idea
- CO3: analyze the rationale of selection of a particulate topic
- CO4: appraise the knowledge in thrust area with ethical strategies in research
- CO5: elaborate the output of the research to develop the scientific excellence

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



M.Sc Microbiology

**PROGRAMME SPECIFIC OUTCOMES
AND
COURSE OUTCOMES**

Programme Code: PGY08

Programme Name: M.Sc. (Microbiology)

Program Specific Outcomes

On successful completion of M.Sc., Microbiology programme, the students would have

- PSO 1:** learnt the fundamental attributes of microorganisms concordantly with applied concepts of Microbiology in Food, Agriculture, Pharmaceutical Sciences, Medical and Environmental domains
- PSO 2:** the ability to communicate the research findings through paper publication, research proposals, commentary articles and other scientific fora and club
- PSO 3:** developed the skill to analyze and find solutions for the societal problems
- PSO 4:** acquired core knowledge and found research gaps in microbiology to formulate research projects to meet placements in industries, hospitals and research institutions
- PSO 5:** the ability to do research project and to meet the global demand in the production of Microbial products following bio-ethical regulations
- PSO 6:** gained the entrepreneurial skills and leadership qualities for the production and marketing of microbial products
- PSO 7:** acquired the knowledge to clear competitive examinations such as NET, GATE, SET, IARI, ICMR, FSSI, ARS *etc.*,

COURSE OUTCOMES

Course Code: 20PYC101

Course Name: MICROBIAL TAXONOMY AND DIVERSITY

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

- CO1: explain the structural features, life cycle and economic importance of bacteria, virus, algae, fungi and protozoa
- CO2: apply the knowledge of microbial taxonomy to identify the microorganisms
- CO3: examine the cellular and acellular microorganisms based on their morphological and molecular features
- CO4: determine the major characteristic features used in microbial classification
- CO5: adopt the taxonomy and economic importance of microorganisms for classifying microorganisms

Course Code: 20PYC102

Course Name: BIOCHEMISTRY

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

- CO1: explain the classification, structure and properties of biomolecules
- CO2: apply the knowledge of significance of biomolecules in living system
- CO3: examine the metabolic reactions of biomolecules
- CO4: evaluate the concept of metabolism of biomolecules and enzyme catalysis and kinetics
- CO5: discuss the metabolic pathway and mechanism of bacterial photosynthesis and bioluminescence

Course Code: 20PYC103

Course Name: CELL AND MOLECULAR BIOLOGY

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

- CO1: explain the structural components, functions and regulatory mechanisms of cell
- CO2: organize the process of replication, transcription and translation
- CO3: analyze the mechanism of gene regulation and cancer
- CO4: evaluate the role of enzymes and factors involved in gene expression
- CO5: discuss the events of cell cycle, cellular processes and cell signaling

Course Code: 20PYC104

Course Name : PRACTICAL – I

(Microbial Taxonomy and Diversity, Biochemistry, Cell and Molecular Biology Lab)

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

- CO1: demonstrate the sterilization, media preparation and preservation methods of microorganism
- CO2: identify the microorganisms and the stages of cell division
- CO3: analyze the effect of physical parameters on bacterial growth
- CO4: evaluate the biomolecules present in the culture media adopting standard methods
- CO5: develop protocols for microbial identification and characterization

Course Code: 20PYC206

Course Name: MICROBIAL GENE TECHNOLOGY

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

- CO1: explain the basic techniques required in recombinant technology
- CO2: apply the knowledge of techniques for analyzing microbial genome
- CO3: analyze the techniques used in protein separation and analysis
- CO4: assess the suitability of the techniques adopted for cloning and gene editing
- CO5: develop the skills to adopt suitable molecular technique in gene cloning, genomics and proteomics

Course Code: 20PYC207

Course Name: IMMUNOTECHNOLOGY

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

- CO1: explain the basic, applied and ethical concepts of immunotechnology
- CO2: organize systematically the structure of cells and organs of immune system
- CO3: analyse the types of immunogens and immunity
- CO4: assess the principle and significance of in vitro and in vivo techniques associated with antigen antibody interactions
- CO5: develop the new strategy to identify the antigens

Course Code: 20PYC208

Course Name: SOIL AND AGRICULTURAL MICROBIOLOGY

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

- CO1: explain the role of soil microorganisms in agriculture
- CO2: apply the soil microbes for plant growth, disease control and decomposition of waste
- CO3: examine the pathogenicity of the microbial diseases affecting the crop plants
- CO4: evaluate the significance of plant microbe interactions for improving the agriculture yield
- CO5: develop ecofriendly agricultural practices by employing microorganisms

Course Code: 20PYC209

**Course Name: PRACTICAL - II
(Microbial Gene Technology Lab)**

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

- CO1: summarize the methods for isolating DNA, RNA and protein from bacteria
- CO2: apply the techniques for cutting, joining and amplifying the DNA
- CO3: analyse the techniques associated with the transfer of DNA into bacteria
- CO4: measure the expression of genes in bacteria using a phenotypic marker
- CO5: design the experiments to study the effect of mutagens in bacteria

Course Code: 20PYC210

**Course Name: PRACTICAL - III
(Immunotechnology, Soil and Agricultural
Microbiology Lab)**

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

- CO1: demonstrate the role of antigen antibody interactions in diagnosis of diseases
- CO2: apply the knowledge of immunological techniques for analyzing proteins
- CO3: examine the role of various microbes in promoting soil fertility and plant growth
- CO4: recommend the usage of biofertilizers and biopesticides to farmers
- CO5: integrate the symptoms manifested in crop plants with relevant microbes for better disease management

Course Code: 20PYC312

Course Name: MEDICAL MICROBIOLOGY

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

- CO1: outline the features of bacteria, virus, fungi and parasites associated with human diseases
- CO2: identify the mechanism of microbial pathogenesis and symptoms
- CO3: analyse the laboratory diagnostic methods and safety guidelines to be practiced in clinical laboratories
- CO4: recommend the suitable control measures for preventing the spread of disease-causing microorganisms
- CO5: discuss the epidemiology of microbial diseases of human beings

Course Code: 20PYC313**Course Name: FOOD AND DAIRY MICROBIOLOGY**

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

- CO1: explain the microorganisms present in vegetable, fruits, milk, oriental foods, and probiotic foods
- CO2: select the appropriate preparation methods for oriental and probiotic food products
- CO3: analyse the types of food spoilage, sanitation practices and preservation methods
- CO4: evaluate the role of microbiologist in following government regulatory practices for assessing the quality of food and dairy products
- CO5: integrate the preservation techniques with food manufacturing and safety practices

Course Code: 20PYC314**Course Name: ENVIRONMENTAL MICROBIOLOGY**

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

- CO1: explain the characteristic features of airborne and aquatic microbes
- CO2: identify the microbes present in water, sewage and industrial effluents
- CO3: analyze the role of microbes in degradation and remediation process
- CO4: criticize the effect of environmental pollutants in human health
- CO5: develop new strategy to mitigate environmental pollution using microorganisms

Course Code: 20PYC315**Course Name: PRACTICAL – IV****(Medical Microbiology, Food and Dairy Microbiology & Environmental Microbiology Lab)**

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

- CO1: explain the methods of isolating and identifying microbes from clinical samples and check their sensitivity pattern
- CO2: determine the quality of food and environment through qualitative and quantitative analysis
- CO3: inspect the process of various fermented food production
- CO4: assess the physical and chemical indices of sewage and industrial effluents
- CO5: develop the protocol to identify the microorganisms present in the clinical, food and dairy samples and make conclusion

Course Code: 20PYE101**Course Name: INHERITANCE BIOLOGY**

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

- CO1 : explain the concepts of mendelian and nonmendelian genetics
- CO2: apply the inheritance biology to analyse various evolutionary changes in living system
- CO3 : analyse the effect of mutation and the mechanism of inheritance in different model organisms
- CO4 : evaluate the role of genetics in diverse areas of biology
- CO5 : discuss the genotype and phenotypic expression in different generations

Course Code: 20PYE102**Course Name: TECHNIQUES IN MICROBIOLOGY**

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

- CO1: select the appropriate sterilization, staining methods and medium for microbial analysis
- CO2: utilize the principle and applications of various microscopes and staining techniques employed in Microbiology
- CO3: compare the specific role of different dyes and stains used in microbiology
- CO4: evaluate the principle behind separation and sedimentation techniques and analysis techniques adopted in Microbiology
- CO5: adapt the various types of biophysical techniques in analyzing the biomolecules

Course Code: 20PYE203**Course Name: PUBLIC HEALTH MICROBIOLOGY**

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

- CO1: explain the types of human diseases and their preventing measures
- CO2: identify the role of antibiotics in microbial disease management
- CO3: infer the various medical terminologies related to public health
- CO4: assess the severity of the outbreak of diseases declared by WHO
- CO5: discuss the factors and symptoms behind different diseases

Course Code: 20PYE304**Course Name: BIOPROCESS TECHNOLOGY**

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

- CO1 : explain the components and significance of the bioprocess technology
- CO2: categorize the different types of fermentors and fermentation processes
- CO3 : analyse the various methods of production, recovery, and patenting microbial products
- CO4 : access the microbes in fermentation process and improve its efficiency of production
- CO5: design a suitable methodology for preparing fermented products

Course Code: 20PYE305**Course Name: RESEARCH METHODOLOGY AND BIostatISTICS**

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

- CO1: explain the statistical principles and molecular techniques associated with microbiological research
- CO2: apply the knowledge of writing scientific articles and thesis in research
- CO3: imbibe the writing and presentation skills relevant to research
- CO4: evaluate the suitable methodology for analysing the data and representing the results
- CO5: discuss the research output and formulate the conclusions

Course Code: 20PYC105, 20PYC211 and 20PYC316

Course Name: COMPREHENSION AND *viva voce*

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

- CO1: comprehend the in-depth knowledge in the subject matter
- CO2: apply the critical thinking to develop their interpersonal interactions
- CO3: analyse the applications of scientific knowledge for their career
- CO4: interpret their ideas to strengthen their individuality
- CO5: build their image by demonstrating deep insight in their domain knowledge

Course Code: 20PYC417

Course Name: INTERNSHIP

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

- CO1: demonstrate the different domains of Microbiology with their career and entrepreneur potentials
- CO2: apply the skills of operating instruments in various industries
- CO3: compare the available career options through skill mapping
- CO4: assess the importance of team work and leadership skills in industries and institutions
- CO5: develop entrepreneurial skills to make a start up in medical, food, pharma, environmental and agricultural industries

Course Code: 20PYC418

Course Name: PROJECT AND *viva voce*

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

- CO1: outline the concepts of research and research ethics
- CO2: apply the various methods in microbiology to solve their chosen research problem
- CO3: analyse the ethics in research
- CO4: assess the research findings and compare with the previous reports
- CO5: develop the ability to work independently in a research arena

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



M.Sc Biotechnology

**PROGRAMME SPECIFIC OUTCOMES
AND
COURSE OUTCOMES**

Programme Code: PGO09

Programme Name: M.Sc. (Biotechnology)

PROGRAM SPECIFIC OUTCOMES

On successful completion of M.Sc. Biotechnology Programme, the students would have

- PSO1:** understood the principles and applications of Genetic engineering, Animal Biotechnology and stem cells with special emphasis on the development of animals and microbes for serving mankind.
- PSO2:** exhibited oral and written communications to deliver the scientific concepts effectively in various forums.
- PSO3:** acquired critical thinking and analytical skills to know the recent applications in molecular diagnosis of human diseases.
- PSO4:** developed comprehensive skills in tissue culture to produce disease and drought resistant plants and interpreted various biological data through advanced bioinformatics tools.
- PSO5:** embraced moral and ethical values in animal and stem cell research following IAEC regulations.
- PSO6:** undertaken the responsibility as an individual and as a team in multi disciplinary.
- PSO7:** acquired knowledge skills and confidence necessary to appear various competitive examinations such as NET, SET, GATE, TNPSC, UPSC *etc.*,

COURSE OUTCOMES

Course Code: 20POC101

Course Name: CELL AND MOLECULAR BIOLOGY

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

- CO1: summarize the concepts of cellular organization, signal mediators and outline the cell signalling pathway
- CO2: identify the various methods of transport across cell membrane and make use of central dogma in governing life
- CO3: analyze the functions of the various cellular organelles and examine the current therapeutic measures for cancer
- CO4: appraise the chromosome structure, oncogenes and justify the factors inducing mutation
- CO5: elaborate the modes of cell division and the role of chaperons in protein folding

Course Code: 20POC102

Course Name: GENETICS AND GENETIC ENGINEERING

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

- CO1: label the human cytogenetics, genetics and its disorders
- CO2: organize the cloning and expression vectors and its properties
- CO3: classify the modes of gene transfer and detection
- CO4: evaluate the screening and selection of clones
- CO5: elaborate the multiplex cloning and screening methods

Course Code: 20POC103

Course Name: INDUSTRIAL MICROBIOLOGY

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

- CO1: explain the structure, types of fermentor and industrial sterilization
- CO2: identify the control, monitoring of fermentation process and bioreactor methods
- CO3: analyze the aerobic, anaerobic fermentation and downstream processes
- CO4: evaluate the production of single cell proteins and antibiotics
- CO5: compile different parameters of fermentation process, industrial enzymes, biosafety levels and practices

Course Code: 20POC104

Course Name: PRACTICAL - I

(CELL AND MOLECULAR BIOLOGY, GENETIC ENGINEERING AND INDUSTRIAL MICROBIOLOGY LAB)

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

- CO1: demonstrate the cell division and illustrate the microbial growth kinetics
- CO2: show giant chromosomes and utilize the organisms for immobilization and microencapsulation
- CO3: compare the quantitative and qualitative estimation of molecules
- CO4: evaluate the isolation, screening methods, gene amplification and blotting techniques
- CO5: improve the gene isolation, gel electrophoresis, restriction digestion and ligation methods

Course Code: 20POC206

Course Name: MEDICAL BIOCHEMISTRY

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

- CO1: explain the metabolism, classification of macromolecules and disorders of carbohydrate metabolism
- CO2: identify the abnormalities of lipids and explain the biomedical importance of macromolecules
- CO3: analyze the clinical importance of enzyme and disorders of endocrine system
- CO4: evaluate the structural organization of proteins and biosynthesis of hormones and types of vitamins
- CO5: compile the disorders associated with amino acid metabolism and lipid storage diseases

Course Code: 20POC207

Course Name: MICROBIAL GENE TECHNOLOGY

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

- CO1: explain the concept of mutation, detection, types of mutagens and genetic mapping
- CO2: identify the various methods of gene transfer and Hfr production
- CO3: analyze the principle of gene expression and inspect the molecular basis of mutagenesis
- CO4: assess the life cycle of λ phage, types of chromosomal variation and chromosomal detection
- CO5: discuss the methods of chromosome analysis, bacterial transcription and the mechanism of transposons

Course Code: 20POC208**Course Name: BIOINFORMATICS**

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

- CO1: outline the frequently used biological data in sequence analysis and significance of sequence alignment
- CO2: utilize the existing software effectively to extract information from databases and use this information in computational analysis
- CO3: examine various biological databases and their storage, annotation, sequence alignment and phylogenetic tree types
- CO4: interpret and solve the biological problems from the molecular biological data and assess the sequence similarity
- CO5: compile appropriate computational tools for preparing the data for analysis and execute those tools effectively for tree building methods

Course Code: 20POC209**Course Name: PRACTICAL – II
(MEDICAL BIOCHEMISTRY LAB)**

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

- CO1: list the methodology of preparation of reagents, buffers and normality solutions
- CO2: experiment with the physical and chemical parameters influencing enzyme activity
- CO3: analyze the chemical profile of urine
- CO4: determine the conventional chromatography separation procedure
- CO5: discuss the glucose level in blood and urine samples

Course Code: 20POC210**Course Name: PRACTICAL – III
(MICROBIAL GENE TECHNOLOGY AND BIOINFORMATICS LAB)**

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

- CO1: illustrate sequence retrieval and sequence similarity searches
- CO2: identify the new isolates of antibiotic resistant mutant bacterial strains and bioassay of amutagen by AMES test
- CO3: analyze the method of phylogeny and the transduction mechanism
- CO4: assess the significance of sequence alignment and interpret bacterial transformation
- CO5: invent the bacterial conjugation, crowded plate technique for antibiotics producing microbes.

Course Code: 20POC312

Course Name: IMMUNOLOGY AND STEM CELLS

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

- CO1: explain the progeny of immune cells, immune response and classification of stem cells
- CO2: identify the types of immunity, hypersensitivity reactions, genetic map of MHC gene in man
- CO3: analyse the technology involved in different types of vaccine production and cryopreservation of stem cells
- CO4: assess the role of immune system in transplantation, complement pathway and tumour development
- CO5: discuss the structure of antibody, stages of stem cells, reverse vaccinology and Immunodiagnostics

Course Code: 20POC313

Course Name: OMICS AND DRUG DESIGNING

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

- CO1: explain the genome organization, transcriptome analysis and summarize types of genomics and proteomics
- CO2: compute the genome project, drug discovery and docking
- CO3: analyse the applications of omics and next generation sequencing
- CO4: interpret the tools in transcriptome and proteome analysis and assess the sequencing techniques
- CO5: design drugs by exploiting omics approaches and discuss the ethics of human genome project

Course Code: 20POC314

Course Name: PLANT AND ANIMAL BIOTECHNOLOGY

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

- CO1: outline the concept of plant tissue culture, animal cell culture, cell lines and genetic engineering
- CO2: apply the sterilization techniques, tissue engineering, virus mediated gene transfer and vectors for animal cells
- CO3: analyze the types of culture, role of PGRs, assess the natural gene transfer and direct gene transfer methods in plants and animals
- CO4: assess the plant resistance to biotic and abiotic stresses, recombinant proteins and vaccines
- CO5: develop the transgenic plants, animals and molecular marker aided plant breeding methods

Course Code: 20POC315**Course Name: PRACTICAL - IV****(IMMUNOLOGY AND STEM CELLS, OMICS AND DRUG DESIGNING AND PLANT AND ANIMAL BIOTECHNOLOGY LAB)**

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

- CO1: demonstrate immunoelectrophoresis and the preparation of animal and plant cell culture media and illustrate the process of DNA isolation and structure retrieval
- CO2: utilize the various biological sequences for drug design and development
- CO3: examine the procedure of micropropagation using different explants
- CO4: assess the metabolic pathways and maintain cell lines necessary for health and diagnostic practices
- CO5: develop skills on recent immunology tools and discuss how to design drugs using docking

Course Code: 20POE101**Course Name: STATISTICAL COMPUTING**

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

- CO1: explain the concepts of statistical computing for diagrammatic representation of biological data
- CO2: apply the data processing with graphical presentation
- CO3: examine the statistical measures of central tendency and compare various statistical tests
- CO4: determine the importance of R language and statistical analysis
- CO5: design the various graphical modelling using R and present data in excel

Course Code: 20POE102**Course Name: ECOBIOTECHNOLOGY**

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

- CO1: identify the global environmental issues and environmental management
- CO2: develop the method of biodegradation of xenobiotic compounds, oil and phytoremediation
- CO3: analyze the role of microbes in biodegradation, leaching and mining and biogas production technology
- CO4: measure the treatment of septage and biosolids and solid waste to solve environmental problems
- CO5: compile different types of biofertilizers and genetically engineered microbes for organic farming

Course Code: 20POE203**Course Name: FOOD BIOTECHNOLOGY**

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

- CO1: explain the food spoilage and demonstrate the food preservation process
- CO2: identify the food borne infection and make use of fermented food products
- CO3: analyse the production of organic acid, lactic acid and probiotic food
- CO4: determine the concept of the biosensors for food quality and food microflora
- CO5: discuss the genetically modified food and construct food safety regulation.

Course Code: 20POE304**Course Name: NANOBIO TECHNOLOGY**

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

- CO1: explain the types of nanostructures, methods and factors influencing the synthesis of nanoparticle and DNA coupled nanoparticles.
- CO2: apply the characterization techniques, peptide coupled nanoparticles, lipid and magnetic nanoparticles
- CO3: analyze the importance of micro electro mechanical and nano electromechanical systems, nanotechnology in tissue engineering and applications of nanoparticles
- CO4: assess their knowledge in fabrication technologies, nano delivery systems and factors influencing toxicity of nanoparticles
- CO5: elaborate the ethical issues governing nanotechnology and system specific toxicological effects of nanoparticles

Course Code: 20POE305**Course Name: PHARMACEUTICAL BIOTECHNOLOGY**

Upon Completion of the course, the students will be able to

- CO1: illustrate the clinical testing process for pharmaceuticals, drug manufacture, formulations and production of therapeutic agents
- CO2: apply how high-throughput screening methods and analytical techniques used to discover potential drugs
- CO3: infer the requirements for ADME, pharmacokinetics, pharmacodynamics and pharmacogenomics experiments during the drug discovery
- CO4: justify the development of gene therapy and biopharmaceuticals in pharmaceutical research
- CO5: discuss the challenges faced in each step of the drug discovery, drug delivery and ethical regulations.

Course Code: 20POC105, 20POC211 and 20POC316

Course Name: COMPREHENSION AND *viva voce*

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

- CO1: demonstrate an ability to apply their biotechnology techniques and tools to solve biological problems
- CO2: apply and communicate effectively on complex plant and animal biotechnology events with the scientific community and with society at large
- CO3: conclude the various aspects of tools and techniques in biotechnological manipulation
- CO4: justify the mechanism of action and the use of different enzymes in biotechnology research and recombinant protein production
- CO5: build knowledge and understanding of related norms and ethics in genetic engineering product/technique development

Course Code: 20POC417

Course Name: INTERNSHIP

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

- CO1: find hands-on training in the diverse areas of biotechnology and set them up for future employment.
- CO2: practice the ongoing research and development activities in the reputed industries, institutes and universities
- CO3: analyze, compile the experimental data and present the scientific report.
- CO4: evaluate the biosafety, bioethics regulations in different branches of biotechnology *viz* agriculture, food, medicine and pharmaceutical
- CO5: design experiments pertaining to different areas of biotechnology and adapt to the varying working environment in industry and research institute

Course Code: 20POC418

Course Name: PROJECT AND *viva voce*

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

- CO1: choose the socially relevant topics such as nanotechnology, industrial biotechnology and plant biotechnology
- CO2: experiment with modern techniques to support the selected topics
- CO3: categorize the available data for statistical analysis
- CO4: evaluate the importance of research findings for the society
- CO5: compile the outcome of the project in the form of a research article for publications in reputed journals

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



M.Sc Computer Science

**PROGRAMME SPECIFIC OUTCOMES
AND
COURSE OUTCOMES**

Programme Code: PGS10

Programme Name: M.Sc. (Computer Science)

Program Specific Outcomes

On successful completion of M.Sc. Computer Science Programme, the students would have

PSO 1: understood the concepts and ideas involved in computing.

PSO 2: gathered business requirements for any problem and share the principles of its estimation.

PSO 3: gained knowledge in Computer techniques to solve real world problems.

PSO 4: acquired knowledge to implement new algorithm.

PSO 5: acquired knowledge to interpret the data and develop real time applications.

PSO 6: collaborated with team members and come out with new ideas for software development

PSO 7: gained confidence to appear for competitive examinations like CSIR/UGC-NET, SET, GATE etc.

COURSE OUTCOMES

Course Code: 20PSC101

Course Name: ADVANCED DATA STRUCTURES AND ALGORITHMS

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

- CO1: understand the different types of advanced data structure algorithms
- CO2: experiment the algorithms with real time data set
- CO3: analyze the linear and nonlinear data structure
- CO4: interpret the complexity of given algorithms.
- CO5: build applications using various data structures.

Course Code: 20PSC102

Course Name: OPERATING SYSTEM WITH LINUX

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

- CO1: demonstrate the functionalities of operating system
- CO2: experiment the techniques of scheduling, paging, and memory allocation
- CO3: examine the variety of tasks performed by the operating system
- CO4: interpret the various stages of system calls involved in open source operating system
- CO5: elaborate the mechanism of inter process communication

Course Code: 20PSC103

Course Name: ORDBMS

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

- CO1: summarise the architecture of 11g database
- CO2: demonstrate the various oracle commands
- CO3: distinguish between relational and non-relational database
- CO4: interpret the creation of trigger, procedures and functions
- CO5: develop the real time applications for maintaining the social media

Course Code: 20PSC104

Course Name: PRACTICAL - I

[DATA STRUCTURES AND OS LAB]

Upon Completion of the course, the students will be able to

- CO1: demonstrate the application of structures using oracle
- CO2: solve programs for various types of sorting
- CO3: analyse real time applications using multimedia data structures
- CO4: interpret interprocess communication
- CO5: develop applications using different operating system

Course Code: 20PSC206**Course Name: RECENT JAVA TECHNOLOGIES**

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

- CO1: explain the various J2EE technologies like JDBC, Servlet, AJAX and STRUTS
- CO2: experiment J2EE technologies
- CO3: distinguish between HTTP Request and XMLHTTP Request
- CO4: assess the importance of AJAX and frameworks in web development
- CO5: construct a responsive website using AJAX and STRUTS

Course Code:20PSC207**Course Name: OBJECT ORIENTED PROJECT MANAGEMENT**

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

- CO1: illustrate key activities in software development and the role of modeling
- CO2: apply design and development principles in the construction of software systems of varying complexity
- CO3: analyse the various modelling diagrams in Unified Modeling Language (UML)
- CO4: evaluate and apply key concepts in software development such as risk and quality
- CO5: design applicable solutions in one or more application domains using software engineering approaches that integrate ethical, social, legal and economic concerns.

Course Code: 20PSC208**Course Name: SECURITY IN COMPUTING**

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

- CO1: define the risk involved in cyber security
- CO2: apply the number theory for security purpose
- CO3: analyze efficient secure for key management
- CO4: evaluate the different types of protocols and layers
- CO5: develop cryptographic algorithms and applications

Course Code: 20PSC209**Course Name: NoSQL**

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

- CO1: demonstrate the use of NoSQL databases
- CO2: apply the various types NoSQL databases
- CO3: classify the column family and graph databases
- CO4: evaluate the NoSQL database with Mongo DB
- CO5: build applications using Cassandra

Course Code: 20PSC210**Course Name: PRACTICAL – II [ADVANCED JAVA LAB]**

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

- CO1: demonstrate the basic concepts of web sites
- CO2: make use of session, request and response object
- CO3: examine working environment with tomcat
- CO4: interpret the strategies of preparing web applications
- CO5: develop web application

Course Code: 20PSC312**Course Name: COMPILER DESIGN**

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

- CO1: explain the basic operations of a compiler
- CO2: make use of parsing technique for traversing program statement
- CO3: examine the representation of grammar and intermediate code
- CO4: appraise code optimization techniques
- CO5: design steps for constructing a compiler with necessary tools

Course Code: 20PSC313**Course Name: .NET PROGRAMMING**

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

- CO1: explain the basic concept of .NET framework
- CO2: compute various console applications
- CO3: analyse functions of various .NET controls
- CO4: assess the dynamic Web pages
- CO5: elaborate different types of database connectivity

Course Code: 20PSC314**Course Name: BIG DATA ANALYTICS**

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

- CO1: demonstrate on Hadoop projects
- CO2: apply the hdfs command and hdfs architecture using hbase programming
- CO3: distinguish mobile data analytics and business data analytics
- CO4: determine the need of social media data
- CO5: develop real time analytical tools on mobile, business and social data

Course Code: 20PSC315

**Course Name: PRACTICAL - III
[.NET AND ANALYTICS LAB]**

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

- CO1: demonstrate the Object Oriented Programming concepts in C#
- CO2: apply the various controls in .NET
- CO3: distinguish between .Net and Analytics
- CO4: assess the need of Online applications
- CO5: develop the various Big Data applications

Course Code: 20PSE101

Course Name: WEB MARKETING

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

- CO1: summarize the web marketing environments
- CO2: apply the development methods
- CO3: examine and maximizing your site using Google Analytics.
- CO4: evaluate the key elements in Word Press.
- CO5: develop advanced practical skills in Word Press tools such as SEO.

Course Code: 20PSE102

**Course Name: MOBILE TECHNOLOGIES AND
INTERNET OF THINGS**

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

- CO1: summarize the advanced data communicating concepts
- CO2: apply the application framework for developing mobile applications
- CO3: analyze components and networks for particular application
- CO4: interpret IoT concepts
- CO5: design a Proof of Concept of an IoT system using Rasperry Pi/Arduino

Course Code: 20PSE203

Course Name: PROGRAMMING IN PYTHON

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

- CO1: demonstrate the working environment of Python language
- CO2: experiment functions and modules
- CO3: inspect data structure concept through the implementation
- CO4: interpret the essentials of file handling mechanism
- CO5: develop an application using OOPS concepts in Python

Course Code: 20PSE304

Course Name: DEEP LEARNING AND FUZZY LOGIC

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

- CO1: explain the basics of deep learning
- CO2: apply the models based on deep learning approaches
- CO3: examine the reinforcement methods
- CO4: judge the phenomenon to solve the uncertainty
- CO5: create fuzzy based applications

Course Code: 20PSE305

Course Name: JS FRAMEWORKS

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

- CO1: demonstrate the basics of Java Script Framework
- CO2: build models based on Angular
- CO3: analyze the MVC model
- CO4: judge the phenomenon to solve the uncertainty in web
- CO5: create DOM based applications

Course Code: 20PSC105, 20PSC211, 20PSC316 -

Course Name: COMPREHENSION AND *viva voce*

Upon completion of the Course, the students will be able to

- CO1: demonstrate the concepts they have studied
- CO2: apply the knowledge confidently to different situations
- CO3: express their ideas to anyone/ group
- CO4: interpret the data
- CO5: get succeeded in competitive examinations

Course Code: 20PSC417

Course Name: INTERNSHIP

Upon completion of the Course, the students will be able to

- CO1: show and express the ideas about the industries
- CO2: solve the problems of the industries
- CO3 : analyse the policies, practices, theories of company
- CO4 : interpret the leadership qualities through co-operation and team work
- CO5 : work independently, identify the resources, acquire knowledge and skills of industries by their own self-directed methods of learning.

Course Code: 20PSC418

Course Name: PROJECT AND *viva voce*

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

CO1: explain the theoretical ideas

CO2: apply the knowledge confidently to different situations

CO3: analyse their ideas with the group effectively

CO4: assess the existing scenario

CO5: become entrepreneurs and industry ready personnel

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



M.A Economics

**PROGRAMME SPECIFIC OUTCOMES
AND
COURSE OUTCOMES**

Programme Code: PGE11

Programme Name: M.A.(Economics)

Program Specific Outcomes

On successful completion of M.A. Economics Programme, the students would have

- PSO 1:** identified and explained the economic concepts and theories related to the behaviour of economic agents, market morphology, legal institutions, social norms Government policies *etc.*,
- PSO 2:** expressed economic ideas and thoughts effectively to solve the societal problems related to economics
- PSO 3:** combined the academic components with the relevant applied aspects suited to real-life issues at different levels
- PSO 4:** integrated the theoretical knowledge with quantitative and qualitative evidences in order to explain past economic events and to formulate predictions on future ones and developed an aptitude for research by identifying thrust areas in economics
- PSO 5:** understood the importance of moral and ethical values to maximize the welfare of the economy by applying the welfare economic concepts and theories for the betterment of the society
- PSO 6:** applied their entrepreneurial abilities gained in the field of Economics for the development of the Nation
- PSO 7:** acquired the core knowledge and skills to appear for competitive examinations such as UGC-NET / SET / IES *etc.*, and interviews being conducted by the public and private sectors

COURSE OUTCOMES

Course Code: 20PEC101

Course Name: MICROECONOMICS – I

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

- CO1 : outline the various concepts related to consumption, production, cost, revenue and market morphology
- CO2 : make use of cost and revenue functions in business decision making
- CO3 : analyse the theories of consumption and production
- CO4 : evaluate the different structure of the market conditions
- CO5 : elaborate the price theory

Course Code: 20PEC102

Course Name: MACROECONOMICS – I

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

- CO1 : rephrase the macroeconomic concepts like national income, effective demand, consumption function and investment function
- CO2 : identify the impact of different macroeconomic paradoxes in estimating national income analysis
- CO3 : distinguish the relevance of full employment equilibrium and underemployment equilibrium
- CO4 : estimate the national income model
- CO5 : elaborate the importance of autonomous investment for the development of the economy

Code: 20PEC103

Course Name: STATISTICAL METHODS

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

- CO1 : define the concepts like average, dispersion, correlation, regression, probability and hypothesis
- CO2 : apply different statistical tools in testing of hypotheses
- CO3 : categories the use of parametric and non-parametric tests in analyzing statistical data
- CO4 : estimate regression equations to predict different economic variables
- CO5 : discuss the importance of probability in business and financial decision making

Course Code: 20PEC205

Course Name: MICROECONOMICS – II

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

- CO1 : illustrate the concepts regarding product and factor pricing, welfare economics, externalities and public goods
- CO2 : apply the price theories in solving common economic problems
- CO3 : list out the appropriate theory for the fixation of price in both product market and factor market
- CO4 : justify the need for Government intervention to enhance the welfare of the society
- CO5 : elobarate the conditions for welfare centric society

Course Code: 20PEC206

Course Name: MACROECONOMICS – II

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

- CO1 : summarize the concepts related to macroeconomic issues like disequilibrium, inflation, multiplier, accelerator and business cycle
- CO2 : identify the macroeconomic problems which hinder the economic development
- CO3 : compare the Keynesian economics and New Keynesian economics
- CO4 : determine the solutions for the macro economic problems
- CO5 : adapt monetary and fiscal policies in achieving general equilibrium in the economy and framing macroeconomic policies

Course Code: 20PEC207

Course Name: MATHEMATICAL ECONOMICS

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

- CO1 : recall the price and income theories and mathematically explain the behaviour of consumers, firms and markets
- CO2 : make use of mathematical techniques like differentiation, integration, LPP in solving market issues
- CO3 : assume the scope of mathematical economics in the research field
- CO4 :interpret the results related to the demand, production, market and input-output analyses
- CO5 :optimize the level of utility, cost, revenue and profit

Course Code: 20PEC208

Course Name: MONETARY ECONOMICS

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

- CO1 : explain the concepts of money and capital market, portfolio management and monetary policy
- CO2: identify the factors influencing demand for and supply of money in the economy
- CO3 : compare different monetary theories
- CO4 :validate the performance of Indian capital market
- CO5 : discuss the importance of monetary policy in developing countries

Course Code: 20PEC310

Course Name: ECONOMETRICS

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

- CO1 : explain the methods of econometric research
- CO2 : build an econometric model for the socio-economic issues
- CO3 : analyse the results derived from the estimation and use the model for further research
- CO4 : evaluate the violation of OLS assumptions in econometric research
- CO5 : formulate an econometric model for solving economic problems

Course Code: 20PEC311

Course Name: ENVIRONMENTAL ECONOMICS

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

- CO1: explain the concepts related to environmental economics
- CO2 : identify the global environmental problems
- CO3 : apply the environmental theories in solving environmental issues
- CO4 :sensitize the environmental quality and the role of stakeholders to improve the environmental quality
- CO5 : discuss the environmental policies and suggest measures

Course Code: 20PEC312

Course Name: RESEARCH METHODOLOGY

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

- CO1 : recall the basic statistical tools for executing the results for the economic research
- CO2 : apply the statistical knowledge in pursuing research by using statistical software
- CO3 : analyse the appropriate statistical tool to economic research
- CO4 : estimate, test and interpret the results by using statistical packages ethically
- CO5 : develop the potential to prepare students' project proposal and write project report

Course Code: 20PEC414

Course Name: FISCAL ECONOMICS

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

- CO1 : explain the subject matter of fiscal economics
- CO2 : identify the fiscal operations of a country
- CO3 : analyse the sector wise allocation of resources
- CO4 : evaluate critically the financial statement of an economy
- CO5 : prepare a shadow budget individually and with a team

Course Code: 20PEC415

Course Name: AGRICULTURAL ECONOMICS

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

- CO1: explain the concepts related to agricultural economics
- CO2 : identify the importance of agriculture to the development of an economy
- CO3 : analyse the agricultural problems and solutions for it
- CO4: evaluate the credit flow to different rural development programmes for the betterment of farming community
- CO5 : suggest measures to solve the agricultural crisis by doing empirical research

Course Code: 20PEC416

Course Name: INTERNATIONAL ECONOMICS

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

- CO1: explain the concepts and theories related to international trade
- CO2 : make use of the knowledge in solving international trade issues
- CO3 : examine the outcomes of various trade agreements
- CO4 :evaluate the impact of economic reforms on international trade
- CO5 :develop consultancy services to the international traders by abiding trade ethics

Course Code: 20PEC417

Course Name: PLANNING AND GROWTH

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

- CO1 : explain the planning techniques, project evaluation and cost benefit analysis
- CO2 : identify the indicators for the development process
- CO3 : analyse the relevance of growth models in augmenting the economic development
- CO4 :evaluate the cost and benefit of a Government projects by doing research
- CO5 : improve the existing development theories and growth models for the betterment of the society

Course Code: 20PEE101

Course Name: INTERNATIONAL BUSINESS

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

- CO1 : recall the terms and policies related to international business
- CO2 : apply the knowledge gained in the real business situations
- CO3 : classify the documents involved in international business
- CO4 : assess the export promotional measures undertaken by the government
- CO5 : discuss the trade barriers in international business

Course Code: 20PEE102

Course Name: MAJOR ISSUES IN INDIAN ECONOMY

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

- CO1 : explain the major problems of Indian economy
- CO2 : identify the causes and consequences of various economic issues
- CO3 : analyse the depth of economic problems in the economy
- CO4 : validate how economic issues retard the economic development
- CO5 : discuss the impact of New Economic Policy on economic problems

Course Code: 20PEE203

Course Name: ECONOMICS FOR BUSINESS

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

- CO1: explain the basic concepts of business economics
- CO2: identify the different costs and revenues involved in a business
- CO3: examine the market trend and predict the demand
- CO4: interpret the business environment with economic policy
- CO5: design a pricing strategy for the contemporary market condition

Course Code: 20PEE304

Course Name: CURRENCY AND BANKING

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

- CO1 : explain the concepts related to money and banking
- CO2 : identify the monetary and banking issues and find resolving ways to the betterment of the economy
- CO3 : analyse the impact of inflation and deflation on monetary operations
- CO4 : defend the need for monetary and banking reforms
- CO5 : elaborate the transition of monetary system and imagine some ideas to improve the existing monetary and banking structure

Course Code: 20PEE305

Course Name: HEALTH ECONOMICS

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

- CO1 : explain the basic concepts and components of health economics
- CO2 : identify the health services provided by the Government
- CO3 : analyse and compare the demand for and supply of health and medical care
- CO4 : validate the cost of medical care production
- CO5 : discuss the importance of cost–benefit analysis of health and health insurance

Course Code: 20PEC104, 20PEC209, 20PEC313 and 20PEC418

Course Name: COMPREHENSION AND *viva voce*

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

- CO 1: recall the concepts and theories related to economics
- CO 2 : make use of concepts learnt to communicate ideas with empirical evidences
- CO 3: build the reasoning ability and reflective thinking towards the subject matter of economics
- CO 4 : interact with the interview panel respectfully and acquire the soft skills needed for career development
- CO5 : adopt the interview skills and keep ready for competitive exams through online

Course Code: 20PEC419

Course Name: INTERNSHIP

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

- CO1 : explain how the resources are distributed internally and within the market
- CO2: make use of internship experience in solving business issues
- CO3 : analyse the domestic and international business conditions
- CO4 : develop an ethical business plan and budget with a team
- CO5 : elaborate how macroeconomic events affect individual organisations

Course Code: 20PEC420

Course Name: PROJECT AND *viva voce*

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

- CO 1: recall the concepts and theories related to the select branch of economics taken for research
- CO 2: make use of theories learnt to verify the economic theory or to solve the socio-economic issues
- CO 3: build the research ability and reflective thinking towards the researchable issues in economics
- CO 4: defend the research findings in a public forum
- CO5: develop a research proposal for funding agencies which encourages minor research

Ayya Nadar Janaki Ammal College (Autonomous)

Sivakasi



M.Com

**PROGRAMME SPECIFIC OUTCOMES
AND
COURSE OUTCOMES**

Programme Code: PGK12

Programme Name: M.Com. (Commerce)

Program Specific Outcomes

On completion of M.Com. Degree Programme, the students would have

- PSO1** : gained comprehensive knowledge on accounting, taxation, cost management, financial management and security analysis and portfolio management.
- PSO2** : communicated ideas, write and present reports with clarity and execute plans effectively at higher level research, business and professional career
- PSO3** : applied professional techniques acquired and think critically to find concrete solutions to the problems pertaining in the field of business and economy
- PSO4** : used research based knowledge and research methods including research design, analysis and interpretation of data to provide valid suggestions
- PSO5** : applied professional ethics and engage with responsibility to the multicultural business stakeholders
- PSO6**: functioned efficiently as an individual and as a member or leader in assorted teams and multidisciplinary settings
- PSO7**: adapted updated technology and appropriate resources required for establishment / expansion of business practice through self-paced and self-directed learning

COURSE OUTCOMES

Course Code: 20PKC101

Course Name: HIGHER FINANCIAL ACCOUNTING

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

- CO1 : explain the branch, department, partnership firms, farm and voyage accounts
- CO2 : apply the accounting principles for various business organisations
- CO3 : compare the accounting procedures of branch, department, partnership firms, farm and voyage
- CO4 : assess the needs for branch, departmental and partnership accounts
- CO5 : prepare the accounts for business firms.

Course Code: 20PKC102

Course Name: FINANCIAL MANAGEMENT

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

- CO1 : explain the various techniques of financial management and financial planning
- CO2 : make use of the relevance of capital structure, cost of capital and dividend policy with the value of the firm
- CO3 : analyse the financial plan, leverages, capital structure and cost of capital of a company
- CO4 : determine the optimal capital structure and value of a firm
- CO5 : estimate the cost of capital, optimum dividend and working capital requirements of business firms.

Course Code: 20PKC103

Course Name: MARKETING MANAGEMENT

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

- CO1: explain the various concepts of marketing management
- CO2: identify the strategies for developing new product, fixing price, channel of distribution and promotion
- CO3: analyse the market segmentation, product life cycle, price decision, promotional tools and channels
- CO4: assess the marketing environment, new product development, price mix, channel of distribution and promotion mix
- CO5: adapt the innovation in product, price, place and promotion.

Course Code: 20PKC205

Course Name: CORPORATE ACCOUNTING

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

- CO1 : outline the basic concepts of corporate accounting
- CO2 : identify the accounting procedures of various forms of companies
- CO3 : analyse the internal and external reconstruction, performing asset and non- performing asset
- CO4 : determine the purchase consideration, capital and revenue profits and profit / loss of bank, insurance and electricity companies
- CO5 : prepare financial statements for various companies.

Course Code: 20PKC206

Course Name: BUSINESS RESEARCH METHODS

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

- CO1 : explain the conceptual framework of research design
- CO2 : apply the suitable statistical tools for research
- CO3 : analyse the problem and infer the results
- CO4 : appraise the various techniques of research
- CO5 : design the research reports.

Course Code: 20PKC207

Course Name: SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT

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

- CO1 : illustrate the various investment avenues, theories of security, derivatives and risk management and portfolio management
- CO2 : apply the theories of securities analysis and portfolio management
- CO3 : analyse the various investment alternatives and derivatives
- CO4 : appraise the techniques of derivatives in minimizing the risk
- CO5 : adapt the best portfolio combination and derivatives

Course Code: 20PKC208

Course Name: BUSINESS ENVIRONMENT

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

- CO1: explain the concepts of business, legal, cultural and global environments.
- CO2: make use of the provisions of business legislations
- CO3: analyse the internal, external, micro and macro business environments.
- CO4: assess the business competitions
- CO5: solve and manage the business related problems.

Course Code: 20PKC310

Course Name: ACCOUNTING FOR MANAGERIAL DECISIONS

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

- CO1 : define financial statement, cash flow statement, marginal costing, budgetary control and capital budgeting.
- CO2 : identify the types of ratios, cash flow activities, budgets, capital expenditure decisions
- CO3 : analyse the financial position of a business, cash flow, cost / volume / profit, master budget and investment proposals
- CO4 : interpret the results of ratios, cash flow activities, contribution, functional budget and capital budgeting
- CO5 : solve the managerial problems by adapting the techniques of management accounting

Course Code: 20PKC311

Course Name: INCOME TAX LAW AND PRACTICE

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

- CO1 : explain the basic concepts of Income Tax Act
- CO2: identify the exempted incomes from all heads of incomes
- CO3 : analyse the procedures for computing taxable incomes from five heads.
- CO4 : determine the taxable income of different heads of income
- CO5 : prepare the statement of tax liability of an individual

Course Code: 20PKC312

Course Name: SOFTWARE PACKAGES FOR RESEARCH

Upon Completion of the Course, the students will be able to

- CO1 : illustrate the statistical concepts of Excel, SPSS and AMOS
- CO2 : construct data files used in Excel, SPSS and AMOS
- CO3 : classify the various statistical functions in Excel, SPSS and AMOS
- CO4 : estimate the standard deviation, correlation, regression, factor values and Confirmatory factors
- CO5 : adapt the chi-square test, t-test, ANOVA and Structural Equation Model for their researches.

Course Code: 20PKC414

Course Name: COST MANAGEMENT

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

- CO1 : explain the concepts of activity based costing, target costing, life cycle costing, standard costing, value chain and value added
- CO2 : apply the various cost management techniques
- CO3 : analyse the techniques of cost management
- CO4 : interpret the results arrived through the cost management techniques
- CO5 : adapt the strategic areas of cost management system in a manufacturing concern.

Course Code: 20PKC415

Course Name: ST AND CUSTOMS DUTY

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

- CO1: explain the concepts of Goods and Services Tax Act and Customs Act
- CO2: make use of GSTN Portal in business
- CO3: categorize the transactions under CGST, SGST, IGST and UTGST
- CO4: appraise the mechanism of Goods and Services Tax System
- CO5: prepare the tax system for payment of tax and filling of tax returns.

Course Code: 20PKC416

Course Name: BANK MANAGEMENT

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

- CO1: explain the principles of lending, credit, cash, marketing management and cyber security of the banking sector
- CO2: identify the procedures for lending & recovery of loan, marketing risks and cyber security
- CO3: analyse the causes for NPA, norms for credit appraisal and market segmentation
- CO4: assess the management and cyber security practices of banks
- CO5: adapt the principles of credit, cash, risk and cyber security management

Course Code: 20PKC417

Course Name: CORPORATE FINANCE

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

- CO1 : explain various sources of finance available for Corporates
- CO2: make use of appropriate financing options
- CO3: examine the conditions and procedures of issuing equity and debts
- CO4: appraise the merits and demerits of each source of finance
- CO5: adapt the best financing pattern.

Course Code: 20PKE101**Course Name: BUSINESS AND ECONOMIC LEGISLATIONS**

Upon Completion of the course, the students will be able to

- CO1 : explain the terminologies in the business and economic laws
- CO2 : apply the provisions of legislations in business matters
- CO3 : compare and contrast the various kinds of contracts, negotiable instruments and intellectual properties
- CO4 : assess the validity of all forms of contracts
- CO5: establish and restructure the business firms according to the provisions of legislations.

Course Code: 20PKE102**Course Name: FINANCIAL SERVICES AND INSTITUTIONS**

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

- CO1 : explain the role and functions of the financial system.
- CO2 : identify the various financial services
- CO3 : analyse the economic environment and the impact of various policies on financial markets services and institutions
- CO4 : evaluate the role played by the financial markets, services and institutions in maintaining high quality decision in the financial market.
- CO5 : create strategies to promote financial products and services.

Course Code: 20PKE203**Course Name: RETAIL MANAGEMENT**

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

- CO1 : recollect the concepts of retailing, merchandising, supply chain management and retail branding.
- CO2 : apply appropriate frameworks to develop high level retailing strategy
- CO3 : analyse retail strategic choices in relation to managing channel partners, retail location, branding and marketing mix.
- CO4 : evaluate the implementation of marketing strategy and compile design to improve retailer market competitiveness.
- CO5 : compile current retail practices in their ability to respond to environmental trends.

Course Code: 20PKE304**Course Name: E- Commerce**

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

- CO1 : illustrate the various concepts in E-Commerce
- CO2 : make use of e-commerce techniques in the business
- CO3 : classify the models, topologies, applications and payments systems of e-commerce
- CO4 : interpret the mechanism of e-commerce
- CO5 : elaborate the security tools to overcome the risks involved in e-commerce

Course Code: 20PKE305

Course Name: HUMAN RESOURCE MANAGEMENT

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

- CO1: explain human resource management framework
- CO2: identify the best management practices, tools and models to implement an effective HRM system
- CO3: analyse the elements of HR functions
- CO4: assess the core HRM skills and competencies
- CO5: develop strategies, initiatives and programs to introduce and sustain competitive Human Resource advantage in organisations

Course Code: 20PKC104, 20PKC209, 20PKC313 and 20PKC418

Course Name: COMPREHENSION AND *viva voce*

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

- CO1: recall the concepts and theories related to commerce
- CO2 : communicate the business ideas
- CO3: build the reasoning ability and reflective thinking towards the subject matter of commerce
- CO4 : interact with the interview panel respectfully and acquire the soft skills needed for career development
- CO5: adapt the interview skills and keep ready for competitive exams through online

Course Code: 20PKC419

Course Name: INTERNSHIP

Upon completion of the course, the students will be able to

- CO1 : extend knowledge in the field of commerce and business
- CO2 : experiment practically with the operations of the business
- CO3 : examine the policies, procedures and practices of the business
- CO4 : adapt to the environment of the business / services and work together to achieve the common goal
- CO5 : develop skills of team work, co-operation and knowledge of ICT on business through self-packed strategies.

Course Code: 20PKC420

Course Name: PROJECT AND *viva voce*

Upon completion of the course, the students will be able to

- CO1 : identify the research problem which needs the solution
- CO2 : make use of the literature for designing the research
- CO3 : categorize the respondents and collect the data required for the study
- CO4 : test the hypothesis by applying the appropriate statistical tools, infer the results
drawn and report the suggestions
- CO5 : co-ordinate and execute research related work as a member of research team and
apply ICT tools for research independently.

Ayya Nadar Janaki Ammal College (Autonomous) Sivakasi



M.Com (Computer Applications)

**PROGRAMME SPECIFIC OUTCOMES
AND
COURSE OUTCOMES**

Programme Code: PGR13

Programme Name: M.Com. (C.A)

Program Specific Outcomes

On completion of M.Com. (CA) degree programme, the students would have

PSO1: gained the necessary domain knowledge on advanced commercial theories and practices

PSO2: acquired skills to use software to meet the computer-oriented commercial demands of business organizations

PSO3: became experts in business data analysis and predict market demands

PSO4: entrenched the essential practical exposure in the field of commerce with computer applications to develop the research culture

PSO5: adopted the prudent, ethical financial management techniques and accounting principles for successful business operations

PSO6: developed linkages with the business enterprises and take up innovative business assignments

PSO7: became successful Income Tax and GST Consultants and perform well in various competitive examinations like UGC-NET / SET, UPSC, TNPSC, IBPS *etc.* and interviews being conducted by various Public and Private sectors.

COURSE OUTCOMES

Course Code: 20PRC101

Course Name: HIGHER FINANCIAL ACCOUNTING

Upon completion of the course, the students will be able to

- CO1: explain the concepts of financial accounting
- CO2: apply the principles in various areas of accounting
- CO3: analyse the accounting information to take decisions in business
- CO4: determine the methods of recording financial transactions for preparing business reports
- CO5: develop the capacity to solve sums in financial accounting.

Course Code: 20PRC102

Course Name: BUSINESS ENVIRONMENT

Upon Completion of the Course, the students will be able to

- CO1: explain the concepts of business environment
- CO2 : identify the nature and functions of business environment
- CO3 : analyse the role of economic, legal and global environments in business
- CO4 : evaluate the various factors affecting the business environment
- CO5 : elaborate the implementation of laws and policies in business environment

Course Code: 20PRC103

Course Name: C++ PROGRAMMING

Upon completion of the course, the students will be able to

- CO1: explain the concepts and principles of object oriented programming
- CO2: identify the various C++ statements
- CO3: examine the role of classes and objects
- CO4: determine the significance of functions
- CO5: design to solve the real time commercial problems

Course Code: 20PRC104

Course Name: PRACTICAL – I [C++]

Upon Completion of the Course, the students will be able to

- CO1: find out the solution for commercial problems
- CO2: choose the relevant object oriented concepts to write programs
- CO3: classify functions in C++
- CO4: evaluate the various classes in C with Classes
- CO5: develop the programs using access modifiers.

Course Code: 20PRC206

Course Name: CORPORATE ACCOUNTING

Upon completion of the course, the students will be able to

- CO1: explain the concepts of corporate accounting
- CO2: identify the accounting formats of corporate companies
- CO3: analyse the accounting information to take business decisions
- CO4: evaluate the corporate business performance by preparing various reports
- CO5: discuss the accounting principles used for preparing company accounts

Course Code: 20PRC207 Course Name: RESEARCH METHODOLOGY AND STATISTICAL METHODS

Upon Completion of the course, the students will be able to

- CO1: explain the concepts of research methodology and statistics
- CO2: apply the appropriate statistical tools for solving business problems
- CO3: examine the role of parametric and non parametric tests in research
- CO4: evaluate listing variables for hypothesis testing and non-parametric testing
- CO5: design and solve the research problems using manual and modern statistical packages.

Course Code: 20PRC208 Course Name: RELATIONAL DATABASE MANAGEMENT SYSTEMS

Upon completion of the course, the students will be able to

- CO1: outline the concepts of database
- CO2: identify the role of SQL*Plus
- CO3: analyse the functions of distributed database management systems
- CO4: determine the queries and statements of database programming
- CO5: discuss the applications of real time database.

Course Code: 20PRC209 Course Name: WEB TECHNOLOGY

Upon Completion of the course, the students will be able to

- CO1: explain the concepts of web technology
- CO2: apply the various tags in web programming
- CO3: analyse the various web applications in business
- CO4: evaluate the features of static and dynamic websites
- CO5: design business websites.

**Course Code: 20PRC210
Course Name: PRACTICAL– II [RELATIONAL DATABASE MANAGEMENT SYSTEMS AND WEB PROGRAMMING]**

Upon Completion of the course, the students will be able to

- CO1: demonstrate the applications of RDBMS and web programming
- CO2: make use of functions of ORACLE and web programming
- CO3: analyse the format of relational database and web programming
- CO4: assess the various statements in database and web programming
- CO5: design website for a business organization using HTML and PHP .

Course Code: 20PRC312

Course Name: FINANCIAL MANAGEMENT

Upon completion of the course, the students will be able to

- CO1: explain the concepts of financial management
- CO2: apply different techniques used to prepare financial statements.
- CO3: analyse the sources of raising funds, instruments and controlling funds
- CO4: evaluate financial statements using financial data
- CO5: construct various reports to solve financial problems.

Course Code: 20PRC313

Course Name: TAXATION LAW AND PRACTICE

Upon completion of the course, the students will be able to

- CO1: explain the various aspects of direct and indirect taxes
- CO2: identify the exempted items in all heads of income
- CO3: examine the rules to compute income from all heads
- CO4: evaluate the procedures for clubbing of income, setoff losses and input tax credit
- CO5: create returns of income tax and submit through online

Course Code: 20PRC314

Course Name: .NET PROGRAMMING

Upon completion of the course, the students will be able to

- CO1: explain the concepts of .NET Programming
- CO2: identify the features of integrated development environment
- CO3: analyse the various controls in .NET programming
- CO4: evaluate the types of statement and function in event driven programming
- CO5: develop web applications for a business organization.

Course Code: 20PRC315

Course Name: PRACTICAL – III [.NET PROGRAMMING]

Upon Completion of the course, the students will be able to

- CO1: demonstrate the applications of .NET programming
- CO2: make use of VB.NET controls
- CO3: classify the statements of .NET programming
- CO4: assess the events of .NET programming
- CO5: design commercial and web applications in business.

Course Code: 20PRC417

Course Name: PRACTICAL COSTING

Upon completion of the course, the students will be able to

- CO1: explain the concepts of costing
- CO2: identify the various principles and elements of costing
- CO3: examine the techniques and procedures adopted in cost accounting
- CO4: determine the cost of production of a product in a manufacturing company
- CO5: develop practical knowledge on methods of costing.

Course Code: 20PRC418**Course Name: MANAGEMENT ACCOUNTING**

Upon completion of the course, the students will be able to

- CO1: explain the concepts of management accounting
- CO2: apply various techniques used in managerial decision making
- CO3: analyse the operations of organizations using management accounting tools
- CO4: evaluate the performance of an organization using management accounting tools
- CO5: discuss steps followed to solve sums in management accounting

Course Code: 20PRC419**Course Name: SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT**

Upon completion of the course, the students will be able to

- CO1 : explain the concepts of security analysis and portfolio management
- CO2 : apply various theories of securities analysis and portfolio management for investment decisions
- CO3 : analyse the different investment alternatives and derivatives
- CO4 : evaluate the techniques of investment and derivatives in minimizing the risk
- CO5 : build a best portfolio investment of an investor

Course Code: 20PRC420**Course Name: SOFTWARE PROJECT MANAGEMENT**

Upon Completion of the course, the students will be able to

- CO1: explain the concepts of business packages and software project management
- CO2: identify the different stages of software projects
- CO3: analyse the role of packages and software project in business
- CO4: evaluate the types of module in software projects
- CO5: adapt various techniques used in software project management.

Course Code: 20PRE101**Course Name: M - COMMERCE**

Upon completion of the course, the students will be able to

- CO1: explain the concepts of M-Commerce
- CO2: identify the applications of mobile commerce
- CO3: examine the various technologies of M-Commerce
- CO4: evaluate the functions of mobile commerce
- CO5: discuss the practical usage of M-Commerce.

Course Code: 20PRE102**Course Name: DIGITAL ADVERTISING**

Upon completion of the Course, the students will be able to

- CO1: explain the concepts of digital advertising
- CO2: identify the different elements of digital advertising
- CO3: analyse the types of digital advertising
- CO4: evaluate the impact of digital advertising on business
- CO5: design an innovative digital advertisement of a business enterprise.

Course Code: 20PRE203

Course Name: GREEN MANAGEMENT

Upon completion of the course, the students will be able to

- CO1: explain the concepts of green management
- CO2: identify the significance of green environmental management
- CO3: examine the types of green environment
- CO4: evaluate the strategies of sustainable green management
- CO5: discuss the measures adopted to develop green product.

Course Code: 20PRE304

Course Name: FOREIGN EXCHANGE AND RISK MANGEMENT

Upon completion of the Course, the students will be able to

- CO1 : explain the concepts of foreign exchange and risk management
- CO2 : identify the risks involved in foreign exchange
- CO3 : analyze the settlement of risks and balance of payments in foreign trade
- CO4 : evaluate the functions of foreign exchange and risk management
- CO5 : discuss the various areas in foreign exchange and risk management.

Course Code: 20PRE305

Course Name: BUSINESS ETHICS AND CORPORATE GOVERNANCE

Upon Completion of the course, the students will be able to

- CO1: explain the concepts of business ethics and corporate governance
- CO2: identify the issues in business ethics and corporate governance
- CO3: analyse the need for ethics and its applicability in corporate governance
- CO4: evaluate the corporate culture and behaviour in business ethics and social responsibility
- CO5: discuss the new policy guidelines for implementing the corporate culture.

Course Code: 20PRC105, 20PRC211, 20PRC316 and 20PRC421

Course Name: COMPREHENSION AND *viva voce*

Upon Completion of the course, the students will be able to

- CO1: recall the concepts and theories related to commerce
- CO2: apply the technical knowledge of commerce in communicating business ideas
- CO3: analyse reasoning ability skills and analytical thinking in the field of commerce and computer applications
- CO4: justify the level of understanding in the subject of commerce and computer applications
- CO5: develop skills for attending interviews and keep ready for competitive examinations through online

Course Code: 20PRC422

Course Name: INTERNSHIP

Upon Completion of the course, the students will be able to

- CO1: relate the gained theoretical knowledge with the projects in industry/institutions
- CO2: experiment practically with the operations of the business
- CO3: analyse the policies, procedures and practices of the business
- CO4: determine to study the suitable environment for starting up of a business/services
- CO5: develop leadership qualities through team work and work independently by self directed method of learning.

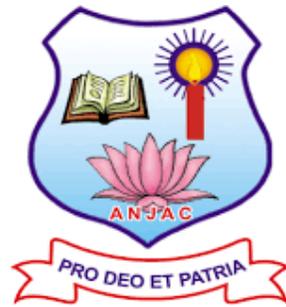
Course Code: 20PRC423

Course Name: PROJECT and *viva voce*

Upon Completion of the course, the students will be able to

- CO1: demonstrate the various models of software projects
- CO2: identify the phases of software project development
- CO3: analyse the techniques to solve real time problems
- CO4: evaluate the modules in software projects
- CO5: develop an innovative business application using software engineering principles.

Ayya Nadar Janaki Ammal College (Autonomous) Sivakasi



M.C.A

**PROGRAMME SPECIFIC OUTCOMES
AND
COURSE OUTCOMES**

Programme Code: PGA14

Programme Name: M.C.A

Program Specific Outcomes

On successful completion of MCA degree programme, the students would have

- PSO 1:** gained the fundamental knowledge of computing, mathematics and domain specialization to analyze and provide computer-based solutions to real time problems
- PSO 2:** utilized the research-based skills including analysis and interpretation of data and synthesis of the information to provide valid decisions
- PSO 3:** designed and developed web, system and mobile- based applications using modern tools and technologies
- PSO 4:** understood and committed to professional ethics and cyber regulations, responsibilities, and norms of professional computing practice for working in Software Development Organizations and Multinational Organizations
- PSO 5:** equipped themselves to engage in lifelong learning independently to improve their ever-changing domain knowledge and to appear for competitive examinations such as NET, SET, GATE , UPSC, TNPSC *etc.*, required for continual development
- PSO 6:** developed the ability to function effectively as individuals / team members to accomplish a common goal

COURSE OUTCOMES

Course Code: 20PAC101

Course Name: PYTHON PROGRAMMING

Upon completion of the course, the students will be able to

- CO1: explain the features of Python, lambda functions, file operations, class, object, thread and data processing using arrays
- CO2: identify execution of looping statements, operations on strings, reading and writing operations on files, built-in-functions and operations on files
- CO3: examine working of break, continue, pass, list, tuple and types of inheritance
- CO4: interpret decision making statements, operations on dictionaries, importance of abstract class, thread creation and thread synchronization
- CO5: create simple python programs using functions and data structures, student mark list using class, GUI to get input and display output

Course Code: 20PAC102

Course Name: OPERATING SYSTEM

Upon completion of the course, the students will be able to

- CO1: explain the structure, types of operating system, system calls and file system
- CO2: identify the issues in multithreading, critical section and process synchronization
- CO3: categorize the scheduling algorithms and inspect the handling of deadlock
- CO4: assess the page replacement algorithms and memory management techniques
- CO5: discuss the file allocation and security features of operating system

Course Code: 20PAC103

Course Name: DATA STRUCTURES USING C

Upon completion of the course, the students will be able to

- CO1: explain the concepts of linear and non-linear data structures
- CO2: identify the essential operations of array and data structures
- CO3: examine memory allocation and space and time complexity of algorithms
- CO4: interpret the applications of trees and graphs
- CO5: design the appropriate data structures for real time problems in C

Course Code: 20PAC104

Course Name: PRACTICAL - I [PYTHON LAB]

Upon completion of the course, the students will be able to

- CO1: illustrate the control statements to write basic Python programs
- CO2: identify the usage of arrays, functions, list, tuples, dictionary
- CO3: analyze the features of OOPs, files and threads
- CO4: evaluate the importance of GUI and exceptions
- CO5: develop Python programs using file management concepts

Course Code: 20PAC105

Course Name: PRACTICAL - II [DATA STRUCTURES LAB USING C]

Upon completion of the course, the students will be able to

- CO1: illustrate the use of arrays in data structures in C
- CO2: utilize the concepts of pointers in data structures
- CO3: examine the use of C structures for creating ADT
- CO4: estimate the dynamic memory allocation for data structures
- CO5: develop C programs for data structure problems

Course Code: 20PAC207

Course Name: NETWORKS AND SECURITY

Upon completion of the course, the students will be able to

- CO1: explain the concept of networking, OSI reference model, transmission media, security, threats and attacks
- CO2: identify the types of networks and functionalities of various layers
- CO3: compare connection oriented & connectionless services and examine the security algorithms
- CO4: assess the techniques involved in framing, congestion control and evaluate the importance of encryption and decryption
- CO5: discuss the various network security protocols and cryptographic techniques

Course Code: 20PAC208

Course Name: COMPILER DESIGN

Upon completion of the course, the students will be able to

- CO1: demonstrate the phases of compiler, tokens, finite automata, parser, CFG, type checking and optimization
- CO2: apply the DAG representation of basic blocks and identify the appropriate parsing techniques for the grammar
- CO3: categorize the types of parsing and analyze the error handling mechanism
- CO4: evaluate the syntax directed translations, control flow and switch statements
- CO5: minimize the states of a DFA and to construct the target code for the source language

Course Code: 20PAC209**Course Name: .NET AND DATABASE TECHNOLOGY**

Upon completion of the course, the students will be able to

- CO1: demonstrate the .NET framework architecture, basics of C#, ADO.NET, ASP.NET and SQL server
- CO2: apply object oriented concepts and SQL server commands
- CO3: categorize the SQL server objects and inspect the working of LINQ and LAMBDA
- CO4: assess the characteristics of entity framework and MVC
- CO5: develop console, windows and web applications using stored procedures

Course Code: 20PAC210**Course Name: JAVA PROGRAMMING**

Upon completion of the course, the students will be able to

- CO1: explain the concepts of object oriented programming, arrays, threads, string, exception handling and networking
- CO2: make use of inheritance, interface and Files
- CO3: distinguish console programming with graphical programming
- CO4: interpret the classes in Java API packages
- CO5: create stand-alone Java based applications

Course Code: 20PAC211**Course Name: PRACTICAL - III (JAVA LAB)**

Upon completion of the course, the students will be able to

- CO1: explain simple Object Oriented Programs using Java
- CO2: apply the working principles of multithreading, exception and file handling
- CO3: inspect the usage of string operations
- CO4: interpret the implementation of networking in JAVA
- CO5: develop GUI based Application using AWT and swing components

Course Code: 20PAC212**Course Name: PRACTICAL -IV [.NET AND DATABASE LAB]**

Upon completion of the course, the students will be able to

- CO1: illustrate the basic concepts of C# .Net, ASP.Net, T_SQL statements, aggregate functions
- CO2: identify the application to use classes, interfaces, and query expressions in console, windows, and web based applications
- CO3: analyze the various form controls, SQL Server objects for developing .Net applications
- CO4: determine the required tables and user defined exception and namespaces for .Net application
- CO5: design and publish the ASP.Net and MVC applications based on user requirements

Course Code: 20PAC314**Course Name: IOT AND ANALYTICS**

Upon completion of the course, the students will be able to

- CO1: explain the features, architecture and platforms of IoT
- CO2: experiment with various sensors for making IoT product
- CO3: analyze various applications and communication techniques of IoT
- CO4: asses required mathematical libraries for Arduino
- CO5: develop real time IoT Application using Map Reduce Model

Course Code: 20PAC315**Course Name: OPEN SOURCE TECHNOLOGY**

Upon completion of the course, the students will be able to

- CO1: explain the features of Angular, data binding and routing
- CO2: apply the various styles and events of Angular
- CO3: compare Java Script with Type script and directives, components, services
- CO4: estimate the importance of pipes, HTTP Request and NodeJS
- CO5: design an interactive web page using Angular and Node JS

Course Code: 20PAC316**Course Name: MACHINE LEARNING**

Upon completion of the course, the students will be able to

- CO1: explain the basics of python, object oriented concepts and data analytics
- CO2: analyze the various kinds of data for machine learning
- CO3: compare the types of libraries and data analytics
- CO4: asses appropriate machine learning algorithms
- CO5: discuss the machine learning scheme using pandas and scikit

Course Code: 20PAC317**Course Name: PRACTICAL -V [IOT and ML LAB]**

Upon completion of the course, the students will be able to

- CO1: illustrate the basics of IoT and Machine learning algorithms
- CO2: apply the various sensors and required packages using Arduino
- CO3: compare the different types of visualization methods
- CO4: estimate the accuracy of the learning schemes
- CO5: design the circuit and to build machine learning models

Course Code: 20PAC318

Course Name: PRACTICAL – VI [OPEN SOURCE TECHNOLOGY LAB]

Upon completion of the course, the students will be able to

CO1: illustrate the basics of HTML, CSS, angular JS, data binding and routing
CO2: apply the various bootstrap classes, styles and events of angular JS

CO3: compare JavaScript with Typescript and directives, components, services

CO4: estimate the importance of event handling, pipes, HTTP Request, node

JS
CO5: design an interactive web page using Angular and node JS

Course Code: 20PAE101

Course Name: DATA MINING AND APPLICATIONS

Upon Completion of the course, the students will be able to

CO1: summarize commonly used databases and to illustrate data mining algorithms on biological data
CO2: apply data mining tools to analyze gene sequence databases

CO3: examine the issues in different kinds of data

visualization
CO4: decide the appropriate data mining functionalities

CO5: improve the efficiency of apriori algorithm and classification results

Course Code: 20PAE102

Course Name: MATHEMATICAL FOUNDATION FOR COMPUTER SCIENCE

Upon Completion of the course, the students will be able to

CO1: illustrate the knowledge of mathematical modeling

CO2: apply probability concepts to solve computer science

problems
CO3: classify the sets, relations, functions and

discrete structures
CO4: assess the use of propositions,

predicate formulae and statistics

CO5: develop the ability to solve the recurrence relations by using various methods

Course Code: 20PAE203

Course Name: ICT TOOLS

Upon completion of the course, the students will be able to

CO1: illustrate the uses of ICT tools, Google account, word processing, presentation and spread sheets

CO2: make use of Google Calendar, Docs, Slides, Sheets, Translator and forms

CO3: examine the working principles of blogger and forms

CO4: interpret the applications of Google Classroom for ICT enabled learning

CO5: create forms, docs, sheets, slides, folders in Google Drive

Course Code: 20PAE304
MANAGEMENT

Course Name: SOFTWARE PROCESS

Upon Completion of the course, the students will be able to

- CO1: understand the processes of software life cycle models and governance in software development environment
- CO2: identify the required software process tools and current trends in software development
- CO3: analyse the metrics, methodologies and teams of software development
- CO4: appraise the software deployment strategies, dependencies and contracts
- CO5: build the software process management with quality assurance and process intelligences

Course Code: 20PAE305
COMPUTING

Course Name: BIG DATA AND CLOUD

Upon completion of the course, the students will be able to

- CO1: explain the Big Data technologies and Cloud Computing Types
- CO2: identify the use of NoSQL and Cloud Computing in Big Data
- CO3: compare traditional data vs. big data, top analytical tools and cloud models
- CO4: interpret the importance of Hadoop, Kafka, MongoDB, and impacts of cloud
- CO5: elaborate the functionalities of Big Data with Cloud

Course Code: 20PAC106, 20PAC213 and 20PAC319
Course Name: COMPREHENSION AND *viva voce*

Upon completion of the course, the students will be able to

- CO1: explain comprehensively to answer questions from all the courses of the semester
- CO2: apply oral presentation skills by answering questions in precise and concise manner
- CO3: analyze the significant ideas of the courses studied
- CO4: appraise the level of understanding in the subjects
- CO5: develop confidence and inter-personal skills

Course Code: 20PAC420
INTERNSHIP

Course Name:

Upon completion of the Course, the students will be able to

- CO1: demonstrate the latest concepts and emerging trends in IT industry
- CO2: apply the curriculum knowledge in industry applications
- CO3: analyse the scope of emerging technologies in IT industry
- CO4: assess the strength of recent technologies and choose an apt technology for real time applications
- CO5: develop a real time application using recent technologies

Course Code: 20PAC421
viva voce

Course Name: PROJECT AND

Upon completion of the Course, the students will be able to

- CO1: find project goals, constraints, deliverables, performance criteria, and control needs in consultation with the end users
- CO2: plan Software Requirements Specification (SRS) for a real time application
- CO3: analyze project management knowledge, processes, lifecycle, tools and techniques to provide solutions to the problems
- CO4: assess project management practices including testing to meet the requirements of industry needs
- CO5: develop the product and present the findings in report format