



BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE

(Approved by AICTE, New Delhi, Accredited by NAAC 'A' Grade
Permanently Affiliated to JNTUK, Kakinada)

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

BATCH: 2020-24

COURSE OUTCOMES

| CO# | COURSE OUTCOME | BLOOMS TAXONOMY LEVEL |
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| I YEAR I SEMESTER | | |
| COURSE NAME: COMMUNICATIVE ENGLISH (C111) | | |
| C111.1 | Classify and compare different things and cultures and behaviors of people from generation to generation | Understand |
| C111.2 | Select an inspiring personality and to achieve the new heights in personal and professional life | Apply |
| C111.3 | Apply Science and Technology to transform the lives despite physical disabilities and to invent latest Engineering tools for the needs of the Society. | Apply |
| C111.4 | Classify and compare the status quos of female writers and women in the 17th century with respect to modern era. | Understand |
| C111.5 | Actively take part in protecting environment and the rights of the underprivileged despite challenges in personal and public life. | Analyze |
| COURSE NAME: MATHEMATICS-I (C112) | | |
| C112.1 | Utilize mean value theorems to related to various engineering fields. | Apply |
| C112.2 | Solve the first order differential equations and able to apply physical problems. | Apply |
| C112.3 | Solve higher order linear differential equations with constant coefficient | Apply |
| C112.4 | Apply the knowledge of differential equations for electrical circuits, harmonic motion. | Apply |

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| C112.5 | Find the partial derivative of different orders, finding maxima and minima of function of two variable, three variables and functional dependence. | Evaluate |
| COURSE NAME: APPLIED CHEMISTRY (C113) | | |
| C113.1 | Explain the physical significance of optics and hence estimate the speed of light ,wave length ,refractive index by using interference. | Understand |
| C113.2 | Explain the resolving power of various optical instruments like grating, telescope and micro scope. | Understand |
| C113.3 | Explain about polarized light and optical activity using polarization and describe the construction and working of various lasers. | Understand |
| C113.4 | Develop various engineering applications involving electro magnetic fields. | Analyze |
| C113.5 | Apply the knowledge of basic quantum mechanics and summarize the importance of free electrons in determine the properties of metals. | Apply |
| COURSE NAME: FUNDAMENTALS OF COMPUTER SCIENCE (C114) | | |
| C114.1 | Discuss the basic rules of programming to construct algorithms, flowcharts, programs and to compile & debug programs in C. | Understand |
| C114.2 | Develop the various programs by using different types of operators, data types, two-way/ multi-way selection and iterative statements | Apply |
| C114.3 | Demonstrate the usage of arrays, strings and various types of user defined data types | Understand |
| C114.4 | <u>Design</u> and implements programs to analyze the different pointer applications and processor commands | Create |
| C114.5 | <u>Make use of</u> Files concepts and Standard functions, to decompose a problem into functions and to develop modular reusable code | Apply |
| COURSE NAME: COMPUTER ENGINEERING WORKSHOP (C115) | | |
| C115.1 | Assemble and disassemble components of a PC | Analyze |
| C115.2 | Construct a fully functional virtual machine, Summarize various Linux operating system commands | Apply |
| C115.3 | Secure a computer from cyber threats, Learn and practice programming skill in Github,Hackerrank, Codechef, HackerEarth etc | Apply |
| C115.4 | Recognize characters & extract text from scanned images, Create audio files and podcasts | Analyze |
| C115.5 | Create video tutorials and publishing, Use office tools for documentation, Build interactive presentations, Build websites, Create quizzes & analyze responses | Analyze |
| COURSE NAME: English Communication Skills Laboratory (C116) | | |

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| C1116.1 | Develop the nuances of Pronunciation and make use of International Phonetic Alphabet in order to improve pronunciation while Speaking and Listening. | Apply |
| C1116.2 | Divide the words properly into syllables and identify the word stress in di-syllabic, Poly-syllabic words. | Analyze |
| C1116.3 | Analyze and understand the stress in compound words, Stress Timed Rhythm and accent neutralizations while listening and speaking. | Analyze |
| C1116.4 | Classify the words into syllables and spell and stress them as per conventions. | Apply |
| C1116.5 | Identify the context and specific information while reading and listening to various pieces of texts. | Apply |

COURSE NAME: APPLIED PHYSICS LAB (C117)

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| C117.1 | Explain of radius of curvature of a given plano convex lens by Newton's rings.. | Understand |
| C117.2 | Determination of wavelengths of different spectral lines in mercury spectrum using diffraction grating in normal incidence configuration. | Apply |
| C117.3 | Explain of numerical aperture and acceptance angle of an optical fiber. | Understand |
| C117.4 | Determination of wavelength of Laser light using diffraction grating. | Apply |
| C117.5 | Estimation of Planck's constant using photo electric effect | Apply |

COURSE NAME:PROGRAMMING FOR PROBLEM SOLVING USING C LAB (C118)

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| C118.1 | Discuss the basic rules of programming to construct algorithms, flowcharts, programs and to compile & debug programs in C. | Understand |
| C118.2 | Develop the various programs by using different types of operators, data types, two-way/ multi-way selection and iterative statements | Apply |
| C118.3 | Demonstrate the usage of arrays, strings and various types of user defined data types | Understand |
| C118.4 | Design and implements programs to analyze the different pointer applications and processor commands | Create |
| C118.5 | Make use of Files concepts and Standard functions, to decompose a problem into functions and to develop modular reusable code | Apply |

I YEAR II SEMESTER

COURSE NAME: MATHEMATICS-II (C121)

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| C121.1 | Find Rank and Solve the linear system of equations by using different methods. | Apply |
| C121.2 | Find the inverse and power of a matrix by using Cayley Hamilton theorem. And also diagonalize the matrix by using various | Apply |

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| | methods. Finding Rank, Index, Signature and Nature of a Quadratic form. | |
| C121.3 | Solve the algebraic and transcendental equations by different methods. | Apply |
| C121.4 | Solve the system of simultaneous equations using numerical methods. | Apply |
| C121.5 | Apply Newton's forward and back ward interpolation and Lagrange's formulae for equal and unequal intervals. | Apply |
| COURSE NAME: APPLIED CHEMISTRY (C122) | | |
| C122.1 | Analyze the concept of improvement of impact strength of plastics materials | Analyze |
| C122.2 | Make use of Electrochemical series While preparing different cells | Apply |
| C122.3 | Analyze and interprets the formation of different nanomaterials | Apply |
| C122.4 | Summerize the preparation of Semiconductors, Analyze the application of liquid crystals and super conductors | Understannd |
| C122.5 | Obtain the Knowledge of computational chemistry molecular machines | Remember |
| COURSE NAME: COMPUTER ORGANIZATION (C123) | | |
| C123.1 | Explain about number systems, compliments from 4-bit codes and conversion from one Radix to other, boolean algebra various theorems and postulates | Apply |
| C123.2 | Construct various combinational logic circuits like Adders, Multiplexers, and build boolean functions | Analyze |
| C123.3 | Understood program Execution at low level using RTL and Micro Operations | Understand |
| C123.4 | Design Micro Programmed Control Unit and Contrast with Hardwired Control Unit | Analyze |
| C123.5 | Demonstrate the functions of Cache Memory and Virtual Memory | Apply |
| COURSE NAME: PYTHON PROGRAMMING (C124) | | |
| C124.1 | Develop programming skills in computer programming concepts like data types, conditional and looping statements | Apply |
| C124.2 | Design and implement Programs on strings | Create |
| C124.3 | Illustrates functions, modules and packages | Understand |
| C124.4 | Solve coding tasks related to the fundamental notions and techniques used in object-oriented programming | Apply |
| C124.5 | Solve Exceptions and GUI based programs | Apply |
| COURSE NAME: DATA STRUCTURES (C125) | | |

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| C125.1 | Analyse the computational efficiency of the algorithms for sorting and searching. | Analyze |
| C125.2 | Evaluate the use of linked structures and their representation in memory. | Evaluate |
| C125.3 | Explore the importance of queues and stacks, their representation in memory . | Evaluate |
| C125.4 | Evaluate polynomial expressions, postfix expression representation | Evaluate |
| C125.5 | Demonstrate different methods for traversing trees and graphs. | Apply |
| COURSE NAME: APPLIED CHEMISTRY LAB (C126) | | |
| C126.1 | Develop better understanding of titration | Apply |
| C126.2 | Explain the difference between Solubility and dissociation in water and apply this knowledge to acids and bases | Understand |
| C126.3 | Estimate the hardness of water in terms of calcium and magnesium ions | Evaluate |
| C126.4 | Apply safety rules in practice of laboratory investigations | Apply |
| C126.5 | Analyze the strength of acids and bases by using conductometric titration | Analyze |
| COURSE NAME: PYTHON PROGRAMMING LAB (C127) | | |
| C127.1 | Develop programming skills in computer programming concepts like data types, conditional and looping statements | Apply |
| C127.2 | Design and implement Programs on strings | Create |
| C127.3 | Illustrates functions, modules and packages | Understand |
| C127.4 | Solve coding tasks related to the fundamental notions and techniques used in object-oriented programming | Apply |
| C127.5 | Solve Exceptions and GUI based programs | Apply |
| COURSE NAME: DATA STRUCTURES LAB (C128) | | |
| C128.1 | Use various searching and sorting algorithms. | Apply |
| C128.2 | Demonstrate basic data structures like arrays, queues and linked lists. | Evaluate |
| C128.3 | Implement and demonstrate fundamental algorithmic problems including Tree traversals, graph traversals, and shortest paths. | Apply |
| COURSE NAME: ENVIRONMENT SCIENCE (C129) | | |
| C129.1 | Explain the ecosystem and it's function in the environment | Understand |
| C129.2 | Aware the importance of natural resources and it's conversation | Remember |
| C129.3 | Analyse the diversity of life on earth and it's importance | Analyze |
| C129.4 | Execute different programs in eco friendly way | Apply |
| C129.5 | Describe the different laws to protect our environment | Remember |
| II YEAR I SEMESTER | | |
| COURSE NAME: MATHEMATICS III (C211) | | |
| C211.1 | Find Rank and Solve the linear system of equations by using different methods. | Apply |

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| C211.2 | Find the inverse and power of a matrix by using Cayley Hamilton theorem. And also diagonalize the matrix by using various methods. Finding Rank, Index, Signature and Nature of a Quadratic form. | Apply |
| C211.3 | Solve the algebraic and transcendental equations by different methods. | Apply |
| C211.4 | Solve the system of simultaneous equations using numerical methods. | Apply |
| C211.5 | Apply Newton's forward and back ward interpolation and Lagrange's formulae for equal and unequal intervals. | Apply |
| C211.6 | Find the Quadrature, the solutions of ordinary differential equations by different formulae. | Apply |
| COURSE NAME: OBJECT ORIENTED PROGRAMMING THROUGH C++ (C212) | | |
| C212.1 | Apply basic features of C++ and explain object oriented programming concepts including identifying the features of C++ programming language | Apply |
| C212.2 | Design and implement programs using C++. | Create |
| C212.3 | Illustrate how to apply reusability in object oriented programming though C++. | Understand |
| C212.4 | Apply more advanced C++ features like polymorphism, binding, virtual functions | Apply |
| C212.5 | Apply generic programming using templates and incorporate exception handling in object oriented programs | Apply |
| COURSE NAME: OPERATING SYSTEMS (C213) | | |
| C213.1 | Define various generations of Operating System and functions of Operating System structure. | Understand |
| C213.2 | Analyze process scheduling algorithms and various IPC mechanisms. | Analyze |
| C213.3 | Analyze different page replacement methods and various File management techniques. | Analy |
| C213.4 | Understand the process synchronization, different ways for deadlocks handling. | Apply |
| C213.5 | Understand Linux and Android environment and behavior | Understand |
| COURSE NAME: SOFTWARE ENGINEERING (C214) | | |
| C214.1 | Identify suitable life cycle models to be used. | Understand |
| C214.2 | Compare conventional and agile software methods. | Analyze |
| C214.3 | Analyze the problem and create a model to the problem | Analyze |
| C214.4 | Translate a requirement specification to a design using an appropriate software engineering methodology. | Create |

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| C214.5 | Skills to design, implement, and execute test cases and perform debugging. | Apply |
| COURSE NAME: MATHEMATICAL FOUNDATIONS OF COMPUTER SCIENCE (C215) | | |
| C215.1 | Understand the skills in various solving mathematical problems | Understand |
| C215.2 | Apply mathematical principles and logic | Apply |
| C215.3 | Analyze knowledge of mathematical modeling and proficiency in using algebraic system. | Analyze |
| C215.4 | Solve mathematical calculations using techniques such as permutations and combinations | Create |
| C215.5 | Communicate effectively mathematical ideas/results verbally or in writing. | Evaluate |
| COURSE NAME: OBJECT ORIENTED PROGRAMMING THROUGH C++ LAB (C216) | | |
| C216.1 | Apply basic features of C++ and explain object oriented programming concepts including identifying the features of C++ | Apply |
| C216.2 | Design and implement programs using C++. | Create |
| C216.3 | Illustrate how to apply reusability in object oriented programming though C++. | Understand |
| C216.4 | Apply more advanced C++ features like polymorphism, binding, virtual functions etc., to build C++ programs. | Apply |
| COURSE NAME: OPERATING SYSTEMS LAB (C217) | | |
| C217.1 | Define various generations of Operating System and functions of Operating System structure. | Understand |
| C217.2 | Analyze process scheduling algorithms and various IPC mechanisms. | Analyze |
| C217.3 | Analyze different page replacement methods and various File management techniques. | Analyze |
| C217.4 | Understand the process synchronization, different ways for deadlocks handling. | Apply |
| C217.5 | Understand Linux and Android environment and behavior | Understand |
| COURSE NAME: SOFTWARE ENGINEERING LAB (C218) | | |
| C218.1 | Identify suitable life cycle models to be used. | Understand |
| C218.2 | Compare conventional and agile software methods. | Analyze |
| C218.3 | Analyze the problem and create a model to the problem | Analyze |
| C218.4 | Translate a requirement specification to a design using an appropriate software engineering methodology. | Create |
| C218.5 | Skills to design, implement, and execute test cases and perform debugging. | Apply |
| COURSE NAME: SKILL ORIENTED COURSE - I 1) (Applications of Python-Pandas) (C219) | | |

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| C219.1 | Explain how data is collected, managed and stored for processing | Evaluate |
| C219.2 | Determine the workings of various numerical techniques, different descriptive measures of Statistics, correlation and regression to solve the engineering problems | Evaluate |
| C219.3 | Apply some linear algebra operations to n-dimensional arrays | Apply |
| C219.4 | Solve common data wrangling and computational tasks in Python using Numpy | Create |
| C219.1 | Explain how data is collected, managed and stored for processing | Evaluate |

COURSE NAME: CONSTITUTION OF INDIA(C2110)

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| C2110.1 | Understand historical background of the constitution making and its importance. | Understand |
| C2110.2 | Understand the functioning of three of the government. | Understand |
| C2110.3 | Understand the value of fundamental rights and duties. | Understand |
| C2110.4 | Analyze the decentralization of power between central, state and local self government. | Analyze |
| C2110.5 | Apply the knowledge in strengthening of the constitutional institutions. | Applying |

II YEAR II SEMESTER

COURSE NAME: PROBABILITY AND STATISTICS (C221)

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| C221.1 | Find Rank and Solve the linear system of equations by using different methods. | Apply |
| C221.2 | Find the inverse and power of a matrix by using Cayley Hamilton theorem. And also diagonalize the matrix by using various methods. Finding Rank, Index, Signature and Nature of a Quadratic form. | Apply |
| C221.3 | Solve the algebraic and transcendental equations by different methods. | Apply |
| C221.4 | Solve the system of simultaneous equations using numerical methods. | Apply |
| C221.5 | Apply Newton's forward and back ward interpolation and Lagrange's formulae for equal and unequal intervals. | Apply |

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| C221.6 | Find the Quadrature, the solutions of ordinary differential equations by different formulae. | Apply |
| COURSE NAME: DATABASE MANAGEMENT SYSTEMS (C222) | | |
| C222.1 | Understand the basic principles of database management systems. | Understand |
| C222.2 | Draw Entity-Relationship diagrams to represent simple database application scenarios | Create |
| C222.3 | Write SQL queries for a given context in relational database. | Apply |
| C222.4 | Discuss normalization techniques with simple examples. | Apply |
| C222.5 | Describe transaction processing and concurrency control concepts. | Apply |
| COURSE NAME: FORMAL LANGUAGES AND AUTOMATA THEORY (C223) | | |
| C223.1 | Classify Machines by their power to Recognize Languages understanding of the Automata theory concepts such as DFA's, NFA's. | Understand |
| C223.2 | Classify the Automata theory concepts such as RE's | Analyze |
| C223.3 | Summarize language classes & Grammars Relationship among them with the help of Chomsky hierarchy and minimize FA's and Grammars of Context Free Languages | Understand |
| C223.4 | Illustrate PDA , Deterministic PDA and non-deterministic PDA machines | Understand |
| C223.5 | Design and solve the Turing Machine Problems , halting Problems | Create |
| COURSE NAME:JAVA PROGRAMMING (C224) | | |
| C224.1 | Identify basic concepts of Java Programming Language | Understand |
| C224.2 | Analyze and implement the role of packages, interfaces in program design using Java | Analyze |
| C224.3 | Choose the basic principles of creating java Arrays, Inheritance and Interfaces. | Evaluate |
| C224.4 | Design Java programs that uses Packages and implements Exception Handlings. | Create |
| C224.5 | Analyze applications of Strings and Multi Threading and JDBC Connectivity | Analyze |
| COURSE NAME:MANAGERIAL ECONOMICS AND FINANCIAL ACCOUNTANCY (C225) | | |
| C225.1 | Define the fundamental concepts of managerial economics. | Remember |

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| C225.2 | Classify and compare various costs in managerial decision making process. | Understand |
| C225.3 | Identify the features of different market structures and various forms of Business organisations | Understand |
| C225.4 | Identify fundamental concepts of accounting and Analyze financial statements. | Apply |
| C225.5 | Evaluate various alternative investment proposals to make a better capital budgeting decision(Evaluating) | Apply |
| COURSE NAME:: DATA BASE MANAGEMENT SYSTEMS LAB (C226) | | |
| C226.1 | Formulate queries using SQL DML/DDDL/DCL commands. | Create |
| C226.2 | Design and implement a database schema for given problem. | Evaluate |
| C226.3 | Apply the normalization techniques for development of application software to realistic problems. | Apply |
| C226.4 | Build PL/SQL programs including stored procedures, functions, cursors and triggers | Create |
| COURSE NAME:R PROGRAMMING LAB (C227) | | |
| C227.1 | Utilize online resources for R and import new function packages into the R workspace. | Apply |
| C227.2 | Build, Import, review, manipulate and summarize datasets in R | Apply |
| C227.3 | Explore datasets to create testable hypothesis and identify appropriate statistical tests. | Analyze |
| C227.4 | Apply appropriate statistical tests using R. | Apply |
| C227.5 | Create and edit visualizations with R. | Create |
| COURSE NAME:JAVA PROGRAMMING LAB (C228) | | |
| C228.1 | Identify basic concepts of Java Programming Language | Understand |
| C228.2 | Analyze and implement the role of packages, interfaces in program design using Java | Analyze |
| C228.3 | Choose the basic principles of creating java Arrays, Inheritance and Interfaces. | Evaluate |
| C228.4 | Design Java programs that uses Packages and implements Exception Handlings. | Create |
| C228.5 | Analyze applications of Strings and Multi Threading and JDBC Connectivity | Analyze |
| COURSE NAME:Skill Oriented Course - II (Applications of Python-Pandas)(C229) | | |
| C229.1 | Able to work with basic data structures, operators and conditional and control statements | Apply |
| C229.2 | Develop application programs using functions (statistical), packages and modules | Analyze |
| C229.3 | Explore numpy package and automate tasks using numpy package | Create |

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| C229.4 | Explore pandas, matplotlib packages. Write example programs to process data, visualize the data and apply supervised and unsupervised models on real world data sets | Analyze |
| III YEAR I SEMESTER | | |
| COURSE NAME:COMPUTER NETWORKS (C311) | | |
| C311.1 | Demonstration of network topologies and network models :OSI and TCP/IP models and Transmission media types | Understand |
| C311.2: | Distinguishing various Error detection methods , Elementary data link protocols and sliding window protocols | Analyze |
| C311.3: | Compare and Classify Medium Access Protocols and wired LAN types | Analyze |
| C311.4: | Measuring the shortest path by different routing algorithms, inter domain routing congestion control algorithms | Evaluate |
| C311.5: | Implementation of TCP & UDP connection operations and Demonstration of Protocols in application layer) | Apply |
| COURSE NAME:DESIGN AND ANALYSIS OF ALGORITHMS (C312) | | |
| C312.1 | Apply different ways to analyze randomized algorithms (expected running time, probability of error). Recite algorithms that employ randomization. | Apply |
| C312.2 | Summarize divide-and conquer and Greedy algorithms. Derive and solve recurrences describing the performance of algorithms | Understand |
| C312.3 | Solve dynamic programming algorithms, and analyze them. | Apply |
| C312.4 | Determine the backtracking paradigm and explain when an algorithmic design Situation calls for it. Recite algorithms that employ this paradigm | Evaluate |
| C312.5 | Demonstrate NP- Completeness theory, lower bound theory | Understand |
| COURSE NAME:DATA WAREHOUSING AND DATA MINING (C313) | | |
| C313.1 | Illustrate the Importance of Data Warehousing and Features of Data Mining | Apply |
| C313.2 | Demonstrate various Data Preprocessing Techniques and Process Raw data to make it suitable for Data mining. | Apply |
| C313.3 | Choose appropriate Classification techniques to perform Classification, Model building, and Evaluation. | Apply |
| C313.4 | Make Use of Association Rule Mining Techniques to analyse frequent Itemsets. | Apply |
| C313.5 | Identify and apply various clustering methods to group similar data objects into clusters on real time datasets. | Apply |
| COURSE NAME:MICROPROCESSOR & MICRO CONTROLLER (C314) | | |
| C314.1 | Discover Harvard, Von Neumann, RISC, CISC, 8086 processors architecture types | Analyze |

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| C314.2 | Compile ALP for 8086 using program development tools | Create |
| C314.3 | Examine 8086 based system using memory, PPI, UART, DMA A/D and D/A devices | Analyze |
| C314.4 | Evaluate 8051 microcontroller system. | Evaluate |
| C314.5 | Compile software delay, loops, stack and subroutines for ARM Cortex 3 Processor. | Create |
| COURSE NAME:SOFTWARE PROJECT MANAGEMENT (C315) | | |
| C315.1 | Apply the process to be followed in the software development life-cycle models | Apply |
| C315.2 | Apply the concepts of project management & planning | Apply |
| C315.3 | Implement the project plans through managing people, communications and change | Evaluate |
| C315.4 | Implement the plans through iterative process | Evaluate |
| C315.5 | Conduct activities necessary to successfully complete and close the Software projects | Analyze |
| COURSE NAME:DATA WAREHOUSING & DATA MINING LAB (C316) | | |
| C316.1 | Design a data mart or data warehouse for any organization | Apply |
| C316.2 | Extract knowledge using data mining techniques and enlist various algorithms used in information analysis of Data Mining Techniques. | Analyze |
| C316.3 | Demonstrate the working of algorithms for data mining tasks such as association rule | Apply |
| C316.4 | Implement and Analyze on knowledge flow application on data sets and Apply the suitable | Analyze |
| COURSE NAME:COMPUTER NETWORKS LAB (C317) | | |
| C317.1 | Understand the basics of Physical Layer in real time application | Understand |
| C317.2 | Apply data link layer concepts, design issues, an]protocols | Apply |
| C317.3 | Suggest appropriate routing algorithm for the network. | Evaluate |
| C317.4 | working of internet connection to the system, installation and various network management tools | Analyze |
| C317.5 | Understand the basics of Physical Layer in real time application | Understand |
| COURSE NAME:CICD-Devops Lab (C318) | | |
| C318.1 | Understand the why, what and how of DevOps adoption | Understand |
| C318.2 | Analyze Attain literacy on Devops | Analyze |
| C318.3 | Analyze Align capabilities required in the team | Analyze |
| C318.4 | Create an automated CICD pipeline using a stack of tools | Create |
| C318.5 | Determine appropriate clustering techniques for data analysis | Evaluate |
| III YEAR IISEMESTER | | |

| COURSE NAME:MACHINE LEARNING (C321) | | |
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| C321.1 | Categorize the fundamental usage of the concept Machine Learning and its concepts | Understand |
| C321.2 | Implementation of various supervised Technique / algorithms | Apply |
| C321.3 | Integration of Ensemble Learning Methods | Analyze |
| C321.4 | Validation of unsupervised Techniques and Dimensionality Reduction Models in Machine Learning. | Evaluate |
| C321.5 | Distinguish the Neural Network Models and Fundamentals concepts of Deep Learning | Analyze |
| COURSE NAME:COMPILER DESIGN (C322) | | |
| C321.1 | Categorize the fundamental usage of the concept Machine Learning and its concepts | Understand |
| C321.2 | Implementation of various supervised Technique / algorithms | Apply |
| C321.3 | Integration of Ensemble Learning Methods | Analyze |
| C321.4 | Validation of unsupervised Techniques and Dimensionality Reduction Models in Machine Learning. | Evaluate |
| C321.5 | Distinguish the Neural Network Models and Fundamentals concepts of Deep Learning | Analyze |
| COURSE NAME:CRYPTOGRAPHY AND NETWORK SECURITY (C323) | | |
| C323.1 | Summarize various network security problems and the techniques that could be used to protect the software from security threats | Understand |
| C323.2 | Apply various symmetric key cryptography algorithms | Apply |
| C323.3 | Demonstrate number theory and apply it in asymmetric key cryptography | Understand |
| C323.4 | Apply various hash functions and digital signature concepts to achieve data | Apply |
| C323.5 | How to provide security to transport, network and application layers | Remember |
| COURSE NAME: OBJECT ORIENTED ANALYSIS AND DESIGN (C324) | | |
| C324.1 | Analyse the nature of complex system to create its Solution at design level | Analyze |
| C324.2 | Illustrate and relate the conceptual model of the Unified Modeling Language | Apply |
| C324.3 | Analyse and Design the static aspects of a system using Class diagrams and Object Diagrams | Apply |
| C324.4 | Analyse and Design the behavioral aspects of a system using Uses case diagrams and Interaction Diagrams | Apply |
| C324.5 | Model runtime environment of software system using state chart diagrams and Implementation diagrams. | Analyze |
| COURSE NAME: MEAN STACK DEVELOPMENT (C325) | | |
| C325.1 | Build static web pages using HTML 5 elements | Create |

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| C325.2 | Apply JavaScript to embed programming interface for web pages and also to perform Client side validations. | Apply |
| C325.3 | Build a basic web server using Node.js, work with Node Package Manager (NPM) and recognize the need for Express.js | Create |
| C325.4 | Develop JavaScript applications using typescript and work with document database using Mongo DB | Create |
| C325.5 | Utilize Angular JS to design dynamic and responsive web pages | Apply |
| COURSE NAME: MACHINE LEARNING USING PYTHON LAB (C326) | | |
| C326.1 | To Describe the implementation procedures for the Machine Learning algorithms | Understand |
| C326.2 | To Apply appropriate data sets to the Machine Learning algorithms. | Apply |
| C326.3 | To Use Machine Learning algorithms to solve real-world problems. | Apply |
| C326.4 | To Outline predictions using machine learning algorithms | Evaluate |
| COURSE NAME: COMPILER DESIGN LAB (C327) | | |
| C327.1 | Determine the phases in the design of a Compiler. | Evaluate |
| C327.2 | Organize Syntax Analysis phase, Top Down and Bottom-Up parsing and Construction of LR parsers. | Apply |
| C327.3 | Analyze synthesized, inherited attributes and can generate intermediate code for a target machine. | Analyze |
| C327.4 | Evaluate principle sources of Optimization techniques for a raw object code of a target machine. | Evaluate |
| C327.5 | Develop algorithms to generate the object code for a target machine along with run time storage constraints. | Create |
| COURSE NAME: CRYPTOGRAPHY AND NETWORK SECURITY LAB (C328) | | |
| C328.1 | Summarize various network security problems and the techniques that could be used to protect the software from security threats | Apply |
| C328.2 | Apply various symmetric key cryptography algorithms | Create |
| C328.3 | How to provide security to transport, network and application layers | Analyze |
| C328.4 | Apply various hash functions and digital signature concepts to achieve data | Apply |
| COURSE NAME: MEAN STACK TECHNOLOGIES (C329) | | |
| C329.1 | Build static web pages using HTML 5 elements | Create |
| C329.2 | Apply JavaScript to embed programming interface for web pages and also to perform Client side validations. | Apply |
| C329.3 | Build a basic web server using Node.js, work with Node Package Manager (NPM) and recognize the need for Express.js | Create |

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|--------|---|--------|
| C329.4 | Develop JavaScript applications using typescript and work with document database using Mongo DB | Create |
| C329.5 | Utilize Angular JS to design dynamic and responsive web pages | Apply |