V. S. M. COLLEGE (A): RAMACHANDRAPURAM

B.SC MPCS-COURSE OUTCOMES

B.SC MATHEMATICS

DIFFERENTIATION EQUATIONS

CO1: Able to solve first order differential equations

CO2: Able to perform step-by-step analysis to solve the differential equations using an appropriate method.

CO3: Create and analyze mathematical models using higher order differential equations to solve application problems such as harmonic oscillator and circuits.

CO4: Evaluate first order differential equations including separable, homogeneous, exact, and linear.

SOLID GEOMETRY

CO1: To understand the concepts & advance topics related to two & three dimensional geometry.

CO2: Geometry briefly is used in various daily life applications such as surveying, astronomy, navigation and building and much more.

CO3: Compare the 2D and 3D objects and able to find angles , areas, plane equations ,etc

CO4: Find family of spheres Passing through a circle , tangent planes and normal lines to a sphere.

ABSTRACT ALGEBRA

CO1: Present the relationships between abstract algebraic structures with familiar numbers systems such as the integers and real numbers.

CO2: Generate groups given specific conditions and knowledge of use various canonical types of groups

CO3: Analyze and demonstrate examples of subgroups, normal subgroups and quotient groups

CO4: Develop the ability to form and evaluate conjectures

REAL ANALYSIS

CO1: Use the definitions of convergence as they apply to sequences, series, and functions

CO2: Demonstrate an understanding of limits and how they are used in sequences, series, differentiation and integration.

CO3: Determine the continuity, differentiability, and integrability of functions defined on subsets of the real line

CO4: Illustrate the effect of uniform convergence on the limit function with respect to continuity, differentiability, and inerrability

ANALYTICAL SKILLS (FOUNDATION COURSE)

CO1: Making real-time decisions by rapidly assessing the facts and assumptions
CO2: Identifying logical errors, false conclusions and unsubstantiated assertion
CO3: Eliciting information from other using tactful and insightful questioning techniques
CO4: Detecting and taking definitive action to prevent potential problems

RING THEORY & VECTOR CALCULUS

CO1: Integrate functions of several variables over curves and surfaces
CO2: Present concepts and properties of various algebraic structures.
CO3: Discuss the importance of algebraic properties relative to working within various number systems
CO4: Calculate and interpret derivatives in up to three dimensions.

LINEAR ALGEBRA

CO1: Identify and construct linear transformations of a matrix.
CO2: Compute and use Eigen vectors and Eigen values
CO3: Determine the rank, determinant, Eigen values and eigenvectors, diagonalization, and different factorizations of a matrix
CO4: Characterize linear transformations as onto, one-to-one

LAPLACE TRANSFORMS

CO1: An understanding of Fourier series and Laplace Transform to solve real world problems.
CO2: Laplace transform is used for the analysis of linear time-invariant systems
CO3: Analyze and solve engineering problems using Laplace Series
CO4: Approach more advanced aspects of transform methods

NUMERICAL ANALYSIS

CO1: Understand the theoretical and practical aspects of the use of numerical analysis.
CO2: The course will also develop an understanding of the elements of error analysis for numerical methods and certain proofs.
CO3: Establish the limitations, advantages, and disadvantages of numerical analysis
CO4: Analyse and evaluate the accuracy of common numerical methods

NUMBER THEORY

CO-1: Understand the logic and methods behind the major proofs in Number Theory
CO-2: Construct mathematical proofs of statements and find counterexamples to false statements in Number Theory.
CO-3: Determine multiplicative inverses, modulo n and use to solve linear congruence
CO-4: Appropriately integrate technology into mathematical processes

GRAPH THEORY

CO-1: Explain graph theory in a coherent and technically accurate manner
CO-2: Demonstrate knowledge of the syllabus material
CO-3: Reason from definitions to construct mathematical proofs
CO-4: Define and relate basic notions in graph theory

INTEGRAL TRANSFORMS

CO-1: Able to know the use of Laplace transform in system modeling, digital Signal processing, process control, solving Boundary Value Problems

CO-2: Apply Fourier and Laplace transform in solving ODEs and PDEs

CO-3: To analyze properties of special functions by their integral representations and Symmetries.

CO-4: Students will gain a range of techniques employing the Laplace and Fourier Transforms in the solution of ordinary and partial differential equations.

SPECIAL FUNCTIONS

CO-1: Understand purpose and functions of the gamma and beta functions, Fourier series and Transformation

CO-2: Determine types of PDEs which may be solved by application of special functions.

CO-3: Analyze properties of special functions by their integral representations & symmetries.

CO-4: Evaluate different types of integral calculus problems and Fourier series to solve differential equations

ADVANCED NUMERICAL ANALYSIS

CO-1: Understand the theoretical and practical aspects of the use of numerical analysis

CO-2: Apply appropriate theories, principles and concepts relevant to Numerical Analysis

CO-3: Identify the suitable computational technique for a specific type of problems

CO-4: evaluate the literature within the field of Numerical Analysis, analyze and interpret information from a variety of sources relevant to Numerical Analysis

PRINCIPLES OF MECHANICS

CO-1: Develop an understanding of the principles of dynamics

CO-2: Apply Kepler's laws to solve the problems

CO-3: Analyze problems in a systematic and logical manner, including the ability to draw free-body diagrams of rigid body.

CO-4: An ability to calculate centroids and moments of inertia.

FLUID MECHANICS

CO-1: Understand stress-strain relationship in fluids, classify their behaviour .

CO-2: Apply Bernoulli principle and compute pressure drop in flow systems of different configurations

CO-3: Analyze the performance aspects of fluid machinery specifically for centrifugal pump and reciprocating pump

CO-4: Evaluate the pressure distribution for incompressible fluids

APPLIED GRAPH THEORY

CO-1: Explain about graph theory in a coherent and technically accurate manner.

CO-2: Demonstrate knowledge of the graph theory

CO-3: Validate and critically assess a mathematical proof

CO-4: Reason from definitions to construct mathematical proofs;

B.SC PHYSICS

MECHANICS & PROPERTIES OF MATTER

CO1: To understand basic theories related with properties of matter and its applications to determine values of various physical quantities associated with matter.

CO2: Be able to apply knowledge of the properties of matter to explain natural physical processes and related technological advances.

CO3: Be able to solve relevant theoretical problems and use their conceptual understanding of the basic theories of properties of matter.

CO4: To derive equations of various theorems and find the result of various experiments related with properties of matter.

MECHANICS & PROPERTIES OF MATTER LAB

CO1: To develop basic skills to perform experiments to understand the concept from existing theories of properties of matter.

CO2: To perform experiments and interpret the result of observations.

CO3: To design experiments and acquire data in order to explore physical principles, effectively communicate results and critically evaluate related scientific studies.

CO4: To provide an intellectually stimulating environment to develop skills and interest of students to the best of their practical.

WAVES & OSCILALTIONS

CO1: To learn about fundamentals of verbal and mathematical concepts of waves and oscillations

CO2: We should make the students to know their skills required to get the information from the syllabus and use them in a proper way

CO3: Ability to accept their critical thinking and how to solve the problems in all the basic concepts

CO4: Students have to understand the subject and should develop their skills up to their knowledge

WAVES & OSCILALTIONS LAB

CO1: Students will be able to understand the principal and production of experimentally and note the results in observations and know the experimental procedures.

CO2: Students should recognize their ability to apply their knowledge came from theory and practicals to experimental physics

CO3: Students to apply the theories and practicals to solve their real time problems

CO4: Students should recognize the value of concepts and significance of various physical phenomena.

WAVE OPTICS

CO1: Understand the nature of light and principles of Laser and holography.

CO2: Analyze the intensity variation of light due to interference, diffraction and polarization.

CO3: Solve problems in Optics by selecting the appropriate equations and performing numerical or analytical calculations.

CO4: Student can able to operation of optical devices including polarizers, interferometers,and Lasers.

WAVE OPTICS LAB

CO1: Understand the phenomena of dispersion of light, interference, diffraction and polarization by conducting experiments in dark room.

CO2: Analyse,interpret and communicate results from Laboratory experiments, orally or in a written laboratory report.

CO3: Student can able to calculate the wavelength of given source of light and determination of refractive indices of different materials by using the above phenomena.

CO4: After completion of this lab student can attain knowledge about interference , diffraction patterns and operation of different Lasers.

THERMODYNAMICS AND RADIATION PHYSICS

CO1: To Read, Understand and interpret physical information –verbal, mathematical and graphical concepts of Thermodynamics.

CO2: To Impact skills required to gather information from resources and use them.

CO3: Ability to employ critical thinking and efficient problem solving skills in all the basic areas

CO4: Students would have developed skills and enthusiasms to the best of their potential.

THERMODYNAMICS AND RADIATION PHYSICS LAB

CO1: Students will be able to Perform experiments and interpret the results of observation, including making an assessment of experimental uncertainties.

CO2: They develop the ability to apply the knowledge acquired in the classroom and laboratories to specific problems in theoretical and experimental Physics.

CO3: To apply the theories learnt and the skills acquired to solve real time problems

CO4: To understand the concepts and significance of the various physical phenomena

ELECTRICITY, MAGNETISM & ELECTRONICS

CO1: To learn about Gauss law and solve the electric field and magnetic field for various geometric objects and to learn basic electronic concepts in analog and digital theory.

CO2: To be Explain all the topics of Experiments, Concepts and Derivations to the student

CO3: Apply the principles of electronics in day to day life.

CO4: Encourage all the students to study higher educational courses in reputed institutes and to enrich the students with creative, logical and analytical skills and to motivate the students towards research side.

ELECTRICITY, MAGNETISM & ELECTRONICS LAB

CO1: To provide a comprehensive understanding of electronic devices and circuits.

CO2: Know the characteristics of diodes, transistors, and logic gates.

CO3: Design simple circuits and mini projects.

CO4: To understand the working of diode and transistor.

MODERN PHYSICS

CO1: To Create awareness on the topics of Atomic & Molecular Physics, Quantum mechanics, Nuclear Physics, and Solid state physics.

CO2: To be Explain all the topics of Experiments, Concepts and Derivations to the student.

CO3: Explain the basic principles of quantum mechanics and apply to Atomic, Molecular structure of energy levels etc..

CO4: Motivate all the students to pursue PG courses in reputed institutes and to endow the students with creative and analytical skills; this will equip them to become entrepreneurs.

MODERN PHYSICS LAB

CO1: To understand the connections of logic gates (AND, OR and NOT) using diodes and transistors. And verification of De Morgan's Theorems . Experimental verification of universal gates.

CO2: Student able to observe the practical to verify the truth tables behind how the logic operation was done.

CO3: Student can used to apply in different electronic circuits.

CO4: To motivate the students to pursue PG courses in reputed institutes and after graduation who excel in the competencies and values required for leadership to serve rapidly to global community.

ANALOG AND DIGITALELECTRONICS

CO1: To experience and understand basic physical fundamentals of Analog and Digital electronics and the key vocabulary to describe them:

CO2: To Apply conceptual understanding of the Electronics to general real-world situations.

CO3: To Gain a knowledge and understanding of fundamental physical concepts like amplifiers , linear integrated circuits, semiconductor devices.

CO4: Students can Apply an understanding of these concepts to various systems and devises. Like FET, MOSFET, DIGITAL IC'S.

ANALOG AND DIGITALELECTRONICS LAB

CO1: To Participate in the methodology by performing lboratory exercises..

CO2: Students can acquire The necessary electronic skills to produce a measurable signal from various sources

CO3: Students will gain the ability to operate basic instruments in Electronics and to prepare laboratory reports describing the result of experiments

CO4: Students will Develop a basis for future learning and work experience

INTRODUCTION TO MICROPROCESSORS AND MICROCONTROLLERS

CO1: To Read, understand and interpret physical information abour micro processors and micro controllers.

CO2: The students should have developed their understanding of core Physics by covering a range of topics.

CO3: The students should have attained a common level in embedded systems.

CO4: To Read, understand and interpret physical information abour micro processors and micro controllers.

INTRODUCTION TO MICROPROCESSORS AND MICROCONTROLLERS LAB

CO1: Students can Perform experiments and interpret the results of observation.

CO2: Students can Participate in the methodology by performing laboratory exercises

CO3: They can Apply an understanding of these concepts to various systems and devices, they can apply number conversions like binary to digital , decimal concersions

CO4: To Understand the relationship between observation and theory and their use in building the basic concepts of programming languages.

COMPUTATIONAL METHODS AND PROGRAMMING

CO1: To Experience and deeply understand selected fundamental principles and the key vocabulary to describe it.

CO2: To Understand the basic structure of the C – rogramming, declaration andUsageof Variables, Constants andOperators.

CO3: They can Employ conceptual understanding to make predictions, and then approach the problem mathematically.

CO4: To Solve equations containing exponential, logarithmic, quadratic, linear and non-linear equations

COMPUTATIONAL METHODS AND PROGRAMMING LAB

CO1: Students can Understand the relationship between observation and theory and their use in building the basic concepts of modern physics.

CO2: Students Understand how major concepts developed and changed over time.

CO3: They Explore important connections between theory, experiment, and current applications.

CO4: They will Develop a basis for future learning and work experience.

ELECTRONIC INSTRUMENTATION

CO1: To understand the basic measurements of Instruments (accuracy, precision, range,resolution, sensitivity and errors)

CO2: They can Apply the knowledge in calibrating the voltmeter, ammeter and measure the internal resistance by using Potentiometer.

CO3: Students can Test and troubleshoot electronic circuits (with respect to input impedance and sensitivity) in measuring voltage with multimeter and Electronic Voltmeter.

CO4: They can Measure the appropriate parameters (Voltage,Time Period, Frequency and Phase angle).

ELECTRONIC INSTRUMENTATION LAB

CO1: To Understand the theory, working principle, specifications and significance of Multimeter

CO2: They are able to measure the electrical parameters (Voltage-A.C & D.C, Current-A.C &D.C and Resistance.

CO3: To acquire knowledge and be able to make experiments on cathode ray oscilloscope

CO4: To learn the usage of electrical systems and be able to acquire a wide range of problem solving skills.

MATERIALS SCIENCE

CO1: To read and understand the use of materials to describe the basic structure of materials at molecular,macroscopic, microscopic scales

CO2: To analyse mathematical methods focuses on the methodologies, processes techniques and mathematical aids in the crystalline and physical properties of polycrystaline materials

CO3: Materials such as semiconductors,metals, composites,nano,carbonsmake our life easier.They are the sources of industrial growth and technological changes

CO4: Students should understand diffusion and electro chemical process in materials.and slove the problems.

MATERIALS SCIENCE LAB

CO1: Students will be able to learn the experimental procedures in properties of magneti. Materials and dielectrics.

CO2: Perform experiments on any materials to identify strength of given objects

CO3: Ability to operate basic instruments in materials science and to prepare laboratory reports describing the result of experiments

CO4: Students should adopt to interpret the data from experiments and by using these practicals they should try to do mini projects.

FUNDAMENTALS OF NANOSCIENCE

CO1: Will be able to acquire a knowledge about the importance of size dependent phenomenon.

CO2: Analyze the difference between top down and bottom up techniques for nanomaterial fabrication

CO3: Will be able to apply nano technology in bio- medical field, optical field and in microelectronic field

CO4: Will identify the different types of polymers and their applications in various fields.

FUNDAMENTALS OF NANOSCIENCE LAB

CO1: Students will be able to perform experiments on nano particles and interpret the results of observations

CO2: They should develop thier skills in the development of nanoparticles,gas sensors

CO3: Students have the ability to evaluate research and academic publications and to work independently with reasearch.

CO4: Students need to plan and carry out large scale projects logically and efficiently

SYNTHESIS AND CHARACTERIZATION OF NANOMATERIALS

CO1: To learn and understand the physical and chemical methods available for synthesis nanostructured materials

CO2: Students should analyse the mechanical properties of bulk nanostructured metals and alloys and carbon nanotubes.

CO3: Students would have to learn how to Apply the electronic microscopic and scanning probe microscopy to characterize the nano materials

CO4: Students sholud explore different kinds of polarization and it's effects on dielectric constants.

SYNTHESIS AND CHARACTERIZATION OF NANOMATERIALS LAB

CO1: Students should experience the different techniques for nano material coatings

CO2: Analyse the success and failure of free electron theroy the Origin of band gap and hall effect.

CO3: Ability to employ how to interpret the thermal dielectric piezoelectric behaviours of materials.

CO4: Students should have knowledge on various types of nano materials and asses the specimen preparation methods for various experiments.

APPLICATIONS OF NANOMATERIALS AND DEVICES

CO1: To study and understand the length of scales that defines nano for metals, semiconductor materials,microelectromechanical systems,electronic structure of nano crystals.

CO2: Students sholud have the ability to develop nano materials with a focus on fundamentals fabrication characterization and applications

CO3: To impact skills required from the subject of nano materials and use the in a correct way

CO4: Students should understand the concepts like mechanical properties of solids,surface modification of nano fibers with nano materials to the best of their knowledge.

APPLICATIONS OF NANOMATERIALS AND DEVICES LAB

CO1: Students have to know to design computing model of nanostructured devices and illustrate fabrication of nano electronic devices and sensors by doing experiments

CO2: They should develop their knowledge to apply medical implants for fast curation

CO3: Ability to demonstrate various tools used for design of MEMS and NEMS

CO4: Students have to take initiative step to classify micro electronics and micro systems and various substrate materials of micro electromechanical system and nano electromechanical system.

RENEWABLE ENERGY

CO1: Students acquire knowledge about the environmental aspects of non-conventional energy resources. In Comparison with various conventional energy systems.

CO2: Students should known how to establish a context for sustainability and energy.

CO3: Students should apply their acquired knowledge in decreasing the pollution levels.

CO4: Students have to understand and to innovate new kinds of generating energy with renewable sources with no wastage.

RENEWABLE ENERGY LAB

CO1: Students will be able to understand the principal and production of energies experimentally and observe the results.

CO2: Student should analyze the working of solar cell, and solar cooker.

CO3: Students applied their theoretical and practical skills in to solve the real time problems.

CO4: They understand the outline division aspects and utilization of renewable energy sources for both domestics and industrial application

SOLAR THERMAL AND PHOTOVOLTAIC ASPECTS

CO1: Students should obtain the comprehension of solar radiation, characteristics of radiative materials, fabrication of solar cells.

CO2: Understood and acquired fundamental knowledge on the science and engineering of energy technologies and systems.

CO3: Students become capable of analysis and design of energy conversion systems.

CO4: To prepared the students for successful career in the energy industry, energy service companies, energy utility and consultancy agencies and in the academic and R&D institutions.

SOLAR THERMAL AND PHOTOVOLTAIC ASPECTS LAB

CO1: To gain knowledge about the solar flat plate collector, air dryer unit, Photo voltaic panel.

CO2: Students analyze the working of series and parallel combination of solar photovoltaic cells.

CO3: Students applied their theoretical learning's in solar power farms, roof top solar panels, satellites'.

CO4: Understood and acquired fundamental knowledge on the science and engineering of energy technologies and systems.

WIND, HYDRO AND OCEAN ENERGIES

CO1: Students got the awareness about the Wind generation, conversion, hydro power system, tidal energy.

CO2: The students are studying about sources of biomass and different biomass energy conversion systems. The students are able to solve simple problems related to gasifies.

CO3: Students has to apply their knowledge in mini and small hydro power systems.

CO4: The students are studying solar energy and wind energy related systems and Students are getting basic concepts about design of solar and wind energy systems and they are solving problems related to such technologies.

WIND, HYDRO AND OCEAN ENERGIES LAB

CO1: To learn about anemometer, wind generator.

CO2: Students made analysis on vertical and horizontal axes of wind turbine rotors, density of water on the output power of hydroelectric generator.

CO3: Applied their theoretical learning's in estimating the wind power , and evaluating the amplitude and frequency of wind energy.

CO4: Students understood the characteristics of wing energy.

ENERGY STORAGE DEVICES

CO1: Students got to know about electro chemical, magnetic, energy storage devices, fuel cells.

CO2: Students got to know about the lithium batteries, super conducting magnetic storage devices.

CO3: Students should apply their acquired knowledge in decreasing the size of device an increasing the memory.

CO4: Understand battery management systems and state-of-charge estimation.

ENERGY STORAGE DEVICES LAB

CO1: To learn about DC-AC inverter and DC-DC converters.

CO2: Students made analysis on charge and discharge characteristics of storage battery.

CO3: Applied their theoretical learning's in estimating the charging characteristics of a Ni-Cd battery using solar photovoltaic panel.

CO4: Students understood and learn about the hybridization of various energy conversion devices for vehicle electrification.

B.SC COMPUTER SCIENCE

COMPUTER FUNDAMENTALS & PHOTOSHOP

CO1: To explore the basic knowledge on computers and Photoshop.
CO2: To learn the concepts and able to work on Adobe Photoshop application.
CO3: To get ability to create and edit photos.
CO4: To apply the gained knowledge in the classroom to design and edit Banners and Visiting cards etc...

PHOTOSHOP LAB

CO1: To learn the concepts and able to work on Adobe Photoshop application.
CO2: To understand how Photoshop will help you create your own successful images.
CO3: Gained knowledge to design and implement own Visiting card,Brouchers.
CO4: With the help of this practical's to design basic editing in images.

COMPUTER FUNDAMENTALS AND OFFICE TOOLS (ICT-1):

CO1: Understand the computer basics.
CO2: Understand the use of Microsoft office programs to create documents.
CO3: By using Microsoft office how to create personal and academic documents by following standards.
CO4: Applying the skills & concepts of basic use of Microsoft office in work place.

PROGRAMMING IN 'C'

CO1: To appreciate and understand the working of digital computer.
CO2: Design an Algorithm and Flowchart for a given problem.
CO3: By using C concepts to constructs the programs in structural way.
CO4: To apply the knowledge to Design, develop and execute the programs written in 'C'.

PROGRAMMING IN 'C' LAB

CO1: To know about what is software and how to installed in system or pc.
CO2: To learn about how to write c program and how execute the program.
CO3: To apply the knowledge to write the program in effectively.
CO4: Do this practical to know how to implement c program.

OBJECT ORIENTED PROGRAMMING USING JAVA:

CO1: Understand Fundamentals of Object Oriented Programming in Java, including defining classes, invoking methods, using class libraries, etc.
CO2: Demonstrate the implementation of inheritance (multilevel, hierarchical and multiple) by using extend and implement keywords**.**
CO3: Have the ability to write a computer program to solve specified problems.
CO4: Understand the process of graphical user interface design and implementation using AWT

OBJECT ORIENTED PROGRAMMING USING JAVA LAB

CO1: Implement java classes from specifications, create and use Objects from pride fined class libraries.

CO2: To understand and apply inheritance, polymorphism, generic structures in building reusable code.

CO3: To explain the principles of the Object Oriented Programming paradigm specifically including abstraction, encapsulation, inheritance and polymorphism.

CO4: Implement interfaces, inheritance, polymorphism, exception handling, file IO and multithreading as programming techniques for application development.

DATA STRUCTURES

CO1: Understand basic data structures such as arrays, linked lists, stacks and queues.

CO2: Ability to have knowledge of tree and graphs concepts.

CO3: Compare and contrast the benefits of dynamic and static data structures implementations.

CO4: Identify the appropriate data structures and algorithms for solving real world problems.

DATA STRUCTURES USING JAVA LAB

CO1: Be able to design and analyze the time and space efficiency of the data structures.

CO2: To learn elementary data structures such as Stacks , Queues, Linked lists, Trees and Graphs.

CO3: Have practical knowledge on the application of data structures.

CO4: To discuss different data structures to represent the real world problems.

DATA BASE MANAGEMENT SYSTEM

CO1: Ability to design the Data Models

CO2: Ability to design entity relationship and convert entity relationship diagrams into RDBMS

CO3: "Students should be able to design the database schema with the use of appropriate data types for storage of data in database."

CO4: Students should be able to create, manipulate, query and formulate SQL queries on the respect data

DATABASE MANAGEMENT SYSTEM LAB

CO1: "Design and implementation of ER diagrams for given database and a database schema for given problem by following the concepts of key constraints"

CO2: "Formulate queries using SQL DML/DDL/DCL commands."

CO3:"Creating simple database by using the basics of SQL & construct queries to Analyze the database, retrieve records, to perform the manuplications on BD and to interact with DB"

CO4: Able to write simple programs in PL/SQL.

SOFTWARE ENGINEERING

CO1: Software Metrics and Project Management concealments skills that are required to ensure successful medium and large scale software projects.

CO2: Introduces theories, models, and techniques that provide a basis for the software development life cycle.

CO3: It observes Requirements Elicitation, Project Management, Verification and Validation and Management of Large Software Engineering Projects

CO4: Describe components, rules and design evaluation and Select various testing techniques and determine its quality.

PROJECT-1

CO1: To develop SRS, reliability testing reports, and other software engineering documents in the project report.

CO2: Understand the various processes involved in the engineering of software through practical implementation

CO3: Understand how to develop a software result for the given large problem

CO4: This includes all the stages of software engineering and processes involved in the project.

OPERATING SYSTEMS

CO1: Analyze the concepts of processes in operating system and illustration of the scheduling of processor for a given problem instance.

CO2: Identify the dead lock situation and provide appropriate solution so that protection and security of the operating system is also maintained.

CO3: Analyze memory management techniques, concepts of virtual memory and disk scheduling

CO4: Understand the implementation of file systems and directories along with the interfacing of IO devices with the operating system.

OPERATING SYSTEMS LAB

CO1: Implement process scheduling algorithms

CO2: Using memory management schemes implement programs

CO3: To know about the file allocation techniques and page replacement algorithms

CO4: Implement disk scanning algorithms and deadlock situations

COMPUTER NETWORKS

CO1: Identify the different components in a Communication System and their respective roles.

CO2: Describe the technical issues related to the local Area Networks

CO3: Identify the common technologies available in establishing LAN infrastructure.

COMPUTER NETWORKS LAB

CO1: Identify and use various networking components Understand different transmission media and design cables for establishing a network

CO2: Implement any topology using network devices

CO3: Understand the TCP/IP configuration for Windows and Linux

CO4: Implement device sharing on network

WEB TECHNOLOGIES

CO1: To understand and evaluate web application architecture and technologies.

CO2: To design static web pages and interactive web applications using HTML and Cascading Style Sheets.

CO3: To develop a Dynamic web pages by the use of javascript and DHTML.

CO4: To create well formed/valid XML document.

WEB TECHNOLOGIES LAB

CO1: Analyze a web page and identify its element and attributes.
CO2: To create interactive web pages using HTML and Style Sheet.
CO3: To Create, Modify and Format the contents of webpage with Cascading Style Sheets.
CO4: Build dynamic web pages using JavaScript (client side programming).

FOUNDATIONS OF DATA SCIENCE:

CO1: Able to apply fundamental algorithmic ideas to process data.
CO2: Learn to apply hypotheses and data into actionable predictions
CO3: Document and transfer the results and effectively communicate the findings using visualization techniques.

FOUNDATIONS OF DATA SCIENCE LAB

CO1: Able to apply fundamental algorithmic ideas to process data.
CO2: Document and transfer the results
CO3: Apply fundamental algorithmic ideas to process data.

BIG DATA TECHNOLOGY

CO1: Learn tips and tricks for Big Data use cases and solutions
CO2: Learn to build and maintain reliable, scalable, distributed systems with Apache Hadoop.
CO3: Able to apply Hadoop ecosystem components.
CO4: Design and implement algorithms to analyze Big data like streams, Web Graphs and Social Media data and construct recommendation systems

BIG DATA TECHNOLOGY LAB

CO1: Demonstrate capability to use Big Data Frameworks like Hadoop
CO2: Program applications using tools like Hive, pig, , NO SQL and MongoDB for Big data Applications
CO3: Construct scalable algorithms for large Datasets using Map Reduce techniques
CO4: Implement algorithms for Clustering, Classifying and finding associations in Big Data

PROJECT - 2

CO1: To develop SRS, reliability testing reports, and other software engineering documents in the project report.
CO2: Understand the various processes involved in the engineering of software through practical implementation
CO3: Understand how to develop a software result for the given large problem
CO4: This includes all the stages of software engineering and processes involved in the project.

DISTRIBUTED SYSTEMS

CO1: Create models for distributed systems.
CO2: Apply different techniques learned in the distributed system
CO3: Analyse different algorithms and techniques for the design and development of distributed systems subject to specific design and performance.

DISTRIBUTED SYSTEMS LAB

CO1: Design and develop distributed programs using sockets and RPC/RMI

CO2: Differentiate between different types of faults and fault handling techniques inorder to implement fault tolerant systems

CLOUD COMPUTING

CO1: Compare the strengths and limitations of cloud computing

CO2: Identify the architecture, infrastructure and delivery models of cloud computing

CO3: Apply suitable virtualization concept

CO4: Choose the appropriate cloud player , Programming Models and approach

CLOUD COMPUTING LAB

CO1: Define & implement Virtualization using different types of Hypervisors

CO2: Examine the installation and configuration of Open stack cloud

CO3: Analyze and understand the functioning of different components involved in Amazon web services cloud platform.

CO4: Design & Synthesize Storage as a service using own Cloud

PROJECT - 2

CO1: To develop SRS, reliability testing reports, and other software engineering documents in the project report.

CO2: Understand the various processes involved in the engineering of software through practical implementation

CO3: Understand how to develop a software result for the given large problem

CO4:This includes all the stages of software engineering and processes involved in the project.

PHP & MYSQL, WORDPRESS

CO1: How to code a PHP application

CO2: How to use PHP with a MySQL database

CO3: How to work with form data.

CO4: How to work with cookies and sessions

PHP & MYSQL, WORDPRESS LAB

CO1: To understand how server-side programming works on the web.

CO2: To use PHP built-in functions and creating custom functions

CO3: To know how to create a database in PHP My Admin.

CO4: To know how to read and process data in a MYSQL database

ADVANCED JAVA SCRIPT

CO1: Create a dynamic website using advanced features of JavaScript and create a website with good and attractive design

CO2: "Understand concepts commonly used in dynamic language programming, such as introspection, higher-order functions, and closures."

CO3: Become adopt at implementing client-side interfaces through the use of the DOM, query and AJAX.

CO4: "Become familiar with common libraries and tools that are used in web application development"

ADVANCED JAVA SCRIPT LAB

CO1: To learn advanced JavaScript techniques and good standard coding conventions.

CO2: To ability to manipulate CSS with JavaScript to create applications using Dynamic HTML.

CO3: Modify CSS styles and presentation properties with JavaScript

CO4: To ability to create dynamic styles.

PROJECT - 2

CO1: To develop SRS, reliability testing reports, and other software engineering documents in the project report.

CO2: Understand the various processes involved in the engineering of software through practical implementation

CO3: Understand how to develop a software result for the given large problem

CO4: This includes all the stages of software engineering and processes involved in the project.

ENGLISH

GENERAL ENGLISH-1

CO1-The students attain a good knowledge on viewing society in inspirational way.

CO2-This also inspires the student to know the colonizing nature of developed countries.

CO3-Regarding poetry the philosophy of Robert frost and Nissim Ezekiel observation on society and his own life chances are shown as mirror to himself.

CO4-Regarding short stories the Lost child of Mulkaraj Anand and Loaded Dog of Henry Lawson gives a picture on respect of parents and affectionate lively The one act play of William Shakespeare's: The Merchant of Venice (Court Scene) provides good analyzing skills. The one act play of William Shakespeare's: The Merchant of Venice (Court Scene) provides good analyzing skills.

GENERAL ENGLISH-2

CO1-The students should attain good scientific point of view and their own hygienic idea on self.

CO2-Regarding poetry the music of autumn season and kishwar Naheed Poetry gives an excellent impression on their own Aesthetic sense.

CO3-The short stories of Ruskin Bond and R.K.Narayan's provide students a good idea on personalities in culture and civilization.

CO4-The one act play of Anton Chekhov: The Proposal present good humour for the students.

GENERAL ENGLISH-3

CO1-Regarding prose the students attain good idea on technology and how to improve public speaking.

CO2-Regarding poetry the students develop a good idea and respect for elders and their culture.

CO3-The short stories of Shashi Deshpande and Jhumpa Lahiri evaluate our own thoughts and dreams in reality.

CO4-The one act play Kanyasulkam provides how our culture prevailed in ancient times.

COMMUNICATION AND SOFT SKILLS-1

Co1- Attains a common level in Prefixes and Suffixes, compounding words, analogy, Synonyms and Antonyms and Phrasal verbs.

Co2-They could manage the Subject –verb agreement and could get knowledge on the Types of verbs.

Co3-Student could get command on Articles and Prepositions and can do number of exercises on Tense present and past aspects.

Co4-The Student will have a keen observation on Importance of Listening, Types of Listening Obstacles and strategies for effective listening.

COMMUNICATION AND SOFT SKILLS-2

Co1-Students attain a good level of understanding on the sounds of English.

Co2-Students could manage good intonation with beautiful word accent.

Co3-The speaking skills will be improved with good conversation, interview, presentation and public speaking.

Co4-The students possess good speaking skills with Role play, Debate and Group Discussion.

COMMUNICATION AND SOFT SKILLS-3

CO1-Students attain good soft skills with positive attitude, good body language and their own SWOT analysis. They develop good emotional intelligence with netiquette manners.

CO2-Students develop good paragraph writing with development of ideas and coherence with structure of paragraph.

CO3-Students develop a material idea on paraphrasing and Summarizing.

CO4-They learn techniques of paraphrasing and stages of Summarizing.

SANSKRIT

SANSKRIT POETRY

CO1: To identify and describe distinct charectristics of literary texts.
CO2: To analyze poetic works for their structure and meaning,using correct terminology.
CO3: To display a working knowledge of the genres of poetry by various writers from various cultures and historical eras.
CO4: To gain knowledge on effectively communicate ideas related to the poetic works during class and group activities.

SANSKRIT PROSE

CO1: To gain knowledge it is an important to know the prose forms from the Aranyakas and ancient Upanishads.
CO2:To gain ethical values by reading stories in Sanskrit prose like Panchatanta and Hitopadesa.
CO3:To Improve the knowledge and spoken skill.
CO4:To know the different varieties of people in conversation and inturn improve their knowledge and communication skill.

SANSKRIT GRAMMAR

CO1: By learning Sanskrit grammar one can write and speak correctly and effectively.
CO2: Communicationskills and vocabulary is developed while reading Sanskrit Grammar.
CO3: Able to read and write Devanagari script correctly.

DRAMA

CO1: To gain knowledge on the origin and development of Sanskrit drama .
CO2: To have Skill on conversational language(dialogue)
CO3: By reading Charectors in dramas one can gain knowledge on character building.

UPANISHADS

CO1: Importance of memory power through ancient oral teachings is recognised.

LITERATURE

CO1:By reading Sanskrit literature one can know the different types of literary aspects.

TELUGU

PAPER –I

OLD POETRY –

CO1: Students by studying read the old poetry, they got knowledge of gathering ethical values and improves the spoken skills.

CO2: To know how to write poems in Telugu

MODERN POETRY-

CO1: It improves creativity and imagination in writing poems and new trends in Modern Literature.

CO2: In poetry like Hiku, Mini kavita, and in prose to develop short stories in contemporary issues.

PROSE-

CO1: It improves story writing skills by reading of prose lessons the students will know the differences between old and new stories of telugu literature.

CO2: It helps to develop the sentence constructions in drafting.

GRAMMAR –

CO1: The Grammar knowledge improves the student's ability to understand Telugu language and Texts properly.

CO2: The Students have the better opportunities in the fields as Lyric writers, Script writers , Anchors, Oraters, in both Print and Electronic media.

HINDI

HINDI-1

CO1 To develop sensitivity towards use of Hindi in the process of communication

CO2 To have knowledge on grammatical aspects and punctuation marks for proper written communication

CO3 To Utilize digital literacy tools to develop grammar skills.

CO4 To Produce appropriate vocabulary and correct word forms to improve spoken and written communication in Hindi.

HINDI-2

CO1 To improve the language skills further - Listening, Speaking, Reading & Writing

CO2 To understand the moral values and life skills taught indirectly through the lessons - Poems, short stories, and essays

CO3 To equip oneself with the improved communicative Hindi skills - with practice in writing and speaking

CO4 To develop creative thinking by going through the poetry, short stories, plays, etc.

HINDI-3

CO1 To gain the ability to Produce appropriate vocabulary and correct word forms

CO2 To Demonstrate ability to think critically by analysing the prescribed lessons from socio-cultural perspective

CO3 To develop creative thinking by analysing the prescribed texts and attemping writing general essays in Hindi

CO4 To develop interest in Hindi Literature by appreciating the prescribed as well as external works of literature through regular reading