2.6.1. Course Outcomes for the Academic Year 2022 – 23

S. No.	Program	Year	Semester	Course Outcomes
1	B. Tech in Computer Science and Engineering	I	I	C101 – C108
2			II	C109 – C117
3		II	I	C201 – C210
4			II	C211 – C218
5		III	I	C301 – C310
6			II	C311 – C319
7		IV	I	C401 – C408
8			II	C409 – C411
9	B. Tech in Electronics and Communication Engineering	I	I	C101 – C108
10			II	C109 – C117
11		II	I	C201 – C209
12			II	C210 – C218
13		III	I	C301 – C308
14			II	C309– C317
15		IV	I	C401 – C408
16			II	C409 – C411
17	B. Tech in Electrical and Electronics Engineering	I	I	C101 – C108
18			II	C109 – C117
19		II	I	C201 – C210
20			II	C211 – C219
21		III	I	C301 – C309
22			II	C310 – C318
23		IV	I	C401 – C409
24			II	C410 – C413
25	B, Tech in Information Technology	I	I	C101 –C108
26			II	C109 – C117
27		II	I	C201 – C210
28			II	C211 – C219
29		III	I	C301 – C310
30			II	C311 – C319
31		IV	I	C401 – C408
32			II	C409 – C412
33	B. Tech in Mechanical Engineering	I	I	C101 –C108
34			II	C109 – C117
35		II	I	C201 – C210
36			II	C211 – C219
37		III	I	C301 – C308
38			II	C309 – C317
39		IV	I	C401 – C407
40			II	C408 – C412

Sno	Program	Year	Semester	Course Outcomes
41	Master of Business Administration	I	I	C101 – C109
42			II	C201 – C207
43		II	I	C301 – CE305
44			II	C401 – CE405
45	M. Tech in VLSI & Embedded System	I	I	C101 – C107
46	M. Tech in Power and Industrial drives	I	I	C101 – C107
			II	C201 – C207
		II	I	C301 – C 302
			II	C401

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: I Semester : I	Course: English	Regulation: R 20

Sno	Course Outcome	Description
1	C101.1	Apply reading strategies for skimming and scanning and construct paragraphs through mechanics of writing. (K3)
2	C101.2	Ask and answer questions through functional English; discuss in groups and develop conversational and communication skills. (K2)
3	C101.3	Interpret texts for comprehension; and write letters, E-mails and CV's through principles of written communication.(K3)
4	C101.4	Utilize verbal and graphic devices to transfer information; and produce writing for various purposes. (K3)
5	C101.5	Build sentences using proper grammatical structures and correct word forms; and practice presentations for academic and technical purposes. (K3)

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: I Semester : I	Course: Mathematics – I	Regulation: R 20

Sno	Course Outcome	Description
1	C102.1	Determine the convergence of an infinite series and utilize mean value theorems to real life Problems (K3).
2	C102.2	Understand, classify and solve analytically a wide range of first order ordinary differential equations along with the applications of differential equations in engineering problems (K2 & K3).
3	C102.3	Solve analytically the higher order ordinary differential equations with constant coefficients of various types and apply in their studies (K3).
4	C102.4	Apply the knowledge of Mean value theorems, Maxima and Minima of functions of several variables which is useful in optimization (K3).
5	C102.5	Apply double integration and triple integration techniques in evaluating areas bounded by curves and volumes of the solids(K3).

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: I Semester : I	Course: Applied Physics	Regulation: R 20

Sno	Course Outcome	Description
1	C103.1	Explain wave behavior of light, including interference and diffraction mathematically and conceptually.
2	C103.2	Explain operational principles and construction of Lasers. Understand the properties of optical fiber that affect the performance of a communication system.
3	C103.3	Apply the knowledge of quantum views for understanding the formation of energy bands in solids and their classifications.
4	C103.4	Describe relationship between specific properties and applications of dielectric and magnetic materials.

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: I Semester : I	Course: Programming for problem solving using C	Regulation: R 20

Sno	Course Outcome	Description
1	C104.1	**Describe** various types of computer systems, computing environments and discuss about various basic aspects of C programming
2	C104.2	**Develop** the programs that use two-way/ multi-way selection and loop construct for a givenproblem.
3	C104.3	**Apply** the structures, union, strings and array operations in a specific need.
4	C104.4	**Illustrate** about pointers, dynamic memory allocation and know the significance of Pre-processor.
5	C104.5	**Make use of** functions and file Operations for a given applications
5	C103.5	Understand the physics of electrical conductivity in semiconductors and superconductors for various applications.

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: I Semester : I	Course: Computer Engineering Workshop	Regulation: R 20

Sno	Course Outcome	Description
1	C105.1	Assemble and disassemble components of a PC
2	C105.2	Construct a fully functional virtual machine; Summarize various Linux operating system commands.
3	C105.3	Recognize characters & extract text from scanned images, Create audio files and podcasts

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: I Semester : I	Course: English Language and Communication Skills Lab	Regulation: R 20

Sno	Course Outcome	Description
1	C106.1	Show the knowledge in listening and speaking English sounds and employing English stress and intonation as per the accepted standard (K3)
2	C106.2	Employ suitable listening and reading skills for improved communication abilities. (K3)

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: I Semester : I	Course: Applied Physics Lab	Regulation: R 20

Sno	Course Outcome	Description
1	C107.1	Evaluate the process and outcomes of an experiment quantitatively and qualitatively
2	C107.2	Demonstrate the process and outcomes of an experiment
3	C107.3	Discuss an experiment collaboratively and ethically

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: I Semester : I	Course: Programming for Problem Solving Using C Lab	Regulation: R 20

Sno	Course Outcome	Description
1	C108.1	Extend the knowledge for C programming development for basic applications
2	C108.2	Examine the control flow and Selection and Iterative Statements
3	C108.3	Utilize the concepts of C arrays and strings for program development
4	C108.4	Construct C programs using structures, unions, pointers and memory allocation functions
5	C108.5	Practice the Modular Programming Skills to solve complex problems and also interpret the operations on files

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: I Semester :II	Course: Mathematics - II	Regulation: R 20

Sno	Course Outcome	Description
1	C109.1	Solve system of linear algebraic equations using matrices**(K3)**
2	C109.2	Make use of matrix algebra techniques that is needed by engineers for practical applications**(K3)**
3	C109.3	Compute the approximate roots of polynomial and transcendental equations using different algorithms**(K3)**
4	C109.4	Apply Newton's forward & backward interpolation and Lagrange's formulae for equal and unequal intervals**(K3)**
5	C109.5	Apply different algorithms for approximating the solutions of ordinary differential equations**(K3)**

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: I Semester :II	Course: Applied Chemistry	Regulation: R 20

Sno	Course Outcome	Description
1	C110.1	Distinguish various forms of polymers and Illustrate different methods forming plastic materials
2	C110.2	Develop various energy storing devices and Apply different techniques to prevent corrosion
3	C110.3	Utilize disparate advanced materials
4	C110.4	Choose different analytical instruments in identifying various organic compounds and Develop diverse renewable energy sources
5	C110.5	Identify diverse molecular machines and computational chemistry methods

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: I Semester :II	Course: Computer Organization	Regulation: R 20

Sno	Course Outcome	Description
1	C111.1	Relate and manipulate representations of numbers stored in digital computers.
2	C111.2	Analyze various combinational and sequential circuits.
3	C111.3	Demonstrate different instruction types.
4	C111.4	Calculate the effective address of an operand by addressing modes.
5	C111.5	Recall the internal Organization of computers, CPU, memory unit and Input/Outputs and the relations between its main Components.

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: I Semester :II	Course: Python Programming	Regulation: R 20

Sno	Course Outcome	Description
1	C112.1	Discuss the basic essential programming skills of Python Programming(K2)
2	C112.2	Applythe knowledge of problem-solving skills on strings and its methods(K3)
3	C112.3	Solve coding tasks related to data structures in pythonand build the functions, modules, and packages(K3)
4	C112.4	Demonstrate the file operations and features of object – oriented programming in python (K3)
5	C112.5	Develop GUI applications in Python and list types of exceptions(K3)

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: I Semester :II	Course: Data Structures	Regulation: R 20

Sno	Course Outcome	Description
1	C113.1	Demonstrate the behavior of Data Structures, Abstract, Data types, Searching, Sorting and determine the complexity analysis (K3)
2	C113.2	Apply the concept of various linked lists and examine the advantages and disadvantages (K3)
3	C113.3	Examine the concepts of queues and Stacks along with their operations (K3)
4	C113.4	Investigate the usage of stacks (K3)
5	C113.5	Simulate the hierarchal data structures called trees (K3)

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: I Semester :II	Course: Applied Chemistry Lab	Regulation: R 20

Sno	Course Outcome	Description
1	C114.1	Calculate the amount of solute in the given sample solutions using classical titration methods (Expt. No. 1,2,3,4,5,16)
2	C114.2	Examine the nature and concentration of substances present in real life samples (Expt. No. 6,12,13,14,15, 17)
3	C114.3	Make use of various instruments to calculate the strength of the given samples (Expt. No. 7,8,9,10,11)

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: I Semester :II	Course: Python Programming Lab	Regulation: R 20

Sno	Course Outcome	Description
1	C115.1	**Develop** python programs using control flow statements.
2	C115.2	**Examine** the proficiency in handling of strings and Lists.
3	C115.3	**Develop** programs using data structures like dictionaries, tuples and sets using built-in functions, modules and packages
4	C115.4	**Develop** programs using the file operations and features of object-oriented programming in python
5	C115.5	**Develop** GUI applications in Python and list types of exceptions

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: I Semester :II	Course: Data Structures Lab	Regulation: R 20

Sno	Course Outcome	Description
1	C116.1	Demonstrate the various Object Oriented Programming concepts such as Constructors, Destructors, Functions and Operators(**K3)**
2	C116.2	To Practice Inheritance, Templates and Exception Handling (**K3**)
3	C116.3	Experiment with the Single Linked List operations such as Insertion, Deletion, Searching and Sorting(**K3**)
4	C116.4	Discriminate between Stack and Queue Linear Data Structures (**K4**).
5	C116.5	To Analyze the hierarchical Data Structures like Binary Search Trees for solving the real-time problems (**K4**).

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: I Semester :II	Course: Environmental Studies	Regulation: R 20

Sno	Course Outcome	Description
1	C117.1	Identify the basic concepts of Eco-system and its function in the Environment.
2	C117.2	List the natural resources and their importance for the sustenance of life and learn to conserve the natural resources.
3	C117.3	Apply conservation practices to protect the Bio-diversity.
4	C117.4	Illustrate the control of pollution with waste management practices.
5	C117.5	State Environmental legislations of India and the first global initiatives towards sustainable development.
6	C117.6	Prepare Environmental Assessment Procedure, the stages involved in EIA and the Environmental audit.

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Mathematics – III	Regulation: R 20

Sno	Course Outcome	Description
1	C201.1	Apply the Concepts of Vector Differentiation and Vector Integration in Applications of Engineering field
2	C201.2	Determine Laplace Transform and inverse Laplace Transforms of various functions and solve the linear ODE.
3	C201.3	Compute the Fourier series of periodic signals, apply integral expressions for the forwards and inverse Fourier transform to a range of non-periodic waveforms .
4	C201.4	Identify and solve different types of linear and nonlinear first order partial differential equations.
5	C201.5	Solve distinct cases of higher order partial differential equations and use to solve engineering problems.

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Object Oriented Programming through C++	Regulation: R 20

Sno	Course Outcome	Description
1	C202.1	Illustrate the key primitives used in object oriented programming with exemplification using C++
2	C202.2	Discuss fundamental practices like operators, control structures, functions and recursion in C++ programming
3	C202.3	Ilustrate classes, objects with Access specifiers and usage of membership functions in object oriented programming
4	C202.4	Operate on constructors and destructors, type conversion using static and local member functions
5	C202.5	Discuss on Inheritance, polymorphism with access specifiers and virtual functions in C++ Programming.

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Operating System	Regulation: R 20

Sno	Course Outcome	Description
1	C203.1	Identify the most essential services and system calls provided by an operating system to user.
2	C203.2	Analyze process and its scheduling, evaluation criteria for selecting a CPU scheduling algorithm and threads by their communication models.
3	C203.3	Interpret various Memory Management Schemes especially paging and Segmentation in Operating System and apply various Page Replacement Techniques.
4	C203.4	Examine several approaches to mitigating the issue of deadlock in operating systems and identify the concepts of I/O management, file system implementation.
5	C203.5	Identify Security and Protection Mechanism in Operating Systems like UNIX/Linux and Windows

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Software Engineering	Regulation: R 20

Sno	Course Outcome	Description
1	C204.1	Demonstrate the principles and practices of software engineering and various process models.
2	C204.2	Understand the knowledge on agile software methods.
3	C204.3	Collect the Requirements of system process.
4	C204.4	Develop software design using various designing models and its principles.
5	C204.5	Apply various testing approaches for verification & validation.

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Mathematical Foundations of Computer Science	Regulation: R 20

Sno	Course Outcome	Description
1	C205.1	Apply principles of mathematical logic to statement calculus and Predicate calculus
2	C205.2	Discuss various types of relations , functions, Lattice and algebraic structures
3	C205.3	Use counting techniques to solve combinatorial Problems
4	C205.4	Solve recurrence relations by method of substitution, characteristic roots, Generating functions
5	C205.5	Able to model and solve the real world problems using graph theory

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Object Oriented Programming through C++ Lab	Regulation: R 20

Sno	Course Outcome	Description
1	C206.1	Apply the concepts of object-oriented programming
2	C206.2	Illustrate the process of data file manipulations using C++
3	C206.3	Apply virtual and pure virtual function & complex programming situations
4	C206.4	Demonstrate the concept of function overloading, operator overloading, virtual functions and polymorphism.
5	C206.5	Demonstrate the concept of function overloading, operator overloading, virtual functions and polymorphism.

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Operating Systems Lab	Regulation: R 20

Sno	Course Outcome	Description
1	C207.1	Build programs for CPU scheduling and multiprogramming of tasks in modern operating system.
2	C207.2	Construct algorithms for deadlock avoidance, page replacement and file allocation strategies.
3	C207.3	Develop general purpose commands in Linux environment.
4	C207.4	Build C programs for file management systems using system calls. Develop processes and threads that communicate using shared memory and p threads library in unix.
5	C207.5	Build programs for CPU scheduling and multiprogramming of tasks in modern operating system.

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Software Engineering Lab	Regulation: R 20

Sno	Course Outcome	Description
1	C208.1	Construct the Software Requirement Specification Document, design document
2	C208.2	Develop function oriented and object oriented software design using tools like rational rose
3	C208.3	Use modern engineering tools necessary for software project management, estimations, time management and software reuse**.**
4	C208.4	Produce test cases for software testing.
5	C208.5	Construct the Software Requirement Specification Document, design document

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Skill Oriented Course – I Applications of Python-Numpy	Regulation: R 20

Sno	Course Outcome	Description
1	C209.1	Explain how data is collected, managed and stored for processing
2	C209.2	Understand the workings of various numerical techniques, different descriptive measures of Statistics, correlation and regression to solve the engineering problems
3	C209.3	Understand how to apply some linear algebra operations to n-dimensional arrays
4	C209.4	Use NumPy perform common data wrangling and computational tasks in Python

Department : Department of Computer Science and Engineering

Academic Year: 2022-23	Year: II Semester: I	Course: Constitution of India	Regulation: R 20

Sno	Course Outcome	Description
1	C210.1	Understand historical background of the constitution making and its importance for building a democratic India.
2	C210.2	Understand the functioning of three wings of the government ie., executive, Legislative and judiciary.
3	C210.3	Understand the value of the fundamental rights and duties for becoming good citizen of India.
4	C210.4	Analyze the decentralization of power between central, state and local self government.
5	C210.5	Apply the knowledge in strengthening of the constitutional institutions like CAG, Election Commission and UPSC for sustaining democracy

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Probability and Statistics	Regulation: R 20

Sno	Course Outcome	Description
1	C211.1	Classify the concepts of data science and its importance. (K2)
2	C211.2	Interpret the association of characteristics through correlation and regression methods.(K3)
3	C211.3	Use discrete and continuous probability distributions to solve problems. (K3)
4	C211.4	Identify the types of sampling methods for different data samples.(K3)
5	C211.5	Test suitable sample statistical tests in testing hypothesis data.(K4)

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Database Management Systems	Regulation: R 20

Sno	Course Outcome	Description
1	C212.1	Discuss characteristics involved in the design and implementation of a database system.
2	C212.2	Create basic SQL queries by using relational model concepts.
3	C212.3	Develop logical database design using E-R diagrams
4	C212.4	Apply the normalization techniques to remove the anomalies in the database design.
5	C212.5	Apply concurrency and recovery techniques to protect the data in database.

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Formal Languages and Automata Theory	Regulation: R 20

Sno	Course Outcome	Description
1	C213.1	Illustrate deterministic and non-deterministic machines
2	C213.2	Construct language classes & grammars relationship among them with the help of Chomsky hierarchy
3	C213.3	Demonstrate different Normal Forms and simplify the CFG
4	C213.4	Illustrate Finite Automata with Stack
5	C213.5	Demonstrate Turing Machines and classify the computability in Automata Theory.

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Java Programming	Regulation: R 20

Sno	Course Outcome	Description
1	C214.1	Interpret the concepts of Object Oriented Programming and the Java Programming Constructs
2	C214.2	Demonstrate the concepts of Object Orientation like Objects, Classes, Methods, Constructors alongside the usage of various keywords
3	C214.3	Apply the concepts of Array operations, Inheritance and Interfaces to solve the real-world problems
4	C214.4	Examine the usage of Packages and Exception handling to build The Java Applications
5	C214.5	Analyze the methods of String handling, Survey THE techniques of Multithreading and Connect the front-end WITH the back-end through Java Database Connectivity

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Managerial Economics and Financial Accountancy	Regulation: R 20

Sno	Course Outcome	Description
1	C215.1	Demonstrate managerial economics & elasticity of demand(K2)
2	C215.2	Generalize production function and cost concepts(K2)
3	C215.3	Explain market structures and industrial organizations (K2)
4	C215.4	Determine financial performance of a company(K3)
5	C215.5	Apply capital budgeting techniques in Investment proposals(K3)

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Database Management Systems Lab	Regulation: R 20

Sno	Course Outcome	Description
1	C216.1	Practice the basics of SQL and construct queries using SQL.
2	C216.2	Demonstrating the aggregate and conversion functions using clauses.
3	C216.3	Develop various loops, CASES, Transaction Statement using PL/SQL programs
4	C216.4	Apply stored procedures, stored functions, cursors, packages, Triggers on database using PL/SQL programs.

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: R programming Lab	Regulation: R 20

Sno	Course Outcome	Description
1	C217.1	Access online resources for R and import new function packages into the R workspace.
2	C217.2	Import, review, manipulate and summarize data-sets in R.
3	C217.3	Explore data-sets to create testable hypotheses and identify appropriate statistical tests.
4	C217.4	Perform appropriate statistical tests using R.
5	C217.5	Create and edit visualizations with R.

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: **Java Programming Lab**	Regulation: R 20

Sno	Course Outcome	Description
1	C218.1	Make use of Primitive Data Types, Expressions, Classes and Methods to conduct investigations on various problems
2	C218.2	Simulate Inheritance, Exception Handling Mechanism and Runtime Polymorphism to design solutions for complex problems
3	C218.3	Survey Threads and Packages of Java Standard Library to communicate effectively on complex Engineering activities
4	C218.4	Discriminate Stand alone Applications with the Graphical User Interface Environment to understand the procedure of Event Handling

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: **Skill Oriented Course – II - Applications of Python – Pandas**	Regulation: R 20

Sno	Course Outcome	Description
1	C219.1	Use Pandas to create and manipulate data structures like Series and Data Frames.
2	C219.2	Develop of the major Web application tier- Client side development
3	C219.3	Test the cross-browser applications through JavaScript
4	C219.4	Develop JavaScript applications that transition between states
5	C219.5	Evaluate the Data Frame structures for cleaning and processing and manipulating files

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: **Computer Networks**	Regulation: R 20

Sno	Course Outcome	Description
1	C301.1	**Classify** various layers of OSI model and TCP/IP protocol and to illustrate various transmission media**. (K2)**.
2	C301.2	**Calculate** various error detection and correction techniques by availing the Services of Data link layer for reliable data transmission. **(K3)**
3	C301.3	**Compare** different MAC layer protocols & standards by enabling different layers through defined IEEE norms. **(K2)**
4	C301.4	**Illustrate** Routing Algorithms in various Network Topologies. **(K3)**
5	C301.5	**Distinguish** TCP and UDP protocols in connection oriented and connection less networks and **List** various protocols supported by Application layer. **(K2)**

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: **Design and Analysis of Algorithms**	Regulation: R 20

Sno	Course Outcome	Description
1	C302.1	Give examples of running time of algorithms by using asymptotic notations
2	C302.2	Describe various algorithmic approaches and Solve problems using divide and conquer &greedy Method.
3	C302.3	Apply dynamic programming to solve shortest path for the graph
4	C302.4	Solve 8-queen, graph coloring and Hamiltonian cycles applications using back- tracking approach.
5	C302.5	Demonstrate an understanding of NP- Completeness theory and lower bound theory

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: **Data Mining And Data Warehousing**	Regulation: R 20

Sno	Course Outcome	Description
1	C303.1	Design a Data warehouse system and perform business analysis with OLAP tools **(K2).**
2	C303.2	Determine on various Data Preprocessing Techniques viz. data cleaning, data integration, data transformation and data reduction and Process raw data to make it suitable for various data mining Algorithms. **(K3)**.
3	C303.3	Apply appropriate classification techniques for data analysis **(K3)**.
4	C303.4	Apply frequent pattern and association rule mining techniques for data analysis **(K3)**.
5	C303.5	Apply various clustering algorithm (with open source tools), interpret, evaluate and Report the result **(K3)**.

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: **RES**	Regulation: R20

Sno	Course Outcome	Description
1	C304.1	Analyze solar radiation data, extra-terrestrial radiation, radiation on earth's surface and solar Energy Storage.
2	C304.2	Illustrate the components of wind energy systems.
3	C304.3	Illustrate the working of biomass, digesters and Geothermal plants.
4	C304.4	Demonstrate the principle of Energy production from OTEC, Tidal and Waves.
5	C304.5	Evaluate the concept and working of Fuel cells & MHD power generation.

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: **Artificial Intelligence**	Regulation: R 20

Sno	Course Outcome	Description
1	C305.1	Understand the fundamental concepts in Artificial Intelligence **(K2)**
2	C305.2	Develop the Problem solving and search strategies in applications. **(K3)**.
3	C305.3	Apply the mathematical logic concepts. **(K3)**.

4	C305.4	Analyze the Knowledge representations in Artificial Intelligence **(K4)**.
5	C305.5	Analyze the Expert Systems **(K4)**.

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: **Data Warehousing And Data Mining Lab**	Regulation: R 20

Sno	Course Outcome	Description
1	C306.1	Understand basics of building of DataWare house.(K2)
2	C306.2	To Learn Weka for explorer,knowledge.(K3)
3	C306.3	Understand the Association rules. (K3)
4	C306.4	To Understand the classification of data.(K4)
5	C306.5	To create pictorial presentation of data.(K2)

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: **Computer Networks Lab**	Regulation: R 20

Sno	Course Outcome	Description
1	C307.1	Solve basic AI based problems using Prolog
2	C307.2	Categorize real-world problems as state space problems, optimization problems or constraint satisfaction problems. And develop AI Algorithms
3	C307.3	Apply AI techniques to real-world problems to develop intelligent systems
4	C307.4	Use LISP Programming to implement AI Algorithms and demonstrate AI Tools

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: **Skill Oriented Course-Animation Design**	Regulation: R 20

Sno	Course Outcome	Description
1	C308.1	Apply the tools to create 2D animation for films and videos. (K3)
2	C308.2	Make use of different styles in 3D model creation. (K3)
3	C308.3	Applytoolstocreateeffective3Dmodelingtexturingandlighting (K3)

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: **Internship**	Regulation: R 20

Sno	Course Outcome	Description
1	C309.1	Understanding the modern tools used in the field of Computer science and engineering for product development.
2	C309.2	Demonstrate ethical conduct and professional accountability while working in a team for the benefit of society.
3	C309.3	Understand the resources requirement and planning to facilitate the project success.

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: **CSP**	Regulation: R 20

Sno	Course Outcome	Description
1	C310.1	Improve students' academic learning and expecting a positive impact.(K2)
2	C310.2	Apply improved students' ability to what they have learned in the real world. (K3)
3	C310.3	Demonstrate the complexity of understanding problem analysis, problem-solving, critical thinking, and cognitive development. (K3)
4	C310.4	Analyze the complexity and understand the ambiguity in solving the real-time problem.(K4)
5	C310.5	Build leadership and communication skills. (K4)

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: **MACHINE LEARNING**	Regulation: R 20

Sno	Course Outcome	Description
1	C311.1	Illustrate the fundamental usage of the concept Machine Learning system(K3)
2	C311.2	Simulate the Demonstrate on various regression Technique (K3)
3	C311.3	Apply the Ensemble Learning Methods(K3)
4	C311.4	Analyze the Clustering Techniques and Dimensionality Reduction Models in Machine Learning(K3)
5	C311.5	Analyze the Neural Network Models and Fundamentals concepts of Deep Learning (K2)
6	C311.6	Determine the use of the Neural Network Models (K2)

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: **Compiler Design**	Regulation: R 20

Sno	Course Outcome	Description
1	C312.1	Demonstrate the different phases of a Compiler (K3).
2	C312.2	Analyze the Lexical, Syntax and Semantics phases of a Compiler (K4).
3	C312.3	Organize the various types of Parsers and Grammars (K3).
4	C312.4	Analyze synthesized, inherited attributes and syntax directed translation schemes (K4).
5	C312.5	Explain the algorithms to generate code for a target machine (K2).

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: **CNS**	Regulation: R 20

Sno	Course Outcome	Description
1	C313.1	Identify information security goals, classical encryption techniques and acquire fundamental knowledge on the concepts of Cyber threats.
2	C313.2	Compare and apply different encryption and decryption techniques to solve problems related to confidentiality and authentication
3	C313.3	Apply different digital signature algorithms to achieve authentication and create secure applications

4	C313.4	Apply network security basics, analyze different attacks on networks and evaluate the performance of firewalls and security protocols like SSL, IPSec, and PGP
5	C313.5	Apply the knowledge of cryptographic utilities and authentication mechanisms to design secure applications

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: **Big Data Analytics**	Regulation: R 20

Sno	Course Outcome	Description
1	C314.1	Generalize managerial economics & demand forecasting
2	C314.2	Illustrate production function and cost concepts
3	C314.3	Estimate market structures and pricing policies
4	C314.4	Discuss types of business organization and business cycle
5	C314.5	Determine financial performance of a company, Illustrate capital budgeting Techniques

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: **Mean Stack Development**	Regulation: R 20

Sno	Course Outcome	Description
1	C315.1	Build static web pages using HTML 5 elements. .
2	C315.2	Apply JavaScript to embed programming interface for web pages and also to perform Client side validations
3	C315.3	Build a basic web server using Node.js, work with Node Package Manager (NPM) and recognize the need for Express
4	C315.4	Develop JavaScript applications using typescript and work with document database using MongoDB.
5	C315.5	Utilize Angular JS to design dynamic and responsive web pages.

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: **MLP-Lab**	Regulation: R 20

Sno	Course Outcome	Description
1	C316.1	Develop and design Python programs for various Learning algorithms(K3)
2	C316.2	Apply appropriate data sets to the Machine Learning algorithms(K3)
3	C316.3	Develop Machine Learning algorithms to solve real world problems(K3)

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: **Compiler Design Lab**	Regulation: R 20

Sno	Course Outcome	Description
1	C317.1	Explain the simple Lexical Analyzers (K2).
2	C317.2	Explain the Predictive Parsing table for a CFG (K2).
3	C317.3	Apply the Lex and Yacc Tools (K3).
4	C317.4	Examine the LR parser and generating SLR Parsing table (K1).
5	C317.5	Relate Intermediate code generation for subset C language (K2).

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: **CRYPTOGRAPHYAND NETWORK SECURITY LAB**	Regulation: R 20

Sno	Course Outcome	Description
1	C318.1	Apply the knowledge of symmetric cryptography to implement encryption and decryption using Ceaser Cipher, Substitution Cipher, Hill Cipher(K3)
2	C318.2	Analyze and implement DSA Algorithm.(K4)
3	C318.3	Demonstrate the different algorithms like BlowFish, and Rijndael, encrypt the text "Hello world" using Blowfish Algorithm.(K3)
4	C318.4	Analyze and implement RSA Algorithm.(K4)
5	C318.5	Demonstrate the different public key algorithms like,Diffie-Hellman Key Exchange mechanism, the message digest of a text using the SHA-1 algorithm(K3)

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: **Mean Stack Technologies-Module I**	Regulation: R 20

Sno	Course Outcome	Description
1	C319.1	Develop professional web pages of an application using HTML elements like lists, navigations, tables, various form elements, embedded media which includes images, audio, video and CSS Styles.
2	C319.2	Utilize JavaScript for developing interactive HTML web pages and validate form data.
3	C319.3	Build a basic web server using Node.js and also working with Node Package Manager (NPM).
4	C319.4	Build a web server using Express.js
5	C319.5	Make use of Typescript to optimize JavaScript code by using the concept of strict type checking.

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: CRYPTOGRAPGHY AND NETWORK SECURITY	Regulation: R 19

Sno	Course Outcome	Description
1	C401.1	Identify information security goals, classical encryption techniques and acquire fundamental knowledge on the concepts of Cyber threats.
2	C401.2	Compare and apply different encryption and decryption techniques to solve problems related to confidentiality and authentication
3	C401.3	Apply different digital signature algorithms to achieve authentication and create secure applications
4	C401.4	Apply network security basics, analyze different attacks on networks and evaluate the performance of firewalls and security protocols like SSL, IPSec, and PGP
5	C401.5	Apply the knowledge of cryptographic utilities and authentication mechanisms to design secure applications

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: **UML & Design Patterns**	Regulation: R 19

Sno	Course Outcome	Description
1	C402.1	Illustrate software design with UML diagrams **(K2)**
2	C402.2	Model software applications using OO concepts**(K3)**
3	C402.3	Identify various scenarios based on software requirements**(K3)**
4	C402.4	Apply UML based software design into pattern based design using design patterns**(K3)**
5	C402.5	Illustrate the various testing methodologies for OO software**(K4)**

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: **MACHINE LEARNING**	Regulation: R 19

Sno	Course Outcome	Description
1	C403.1	Illustrate the fundamental usage of the concept Machine Learning system(K3)
2	C403.2	Simulate the Demonstrate on various regression Technique (K3)
3	C403.3	Apply the Ensemble Learning Methods(K3)
4	C403.4	Analyze the Clustering Techniques and Dimensionality Reduction Models in Machine Learning(K3)
5	C403.5	Analyze the Neural Network Models and Fundamentals concepts of Deep Learning (K2)
6	C403.6	Determine the use of the Neural Network Models (K2)

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: **EMBEDDED SYSTEMS**	Regulation: R 19

Sno	Course Outcome	Description
1	C404.1	To Apply the basic concepts of embedded systems and its design approach to perform specific function
2	C404.2	To Illustrate hardware design aspects of different electronic and input/output types in embedded systems
3	C404.3	To Categorize firmware design approaches and development languages in embedded systems
4	C404.4	To Compare different types of RTOS for different metrics
5	C404.5	To Analyze a real time embedded system using testing tools and simulations.

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: **Mobile Computing**	Regulation : R 19

Sno	Course Outcome	Description
1	C405.1	Outline the basic concepts in Mobile communication.
2	C405.2	Illustrate the importance of GSM services and Architecture.
3	C405.3	Elaborate the concept of network layer in Mobile communication.
4	C405.4	Illustrate various Data Dissemination and Synchronization mechanisms.
5	C405.5	Demonstrate the various protocols used in Wireless networks.

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: **Cloud Computing**	Regulation: R 19

Sno	Course Outcome	Description
1	C406.1	Interpret the architecture and infrastructure models of cloud computing.(**K3**)
2	C406.2	Examine the economics ,financial and technological implications for selecting cloud computing for own organisation (**K4**)
3	C406.3	Analyze the financial ,technological and oraganisational capacity for employers's for actively initiating and installing cloud based applications (**K4**)
4	C406.4	Differentiate own organizations needs for capacity building and training in cloud computing related IT areas(**K4**)
5	C406.5	Illustrate Virtualization for data center Automation(**K4**)

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: **UML LAB**	Regulation: R 19

Sno	Course Outcome	Description
1	C407.1	Create use case documents that capture requirements for a software system**(K6)**
2	C407.2	Create class diagrams that model both the domain model and design model of a software system**(K6)**
3	C407.3	Create interaction diagrams that model the dynamic aspects of a software system**(K6)**
4	C407.4	Create state chart diagrams to describe the states of different objects in its life cycle**(K6)**
5	C407.5	Create deployment diagrams that provide a view of the hardware system's topology. **(K6)**

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: **MOB**	Regulation: R 19

Sno	Course Outcome	Description
1	C408.1	Describe functions and Importance of Management theories (k2)
2	C408.2	Explain Organization Structures and Effective Controlling Techniques (k2)
3	C408.3	Discuss Organizational Behavior and perceptual learning process(k2)
4	C408.4	Determine theories of Motivation and Collaborative process in work groups(k3)
5	C409.5	Discuss Problem Solving techniques in Organizational Conflict (k2)
6	C409.6	Explain Organizational change in creating an Ethical Organization (k3)

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: IV Semester: II	Course: **Entrepreneurship**	Regulation: R 19

Sno	Course Outcome	Description
1	C409.1	Pick about Foundation of Entrepreneurship Development and it's theories.(K2)
2	C409.2	Discuss entrepreneurial skills and management function of a company with special reference to SME sector.(K2)
3	C409.3	Identify the type of entrepreneur and the steps involved in an entrepreneurial venture.(K2)
4	C409.4	Understand various steps involved in starting a venture and to explore marketing methods and new trends in entrepreneurship.(K2)

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: IV Semester: II	Course: **Big Data Analytics**	Regulation: R 19

Sno	Course Outcome	Description
1	C410.1	Understand fundamentals of Big Data analytics .(K2)
2	C410.2	To Learn Real time analytics platform(K3)
3	C410.3	Understand the components of Hadoop System(K3)
4	C410.4	To Introduce programming tools PIG & HIVE in Hadoop echo system(K4)
5	C410.5	To create chart based pictorial presentation of data.(K2)

Department : Department of Computer Science and Engineering			
Academic Year: 2022-23	Year: IV Semester: II	Course: **Project**	Regulation: R 19

Sno	Course Outcome	Description
1	C411.1	Demonstrate the technical knowledge to identify problems in the field of Computer Science and Engineering and its related areas. (K4)
2	C411.2	Analyze and formulate technical projects with a comprehensive and systematic approach(K4)
3	C411.3	Identify the modern tools to implement technical projects. (K3)
4	C411.4	Determine various solutions for solving complex engineering problems. (K5)
5	C411.5	Perceive effective communication skills, professional behavior and teamwork (K5)

Head of the Department **Principal**

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: I Semester: I	Course: English	Regulation: R 20

Sno	Course Outcome	Description
1	C101.1	Apply reading strategies for skimming and scanning and construct paragraphs through mechanics of writing. (K3)
2	C101.2	Ask and answer questions through functional English; discuss in groups and develop conversational and communication skills.(K2)
3	C101.3	Interpret texts for comprehension; and write letters, E-mails and CV's through principles of written communication.(K3)
4	C101.4	Utilize verbal and graphic devices to transfer information; and produce writing for vari**ous purposes.(K3)**
5	C101.5	Build sentences using proper grammatical structures and correct word forms; and practice presentations for academic and technical purposes (K3)

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: I Semester: I	Course: Mathematics – I	Regulation: R 20

Sno	Course Outcome	Description
1	C102.1	Determine the convergence of an infinite series and utilize mean value theorems to real life Problems (K3).
2	C102.2	Understand, classify and solve analytically a wide range of first order ordinary differential equations along with the applications of differential equations in engineering problems (K2 & K3).
3	C102.3	Solve analytically the higher order ordinary differential equations with constant coefficients of various types and apply in their studies (K3).
4	C102.4	Apply the knowledge of Mean value theorems, Maxima and Minima of functions of several variables which is useful in optimization (K3).
5	C102.5	Apply double integration and triple integration techniques in evaluating areas bounded by curves and volumes of the solids(K3).

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: I Semester: I	Course: Applied Chemistry	Regulation: R 20

Sno	Course Outcome	Description
1	C103.1	Distinguish various forms of polymers and Illustrate different methods forming plastic materials
2	C103.2	Develop various energy storing devices and Apply different techniques to prevent Corrosion
3	C103.3	Utilize disparate advanced materials
4	C103.4	Choose different analytical instruments in identifying various organic compounds and Develop diverse renewable energy sources
5	C103.5	Identify diverse molecular machines and computational chemistry methods

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: I Semester: I	Course: Programming for problem solving using C	Regulation: R 20

Sno	Course Outcome	Description
1	C104.1	**Describe** various types of computer systems, computing environments and discuss about various basic aspects of C programming
2	C104.2	**Develop** the programs that use two-way/ multi-way selection and loop construct for a givenproblem.
3	C104.3	**Apply** the structures, union, strings and array operations in a specific need.
4	C104.4	**Illustrate** about pointers, dynamic memory allocation and know the significance of Pre-processor.
5	C104.5	**Make use of** functions and file Operations for a given applications

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: I Semester: I	Course: Engineering Drawing	Regulation: R 20

Sno	Course Outcome	Description
1	C105.1	Identify the use of various drawing instruments and to construct various types of polygons, curves and scales.
2	C105.2	Represent the projections of points, lines and line inclined to both the planes and its traces.
3	C105.3	Sketch the projections of various types of plane surfaces in different positions with respect to reference planes.
4	C105.4	Develop the projections of various types of solids in different positions with respect to reference planes.
5	C105.5	Construct the 3D objects in 2D planes and vice versa and make use of Auto Cad to create the 2D and 3D objects.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: I Semester: I	Course: English Lab	Regulation: R 20

Sno	Course Outcome	Description
1	C106.1	Show the knowledge in listening and speaking English sounds and employing English stress and intonation as per the accepted standard (K3)
2	C106.2	Employ suitable listening and reading skills for improved communication abilities. (K3)

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: I Semester: I	Course: Applied Chemistry Lab	Regulation: R 20

Sno	Course Outcome	Description
1	C107.1	Calculate the amount of solute in the given sample solutions using classical titration methods (Expt. No. 1,2,3,4,5,16)
2	C107.2	Examine the nature and concentration of substances present in real life samples (Expt. No. 6,12,13,14,15, 17)
3	C107.3	Make use of various instruments to calculate the strength of the given samples (Expt. No. 7,8,9,10,11)

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: I Semester: I	Course: Programming for Problem Solving Using C Lab	Regulation: R 20

Sno	Course Outcome	Description
1	C108.1	Extend the knowledge for C programming development for basic applications
2	C108.2	Examine the control flow and Selection and Iterative Statements
3	C108.3	Utilize the concepts of C arrays and strings for program development
4	C108.4	Construct C programs using structures, unions, pointers and memory allocation Functions
5	C108.5	Practice the Modular Programming Skills to solve complex problems and also interpret the operations on files

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Mathematics – II	Regulation: R 20

Sno	Course Outcome	Description
1	C109.1	Solve system of linear algebraic equations using matrices**(K3)**
2	C109.2	Make use of matrix algebra techniques that is needed by engineers for practical applications**(K3)**
3	C109.3	Compute the approximate roots of polynomial and transcendental equations using different algorithms**(K3)**
4	C109.4	Apply Newton's forward & backward interpolation and Lagrange's formulae for equal and unequal intervals**(K3)**
5	C109.5	Apply different algorithms for approximating the solutions of ordinary differential equations**(K3)**

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Applied Physics	Regulation: R 20

Sno	Course Outcome	Description
1	C110.1	Explain wave behavior of light, including interference and diffraction mathematically and conceptually.
2	C110.2	Explain operational principles and construction of Lasers. Understand the properties of optical fiber that affect the performance of a communication system.
3	C110.3	Apply the knowledge of quantum views for understanding the formation of energy bands in solids and their classifications.
4	C110.4	Describe relationship between specific properties and applications of dielectric and magnetic materials.
5	C110.5	Understand the physics of electrical conductivity in semiconductors and superconductors for various applications.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Object Oriented Programming through Java	Regulation: R 20

Sno	Course Outcome	Description
1	C111.1	Describe Classes and Object in Object Oriented Programming.(K2)
2	C111.2	Implement the concept of Inheritance and Polymorphism.(K3)
3	C111.3	Implement various windows based /GUI based applications.(K3)
4	C111.4	Demonstrate various IO streams in java.(K2)
5	C111.5	Implement multi tasking using Multi Threading. (K2)

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Network Analysis	Regulation: R 20

Sno	Course Outcome	Description
1	C112.1	To understand the basic concepts of network elements.
2	C112.2	To analyze the behaviour of RLC circutis under AC and DC excitations.
3	C112.3	To develop the knowledge on single phase AC circuits and to identify the operation of coupled circuits.
4	C112.4	To solve Network theorems and to understand the concept of Resonance.
5	C112.5	To understand two-port network parameters.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Basic Electrical Engineering	Regulation: R 20

Sno	Course Outcome	Description
1	C113.1	Determine the operation of DC generator and the characteristics of DC generators and Motors
2	C113.2	Develop equivalent circuit and calculate performance of transformers
3	C113.3	Determine the operation of synchronous generators and motors.
4	C113.4	Describe speed – torque characteristics of induction motor and starting methods of induction motor.
5	C113.5	Explain the operation of various special machines

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Electronics Workshop	Regulation: R 20

Sno	Course Outcome	Description
1	C114.1	Identify the Active & Passive Electronic Components
2	C114.2	List out Laboratory Equipment And their Operation
3	C114.3	Test the Electronic Components And Soldering

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Basic Electrical Engineering Lab	Regulation: R 20

Sno	Course Outcome	Description
1	C115.1	Compute the efficiency of dc shunt machine as a motor and generator
2	C115.2	Analyse the regulation of single-phase transformer
3	C115.3	Determine the performance characteristics of three phase induction motor
4	C115.4	Compute the regulation of the alternator by using synchronous impedance method
5	C115.5	Examine the speed characteristics of Dc Shunt Motor

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Applied Physics Lab	Regulation: R 20

Sno	Course Outcome	Description
1	C116.1	Evaluate the process and outcomes of an experiment quantitatively and Qualitatively
2	C116.2	Demonstrate the process and outcomes of an experiment
3	C116.3	Discuss an experiment collaboratively and ethically

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Environmental Science	Regulation:R20

S.no	Course Outcomes	Description
1	C117.1	Identify the basic concepts of Eco-system and its function in the Environment.
2	C117.2	List the natural resources and their importance for the sustenance of life and learn to conserve the natural resources.
3	C117.3	Apply conservation practices to protect the Bio-diversity.
4	C117.4	Illustrate the control of pollution with waste management practices.
5	C117.5	State Environmental legislations of India and the first global initiatives towards sustainable development.
6	C117.6	Prepare Environmental Assessment Procedure, the stages involved in EIA and the Environmental audit.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Electronic Devices and Circuits	Regulation: R 20

S.no	Course Outcomes	Description
1	C201.1	Distinguish the properties and characteristics of various semiconductor devices.
2	C201.2	Compute various rectifier circuits based on their parameters.
3	C201.3	Illustrate the behavior of transistor in different configurations.
4	C201.4	Determine the stability factors for biasing circuits.
5	C201.5	Analyze the performance of an amplifier using h-parameter

Department : Department of Electronics and Communication Engineering		
Academic Year: 2022-23 Year: II Semester: I	Course: Switching Theory and Logic Design	Regulation:R20

S.no	Course Outcomes	Description
1	C202.1	Distinguish the number systems, boolean theorems and logical operations
2	C202.2	Describe minimization techniques and combinational logic circuits
3	C202.3	Illustrate various combinational logic circuits and applications
4	C202.4	Apply knowledge of flip-flops in designing of registers and counters
5	C202.5	Analyze innovative designs by following the traditional design techniques

Department : Department of Electronics and Communication Engineering			
Academic Year: 2021-22	Year: II Semester: I	Course: Signals and Systems	Regulation:R20

S.no	Course Outcomes	Description
1	C203.1	Describe the characteristics of various signals using orthogonal basis and vector space.
2	C203.2	Select Fourier series and Fourier Transform to analyze periodic and aperiodic signals.
3	C203.3	Explain the response characteristics of linear systems using convolution function
4	C203.4	Choose the sampling frequency to reconstruct the sampled signal without aliasing effect and discuss the characteristics of LTI system using correlation function
5	C203.5	Examine the region of convergence with Laplace and Z- Transforms to various classes of signals

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Random Variables and Stochastic Processes	Regulation:R20

S.no	Course Outcomes	Description
1	C204.1	Differentiate various distribution and density functions.
2	C204.2	Examine the operations on random variables.
3	C204.3	List out the properties of multiple random variables.
4	C204.4	Illustrate the time and frequency domain characteristics of random signal.
5	C204.5	Estimate the nature of the response for an LTI systems under noise inputs.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Mathematics-III	Regulation:R20

S.no	Course Outcomes	Description
1	C205.1	Apply the Concepts of Vector Differentiation and Vector Integration in Applications of Engineering field
2	C205.2	Determine Laplace Transform and inverse Laplace Transforms of various functions and solve the linear ODE.
3	C205.3	Compute the Fourier series of periodic signals, apply integral expressions for the forwards and inverse Fourier transform to a range of non-periodic waveforms .
4	C205.4	Identify and solve different types of linear and nonlinear first order partial differential equations.
5	C205.5	Solve distinct cases of higher order partial differential equations and use to solve engineering problems.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: OOPS through Java Lab	Regulation:R20

S.no	Course Outcomes	Description
1	C206.1	Generalize the various concepts and principles of structured and object-oriented programming languages (K2)
2	C206.2	Identify classes, objects, members of a class and the relationships among them needed for a specific problem(K3)
3	C206.3	Develop interfaces using AWT and handle different kinds of events. (K3)
4	C206.4	Discuss file accessing mechanisms concepts in JAVA (K3).
5	C206.5	Discuss multi-threading concepts and Make use of exception handling in java(K3).

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Electronic Devices and Circuits – Lab	Regulation:R20

S.no	Course Outcomes	Description
1	C207.1	Calculate the electrical characteristics of any waveform using CRO and function Generator
2	C207.2	Analyze the characteristics of various semiconductor devices.
3	C207.3	Estimate the frequency responses of BJT, FET amplifiers.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Switching Theory and Logic Design – Lab	Regulation:R20

S.no	Course Outcomes	Description
1	C208.1	Describe different logic gates and number systems
2	C208.2	Design different combinational circuits
3	C208.3	Analyze various Sequential circuits

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Python Programming	Regulation:R20

S.no	Course Outcomes	Description
1	C209.1	Discuss the basic essential programming skills of Python Programming(K2)
2	C209.2	Applythe knowledge of problem-solving skills on strings and its methods(K3)
3	C209.3	Solve coding tasks related to data structures in pythonand build the functions, modules, and packages(K3)
4	C209.4	Demonstrate the file operations and features of object – oriented programming in python (K3)
5	C209.5	Develop GUI applications in Python and list types of exceptions(K3)

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Electronic Circuit Analysis	Regulation:R20

S.no	Course Outcomes	Description
1	C210.1	Apply the concepts of hybrid-pi for the analysis of CE and CC amplifiers.
2	C210.2	Simplify the multistage circuits using h-parameters.
3	C210.3	Examine the type of feedback in a given amplifier circuit.
4	C210.4	Establish the conditions for oscillations for any oscillator.
5	C210.5	Analyze various power amplifiers and frequency tuners.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Digital IC Design	Regulation:R20

S.no	Course Outcomes	Description
1.	C211.1	Write the IEEE Standard 1076 Hardware Description Language (VHDL).
2.	C211.2	Model complex digital systems at several levels of abstractions, behavioral,structureal, and rapid system prototyping.
3.	C211.3	Analyze and design basic digital circuits with combinatorial and sequential logic circuits using VHDL.
4.	C211.4	Analyze basic combinational digital circuit using CMOS, nMOS, Pseudo nMOS, Passtransistor and Transmission gate logic.
5.	C211.5	Analyze basic sequential digital circuits using CMOS, Passtransistor and Transmission gate logic.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Analog Communications	Regulation:R20

S.no	Course Outcomes	Description
1.	C212.1	Outline the basics of communication systems and generation & detection of AM waves.
2.	C212.2	Distinguish different AM modulation schemes
3.	C212.3	Discuss different FM modulator and demodulators
4.	C212.4	Analyze the various functional blocks of radio transmitters and receivers
5.	C212.5	Analyze the performance of analog modulation schemes in presence of noise and acquire knowledge on analog pulse modulation schemes

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Linear Control Systems	Regulation:R20

S.no	Course Outcomes	Description
1.	C213.1	Examine mathematical modelling of mechanical systems.
2.	C213.2	Analyze the transfer functions of a system using Block-diagrams and Signal flow graphs
3.	C213.3	Explain the stability of a system using various techniques
4.	C213.4	Express the stability of a closed-loop system in frequency domain.
5.	C213.5	Select state space analysis to model a system.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Management and Organizational Behavior	Regulation:R20

S.no	Course Outcomes	Description
1.	C214.1	Describe the management concepts
2.	C214.2	Illustrate Human resource management & marketing management in a organization
3.	C214.3	Discuss vision, mission & goals of the organization
4.	C214.4	Demonstrate Perceptual process of individual
5.	C214.5	Generalize the types of organizational conflicts

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Electronic Circuit Analysis Lab – I	Regulation:R20

S.no	Course Outcomes	Description
1.	C215.1	Sketch the frequency response of different amplifier circuit.
2.	C215.2	Determine the frequency of oscillations for various oscillators.
3.	C215.3	Simulate various analog circuits with the help of MultiSim.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Analog Communications Lab	Regulation:R20

S.no	Course Outcomes	Description
1.	C216.1	Determine the various parameters for CW modulated and demodulated signals.
2.	C216.2	Examine modulation and demodulation techniques through Matlab coding.
3.	C216.3	Build different operational blocks for modulation in Matlab Simulink

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Digital IC Design Lab	Regulation:R20

S.no	Course Outcomes	Description
1.	C217.1	Write a VHDL code for the digital circuits using xilinx vivado design environment.
2.	C217.2	Develop a VHDL code for basic combinational and sequential circuits.
3.	C217.3	Model counters , shift registers using VHDL coding.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Soft Skills	Regulation:R20

S.no	Course Outcomes	Description
1.	C218.1	**Articulate** appropriately at Group Discussions and Interviews
2.	C218.2	**Apply** suitable listening skills
3.	C218.3	**Write** context specific resumes relevant to the job opportunities
4.	C218.4	**Develop** proper signs of non-verbal communication
5.	C218.5	**Illustrate** effective written communication skills in letters and technical reports
6.	C218.6	**Demonstrate** right attitude, personality traits for the professional world

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: AICA	Regulation:R20

S.no	Course Outcomes	Description
1.	C301.1	Determine various parameters of an operational amplifier and analyze three terminal regulators.
2.	C301.2	Analyze linear and non linear applications of Op-Amp.
3.	C301.3	Analyze the designing of active filters using an Op-amp.
4.	C301.4	Explain the working of multi vibrators using Specific application IC 555.
5.	C301.5	Examine the working principles of DATA converters (ADC &DAC).

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: EMWTL	Regulation:R20

S.no	Course Outcomes	Description
1.	C302.1	Discuss electromagnetic wave propagation in various transmission line geometries.
2.	C302.2	Illustrate the transmission line parameters and properties using smith chart.
3.	C302.3	Determine differential operators and co-ordinate systems required to understand the nature of EM fields in the space.
4.	C302.4	Summarize time varying Maxwell's equations to study the behavior of electromagnetic waves.
5.	C302.5	Evaluate wave equations for E & H fields in different material media.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: DC	Regulation:R20

S.no	Course Outcomes	Description
1.	C303.1	Illustrate the baseband and pass band transmission techniques.
2.	C303.2	Classify various digital modulation techniques
3.	C303.3	Compare the probability of error for various digital modulation techniques.
4.	C303.4	Examine the mutual information and entropy of digital signals and Distinguish different source coding techniques based on their parameters.
5.	C303.5	Estimate the errors and correct through different techniques.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: EMI	Regulation:R20

S.no	Course Outcomes	Description
1.	C304.1	Apply the principles and characteristics of various instruments and classify the usage based on the requirements.
2.	C304.2	Analyze and describe the different signal generators and analyzers.
3.	C304.3	Examine the different signal characteristics using Oscilloscopes
4.	C304.4	Calculate the magnitudes of different electronic components using various bridge circuits
5.	C304.5	Demonstrate various types of transducers for measuring different parameters

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: **COA**	Regulation:R20

S.no	Course Outcomes	Description
1.	C305.1	Describe the architecture of FPGAs, tools used in modeling of digital design
2.	C305.2	Apply verilog HDL programming structure for digital circuits
3.	C305.3	Model complex digital systems at several levels of abstractions
4.	C305.4	Develop a verilog programs for different sequential circuits
5.	C305.5	Analyze a real time applications such as Vending machines and USB using verilog HDL

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: **AICA Lab**	Regulation:R20

S.no	Course Outcomes	Description
1.	C306.1	Demonstrate various linear and non linear applications of OP AMP.
2.	C306.2	Distinguish different multivibrators using IC555.
3.	C306.3	Examine the applications of PLL using IC 565.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: **DC Lab**	Regulation:R20

S.no	Course Outcomes	Description
1.	C307.1	Examine the performance of base band and pass band transmission of digital signals.
2.	C307.2	Apply various channel coding schemes & demonstrate their capabilities towards the improvement of the noise performance system.
3.	C307.3	Analyze different techniques in modern digital communications, in particular error Detection and correction techniques.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: **DS- Lab**	Regulation:R20

S.no	Course Outcomes	Description
1.	C308.1	Define basic concepts of data structure & algorithm.
2.	C308.2	Understand various aspects of stack, queue, list & graph.
3.	C308.3	Apply different searching & sorting techniques to solve the problem of data structure.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: MPMC	Regulation:R20

S.no	Course Outcomes	Description
1.	C309.1	Discuss the basic fundamental concepts of 8086 Microprocessors
2.	C309.2	Explain different types of addressing modes & Interrupts concept using low level language like ALP.
3.	C309.3	Develop a micro computer with external peripherals & I/O devices
4.	C309.4	Discuss 8051 micro controller architecture & its functionalities
5.	C309.5	distinguish between ARM & PIC microcontroller & discuss the architecture of ARM & PIC micro controller

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: VLSI D	Regulation:R20

S.no	Course Outcomes	Description
1.	C310.1	Summarize the fabrication process of various MOS technologies and to solve problems related to electrical behavior of MOS circuits.
2.	C310.2	Analyze scalable VLSI circuits keeping in view of various issues like delays, large capacitive loads ,fan in ,second order effects and etc.
3.	C310.3	Analyze the behavior of amplifier circuits with various loads.
4.	C310.4	Design various CMOS logic circuits for design of Combinational logic circuits.
5.	C310.5	Analyze the behavior of static and dynamic logic circuits.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: DSP	Regulation:R20

S.no	Course Outcomes	Description
1.	C311.1	Apply the difference equations concept in the analysis of discrete time systems.
2.	C311.2	use the FFT algorithm for solving the DFT of a given signal
3.	C311.3	Outline the steps to design and construct the structure of IIR digital filters
4.	C311.4	Evaluate the filter coefficients and construct the structure of FIR digital filters
5.	C311.5	Apply the signal processing concepts on DSP processor

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: III Semester : II	Course: CN	Regulation:R20

S.no	Course Outcomes	Description
1.	C312.1	Illustrate various network topologies, OSI, TCP/IP models of a network and different guided media.
2.	C312.2	Discuss different error correction, detection codes and MAC protocol in the network.
3.	C312.3	Discuss different multiple access techniques and Ethernet operations
4.	C312.4	Explain different routing algorithms and internet protocol version operations
5.	C312.5	Explain the significance of TCP, UDP and DNS services in email operations.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: ES	Regulation:R20

S.No	Course Outcomes	Description
1	C313.1	Discuss the basics of general computing and embedded systems with specific applications
2	C313.2	Explain embedded hardware components required for embedded system and design approaches
3	C313.3	Demonstrate Embedded firmware design approaches
4	C313.4	explain how to integrate hardware and firmware of an embedded system using real time operating system
5	C313.5	Illustrate developement environment of embedded system with specific tools

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: MPMC LAB	Regulation:R20

S.no	Course Outcomes	Description
1.	C314.1	Design and implement Various Arthimetic and logic Programs in 8086.
2.	C314.2	Design and Test various peripherals interfacing with 8086 & 8051
3.	C314.3	Design ALP to find sum of numbers with ARM Cortex Processor using KEIL

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: III Semester : II	Course: VLSI D Lab	Regulation:R20

S.no	Course Outcomes	Description
1.	C315.1	Implement of the different combinational and squetial circuit using FPGA kits.
2.	C315.2	Determine the functional verification for various combinational and sequential circuits.
3.	C315.3	Simulate various combinational and sequential circuits with the help of Mentor Graphics.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: DSP Lab	Regulation:R20

S.no	Course Outcomes	Description
1.	C316.1	Demonstrate various operations performed on discrete time signals.
2.	C316.2	Distinguish the frequency response characteristics of IIR and FIR filters.
3.	C316.3	Inspect sampling theorem and FFT Algorithm

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: ARM Lab	Regulation:R20

S.no	Course Outcomes	Description
1.	C317.1	Compute the baisc programs in Arduino Unmo board
2.	C317.2	Test the output of SPI and UART devices interfacing with Arduino Uno board
3.	C317.3	Analyze the output parameters of various sensors interfacing with Arduino Uno board

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: MOCE	Regulation:R19

S.no	Course Outcomes	Description
1.	C401.1	Illustate the fundamental characteristics of different microwave guides
2.	C401.2	Caliculate the S Parameters of different microwave components
3.	C401.3	Diffrentiate between step index and gradent index fibers
4.	C401.4	Design link power budget for a given optical system
5.	C401.5	Measuring Attenution in microwave and Optical systems

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: DCCN	Regulation:R19

S.no	Course Outcomes	Description
1.	C402.1	Illustrate various network topologies, OSI, TCP/IP models of a network and 802.11 architecture.
2.	C402.2	Discuss different error correction, detection codes and MAC protocol in the network.
3.	C402.3	Discuss different network procedures and formats in the layer.
4.	C402.4	Discuss the UDP and TCP segment structures in protocol
5.	C402.5	Explain the significance of data transfer through different protocols.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: DIVP	Regulation:R19

S.no	Course Outcomes	Description
1.	C403.1	Make use of Transforms & fundamentals for image processing applications
2.	C403.2	Make use of Transforms & fundamentals for image processing applications
3.	C403.3	Discuss image restoration operations/techniques on images.
4.	C403.4	Summarize the formation models of 3D Motion.
5.	C403.5	List the motion estimation and video coding methods.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: CSP	Regulation:R19

S.no	Course Outcomes	Description
1.	C404.1	Demonstrate basic concepts of data communications
2.	C404.2	Explain the functions of each of the layers of the seven-layer OSI model
3.	C404.3	Explain the advantages and disadvantages of data communication protocols
4.	C404.4	Illustrate various wired and wireless protocols
5.	C404.5	Illustrate various network types

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: ES	Regulation:R19

S.no	Course Outcomes	Description
1.	C405.1	Discuss the basics of general computing and embedded systems with specific applications
2.	C405.2	Explain embedded hardware components required for embedded system and design approaches
3.	C405.3	Demonstrate Embedded firmware design approaches
4.	C405.4	explain how to integrate hardware and firmware of an embedded system using real time operating system
5.	C405.5	Illustrate developement environment of embedded system with specific tools

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: IOT L	Regulation:R19

S.no	Course Outcomes	Description
1.	C406.1	Understand the concepts of different IoT boards
2.	C406.2	Test different sensors interfacing with Psoc4BLE board
3.	C406.3	Develop different IoT applications on embedded platform and analyze the performance

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: MOCE L	Regulation:R19

S.no	Course Outcomes	Description
1.	C407.1	Studying characteristics of different microwave components
2.	C407.2	Caliculation of VSWR,Frequency & Attenuation in a Microwave Waveguide
3.	C407.3	Caliculation of Numerical Apperture of Optical System

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: Project -1	Regulation:R19

S.no	Course Outcomes	Description
1.	C408.1	Formulate and apply mathematical, science and engineering principles to solve real time engineering problems.
2.	C408.2	Test the existing data, communicate and conduct research on complex problems using modern tools.
3.	C408.3	Validate the obtained results on contemporary issues related to society and environment.
4.	C408.4	Determine effectively the engineering principles used in their project individually and as a team as per the norms of engineering practice.
5.	C408.5	Structure future work to promote life-long learning in the context of technological adaptation.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: IV Semester: II	Course: WC	Regulation:R19

S.no	Course Outcomes	Description
1.	C409.1	Illustrate various wireless standards and calculation of SNR & BER for wireless system models.
2.	C409.2	Discuss different properties of PN codes and advantages of CDMA.
3.	C409.3	Discuss various system models and properties for MIMO receiver.
4.	C409.4	Analyze the BER and PAPR calculations for OFDM.

5.	C409.5	Illustrate the basic concepts of satellite communications and different parameters needed to place satellite in orbit.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: IV Semester: II	Course: CSC	Regulation:R19

S.no	Course Outcomes	Description
1.	C410.1	Understand various cybercrimes and attacks. (K2)
2.	C410.2	Understand different fundamental tools and methods used in cybercrime.(K2)
3.	C410.3	Analyze the types of computer investigation tools used in cyber-attacks (K4)
4.	C410.4	Analyze various computer forensics systems.(K4)
5.	C410.5	Illustrate the basic concepts for data recovery, evidence collection and Indian Law.(K2)

Department : Department of Electronics and Communication Engineering			
Academic Year: 2022-23	Year: IV Semester: II	Course: Project-2	Regulation:R19

S.no	Course Outcomes	Description
1.	C411.1	Formulate and apply mathematical, science and engineering principles to solve real time engineering problems.
2.	C411.2	Test the existing data, communicate and conduct research on complex problems using modern tools.
3.	C411.3	Validate the obtained results on contemporary issues related to society and environment.
4.	C411.4	Determine effectively the engineering principles used in their project individually and as a team as per the norms of engineering practice.
5.	C411.5	Structure future work to promote life-long learning in the context of technological adaptation.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2021-22	Year: I Semester: I	Course: Communicative English	Regulation: R20

S.no	Course Outcomes	Description
1.	C101.1	Apply reading strategies for skimming and scanning and construct paragraphs through mechanics of writing. (K3)
2.	C101.2	Ask and answer questions through functional English; discuss in groups and develop conversational and communication skills.(K2)
3.	C101.3	Interpret texts for comprehension; and write letters, E-mails and CV's through principles of written communication.(K3)
4.	C101.4	Utilize verbal and graphic devices to transfer information; and produce writing for vari**ous purposes.(K3)**
5.	C101.5	Build sentences using proper grammatical structures and correct word forms; and practice presentations for academic and technical purposes (K3)

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: I	Course: Mathematics – I	Regulation: R20

S.no	Course Outcomes	Description
1.	C102.1	Determine the convergence of an infinite series and utilize mean value theorems to real life Problems (K3).
2.	C102.2	Understand, classify and solve analytically a wide range of first order ordinary differential equations along with the applications of differential equations in engineering problems (K2 & K3).
3.	C102.3	Solve analytically the higher order ordinary differential equations with constant coefficients of various types and apply in their studies (K3).
4.	C102.4	Apply the knowledge of Mean value theorems, Maxima and Minima of functions of several variables which is useful in optimization (K3).
5.	C102.5	Apply double integration and triple integration techniques in evaluating areas bounded by curves and volumes of the solids(K3).

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: I	Course: Mathematics – II	Regulation: R20

S.no	Course Outcomes	Description
1.	C103.1	Solve system of linear algebraic equations using matrices**(K3)**
2.	C103.2	Make use of matrix algebra techniques that is needed by engineers for practical applications**(K3)**
3.	C103.3	Compute the approximate roots of polynomial and transcendental equations using different algorithms**(K3)**
4.	C103.4	Apply Newton's forward & backward interpolation and Lagrange's formulae for equal and unequal intervals**(K3)**
5.	C103.5	Apply different algorithms for approximating the solutions of ordinary differential equations**(K3)**

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: I	Course: Programming for Problem Solving Using C	Regulation: R20

S.no	Course Outcomes	Description
1.	C104.1	**Describe** various types of computer systems, computing environments and discuss about various basic aspects of C programming
2.	C104.2	**Develop** the programs that use two-way/ multi-way selection and loop construct for a given problem.
3.	C104.3	**Apply** the structures, union, strings and array operations in a specific need.
4.	C104.4	**Illustrate** about pointers, dynamic memory allocation and know the significance of Pre-processor.
5.	C104.5	**Make use of** functions and file Operations for a given applications

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: I	Course: Engineering Drawing & Design	Regulation: R20

S.no	Course Outcomes	Description
1.	C105.1	Identify the use of various drawing instruments and to construct various types of polygons, curves and scales.
2.	C105.2	Represent the projections of points, lines and line inclined to both the planes and its traces.
3.	C105.3	Sketch the projections of various types of plane surfaces in different positions with respect to reference planes.
4.	C105.4	Develop the projections of various types of solids in different positions with respect to reference planes.
5.	C105.5	Construct the 3D objects in 2D planes and vice versa and make use of Auto Cad to create the 2D and 3D objects.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: I	Course: Communicative English Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C106.1	Show the knowledge in listening and speaking English sounds and employing English stress and intonation as per the accepted standard (K3)
2.	C106.2	Employ suitable listening and reading skills for improved communication abilities. (K3)

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: I	Course: Electrical Engineering Workshop	Regulation: R20

S.no	Course Outcomes	Description
1.	C107.1	Classify different types of cables/wires, switches, fuses, MCCB, ELCB, resistors, capacitors, electrical tools and symbols with their ratings. (K2)
2.	C107.2	Calculate voltage, current, power and power factor in a circuit. (K3)
3.	C107.3	Explain the limitations, tolerances, safety aspects of electrical systems and wiring. (K3)

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: I	Course: Programming for Problem Solving Using C Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C108.1	Extend the knowledge for C programming development for basic applications
2.	C108.2	Examine the control flow and Selection and Iterative Statements
3.	C108.3	Utilize the concepts of C arrays and strings for program development
4.	C108.4	Construct C programs using structures, unions, pointers and memory allocation functions
5.	C108.5	Practice the Modular Programming Skills to solve complex problems and also interpret the operations on files

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Mathematics – III	Regulation: R20

S.no	Course Outcomes	Description
1.	C109.1	Apply the Concepts of Vector Differentiation and Vector Integration in Applications of Engineering field
2.	C109.2	Determine Laplace Transform and inverse Laplace Transforms of various functions and solve the linear ODE.
3.	C109.3	Compute the Fourier series of periodic signals, apply integral expressions for the forwards and inverse Fourier transform to a range of non-periodic waveforms .
4.	C109.4	Identify and solve different types of linear and nonlinear first order partial differential equations.
5.	C109.5	Solve distinct cases of higher order partial differential equations and use to solve engineering problems.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Applied Physics	Regulation: R20

S.no	Course Outcomes	Description
1.	C110.1	Explain wave behavior of light, including interference and diffraction mathematically and conceptually.
2.	C110.2	Explain operational principles and construction of Lasers. Understand the properties of optical fiber that affect the performance of a communication system.
3.	C110.3	Apply the knowledge of quantum views for understanding the formation of energy bands in solids and their classifications.
4.	C110.4	Describe relationship between specific properties and applications of dielectric and magnetic materials.
5.	C110.5	Understand the physics of electrical conductivity in semiconductors and superconductors for various applications.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Data Structures Through C	Regulation: R20

S.no	Course Outcomes	Description
1.	C111.1	Demonstrate the behavior of Data Structures, Abstract, Data types, Searching, Sorting and determine the complexity analysis (K3)
2.	C111.2	Apply the concept of various linked lists and examine the advantages and disadvantages (K3)
3.	C111.3	Examine the concepts of queues and Stacks along with their operations (K3)
4.	C111.4	Investigate the usage of stacks (K3)
5.	C111.5	Simulate the hierarchal data structures called trees (K3)

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Electrical Circuit Analysis – I	Regulation: R20

S.no	Course Outcomes	Description
1.	C112.1	Apply the knowledge of basic circuital law and simplify the network using reduction techniques
2.	C112.2	Discuss the concept of magnetic coupled circuits**.**
3.	C112.3	Identify the behavior of RLC networks for sinusoidal excitations
4.	C112.4	Discuss the locus diagram of RL,RC,RLC
5.	C112.5	Discuss the network theorems for analysis of electrical networks.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Basic Civil and Mechanical Engineering	Regulation: R20

S.no	Course Outcomes	Description
1.	C113.1	Apply concepts of Rosette analysis for strain measurements.
2.	C113.2	Analyse the characteristics of common building materials.
3.	C113.3	Compare the working Characteristics of Internal Combustion engines.
4.	C113.4	Compare the differences between boiler mountings and accessories.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Applied Physics Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C114.1	Evaluate the process and outcomes of an experiment quantitatively and qualitatively
2.	C114.2	Demonstrate the process and outcomes of an experiment
3.	C114.3	Discuss an experiment collaboratively and ethically

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Basic Civil and Mechanical Engineering Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C115.1	Solve to arrive at finding constant speed and variable speed on IC engines and interpret their performance.
2.	C115.2	Estimate energy distribution by conducting heat balance test on IC engines.
3.	C115.3	Explain procedure for standadization of Experiments.
4.	C115.5	Determine Flow discharge measuring device used in pipes channels and tanks.
5.	C115.5	Determine Fluid and Flow properties.
6.	C115.6	Solve for drag Coefficients.
7.	C115.7	Test for the Performance of Pumps and turbines.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Data Structures through C Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C116.1	Demonstrate the various Object Oriented Programming concepts such as Constructors, Destructors, Functions and Operators(**K3)**
2.	C116.2	To Practice Inheritance, Templates and Exception Handling (**K3**)
3.	C116.3	Experiment with the Single Linked List operations such as Insertion, Deletion, Searching and Sorting(**K3**)
4.	C116.4	Discriminate between Stack and Queue Linear Data Structures (**K4**).
5.	C1116.5	To Analyze the hierarchical Data Structures like Binary Search Trees for solving the real-time problems (**K4**).

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Constitution of India	Regulation: R20

S.no	Course Outcomes	Description
1.	C117.1	Understand historical background of the constitution making and its importance for building a democratic India.
2.	C117.2	Understand the functioning of three wings of the government i.e., executive, legislative and judiciary.
3.	C117.3	Understand the value of the fundamental rights and duties for becoming good citizen of India.
4.	C117.4	Analyze the decentralization of power between central, state and local self government
5.	C117.5	Apply the knowledge in strengthening of the constitutional institutions like CAG, Election Commission and UPSC for sustaining democracy.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Mathematics – IV	Regulation: R20

S.no	Course Outcomes	Description
1.	C201.1	Use Cauchy-Riemann equations to find analytic functions , harmonic conjugates and evaluation of integrals over closed contours.
2.	C201.2	Apply the concept of residues to evaluate Improper integrals and Definite integrals involving Trigonometric functions .
3.	C201.3	Use discrete and continuous probability distributions to solve problems.
4.	C201.4	Identify the types of sampling methods for different data samples.
5.	C201.5	Test suitable sample statistical tests in testing hypothesis data.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Electronic Devices and Circuits	Regulation:R20

S.no	Course Outcomes	Description
1.	C202.1	Understand the concepts of Semiconductor Technology
2.	C202.2	Appraise the construction & operation of electronic device
3.	C202.3	Develop the biasing circuits using the electronic device
4.	C202.4	Model the amplifier circuits transistor circuits
5.	C202.5	Analyze the characteristics of the devices

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Electrical Circuit Analysis – II	Regulation: R20

S.no	Course Outcomes	Description
1.	C203.1	Analyze three- phase circuits under balanced and unbalanced condition.
2.	C203.2	Estimate transient response of networks with DC excitation.
3.	C203.3	Estimate transient response of networks with AC excitation.
4.	C203.4	Determine the different types of two port network parameters.
5.	C203.5	Design different filters for the electrical network under different conditions.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: DC Machines and Transformers	Regulation: R20

S.no	Course Outcomes	Description
1.	C204.1	Understand the concepts of Electromechanical energy conversion and DC Generator
2.	C204.2	Understand the construction, principle of operation and performance of DC machines.
3.	C204.3	Understand the performance of DC motors and single phase Transformer.
4.	C204.4	Learn the concepts of Regulation, Losses and efficiency of Single Phase Transformers.
5.	C204.5	Apply the concepts of Parallel operation of Transformers and Tap changing methods.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Electro Magnetic Fields	Regulation: R20

S.no	Course Outcomes	Description
1.	C205.1	Understand the concepts of Semiconductor Technology
2.	C205.2	Appraise the construction & operation of electronic device
3.	C205.3	Develop the biasing circuits using the electronic device
4.	C205.4	Model the amplifier circuits transistor circuits
5.	C205.5	Analyze the characteristics of the devices

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Electrical Circuits Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C206.1	Examine Various Theorems and Two port Networks
2.	C206.2	Determine and Self and Mutual Inductances
3.	C206.3	Determine the locus diagrams and waveforms for leading and lagging networks

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: DC Machines and Transformers Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C207.1	Determine the magnetization characteristics of DC shunt Generator and obtain its critical values.
2.	C207.2	Predict the characteristics of DC shunt machines and obtain its operating efficiency
3.	C207.3	Predict the characteristics of transformer and obtain its operating efficiency

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Electronic and Devices and Circuits Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C208.1	Demonstrate various electronic components and equipment
2.	C208.2	Deduce the characteristics of semiconductor devices
3.	C208.3	Estimate the frequency responses of BJT, FET amplifiers

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Skill oriented course – Design of Electrical Circuits using Engineering Software Tools	Regulation: R20

S.no	Course Outcomes	Description
1.	C209.1	write the MATLAB programs to simulate the electrical circuit problems
2.	C209.2	simulate various circuits for electrical parameters
3.	C209.3	simulate various wave form for determination of wave form parameters
4.	C209.4	simulate RLC series and parallel resonance circuits for resonant parameters
5.	C209.5	simulate magnetic circuits for determination of self and mutual inductances

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: II Semester: I	Course: Professional Ethics & Human Values	Regulation: R20

S.no	Course Outcomes	Description
1.	C210.1	Discuss the ethical concepts in organization (K2)
2.	C210.2	Demonstrate human rights and dignity (K2)
3.	C210.3	Explain Kohlberg's theory and Gilligan's argument (K3)
4.	C210.4	Distinguish delayed risk and immediate risk (K3)
5.	C210.5	Determine professional and individual rights (K2)

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Python Programming	Regulation: R20

S.no	Course Outcomes	Description
1.	C211.1	Discuss the basic essential programming skills of Python Programming(K2)
2.	C211.2	Apply the knowledge of problem-solving skills on strings and its methods(K3)
3.	C211.3	Solve coding tasks related to data structures in pythonand build the functions, modules, and packages(K3)
4.	C211.4	Demonstrate the file operations and features of object – oriented programming in python (K3)
5.	C211.5	Develop GUI applications in Python and list types of exceptions(K3)

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Digital Electronics	Regulation: R20

S.no	Course Outcomes	Description
1.	C212.1	Describe various number systems, error detecting , correcting binary codes and logic operations.
2.	C212.2	Apply Boolean laws, k-map & Tabular methods to minimize switching functions.
3.	C212.3	Design the combinational circuits and Programmable Logic Devices.
4.	C212.4	Design the sequential logic circuits for Counters and Flip-Flops (FF).
5.	C212.5	Analyze clocked sequential circuits using state diagrams

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Power System – I	Regulation: R20

S.no	Course Outcomes	Description
1.	C213.1	Identify the different components of thermal power plants
2.	C213.2	Illustrate the different components of nuclear power plants
3.	C213.3	Illustrate the different components of an air and gas insulated substations
4.	C213.4	Identify single core and multi core cables with different insulating materials
5.	C213.5	Analyze the different economic factors of power generation and tariffs

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Induction and Synchronous Machines	Regulation: R20

S.no	Course Outcomes	Description
1.	C214.1	Illustarate the operation and performance of three phase induction motor
2.	C214.2	Analyze the torque-speed relation, performance of induction motor and induction generator.
3.	C214.3	Illustarate the operation and Implement the starting of single phase induction motors.
4.	C214.4	Analyze the winding design and predetermine the regulation of synchronous generators.
5.	C214.5	Illustarate the hunting phenomenon and implement methods of staring and correction of power factor with synchronous motor.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Managerial Economics & Financial Analysis	Regulation: R20

S.no	Course Outcomes	Description
1.	C215.1	Generalize managerial economics & demand forecasting
2.	C215.2	Illustrate multi-variable production function and MRTS
3.	C215.3	Explain P/O determination of various market structures
4.	C215.4	Illustrate funds flow statement and cash flow statement
5.	C215.5	Illustrate Discounting cash flow techniques

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Python Programming Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C216.1	**Develop** python programs using control flow statements.
2.	C216.2	**Examine** the proficiency in handling of strings and Lists.
3.	C216.3	**Develop** programs using data structures like dictionaries, tuples and sets using built-in functions, modules and packages
4.	C216.4	**Develop** programs using the file operations and features of object-oriented programming in python
5.	C216.5	**Develop** GUI applications in Python and list types of exceptions

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Induction and Synchronous Machines Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C217.1	Analyze the speed control and performance of single phase and three phase of induction motor
2.	C217.2	Examine the regulation of three–phase alternator by various methods
3.	C217.3	Determine the Xd/ Xq ratio of alternator and asses the performance of Three - phase synchronous motor

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Digital Electronics Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C218.1	Learn the basics of gates, filp-flops and counters
2.	C218.2	Construct basic combinational circuits and verify their functionalities
3.	C218.3	Apply the design procedures to design basic sequential circuits
4.	C218.4	To understand the basic digital circuits and to verify their operation
5.	C218.5	Apply Boolean laws to simplify the digital circuits

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: II Semester: II	Course: Skill oriented course – IoT Applications of Electrical Engineering	Regulation: R20

S.no	Course Outcomes	Description
1.	C219.1	Apply various technologies of Internet of Things to real time applications and communication technologies used in the Internet of Things
2.	C219.2	Connect the devices using web and internet in the IoT environment
3.	C219.3	Implement IoT to study Smart Home, Smart city, etc
4.	C219.4	Apply various technologies of Internet of Things to real time applications and communication technologies used in the Internet of Things
5.	C219.5	Connect the devices using web and internet in the IoT environment

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: **Power Systems – II**	Regulation: R20

S.no	Course Outcomes	Description
1.	C301.1	Calculate parameters of transmission lines for different circuit configurations.
2.	C301.2	Determine the performance of short, medium and long transmission lines.
3.	C301.3	Analyse the effect of travelling waves on transmission lines.
4.	C301.4	Analyse the various voltage control methods and effect of corona.
5.	C301.5	Calculate sag/tension of transmission lines and performance of line insulators.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: **Power Electronics**	Regulation: R20

S.no	Course Outcomes	Description
1.	C302.1	Illustrate the static and dynamic characteristics of SCR, Power-MOSFET and Power-IGBT.
2.	C302.2	Analyse the operation of phase-controlled rectifiers.
3.	C302.3	Analyse the operation of three-phase full–wave converters, AC Voltage Controllers and Cycloconverters.
4.	C302.4	Examine the operation and design of different types of DC-DC converters.
5.	C302.5	Analyse the operation of PWM inverters for voltage control and harmonic mitigation.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: **Control Systems**	Regulation: R20

S.no	Course Outcomes	Description
1.	C303.1	Derive the transfer function of physical systems and determination of overall transfer function using block diagram algebra and signal flow graphs.
2.	C303.2	Determine time response specifications of second order systems and absolute and relative stability of LTI systems using Routh's stability criterion and root locus method.
3.	C303.3	Analyze the stability of LTI systems using frequency response methods.
4.	C303.4	Design Lag, Lead, Lag-Lead compensators to improve system performance using Bode diagrams.
5.	C303.5	Represent physical systems as state models and determine the response. Understand the concepts of controllability and observability

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: **RES**	Regulation: R20

S.no	Course Outcomes	Description
1.	C304.1	Analyze solar radiation data, extra-terrestrial radiation, radiation on earth's surface and solar Energy Storage.
2.	C304.2	Illustrate the components of wind energy systems.
3.	C304.3	Illustrate the working of biomass, digesters and Geothermal plants.
4.	C304.4	Demonstrate the principle of Energy production from OTEC, Tidal and Waves.
5.	C304.5	Evaluate the concept and working of Fuel cells & MHD power generation.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: **UEE**	Regulation: R20

S.no	Course Outcomes	Description
1.	C305.1	Understand Various levels of illuminosity produced by different illuminating sources and able to estimate the illumination levels produced by various sources and recommend the most efficient illuminating sources and should be able to design different lighting systems by taking inputs and constraints in view.
2.	C305.2	Identify most appropriate heating and welding techniques for suitable applications.

3.	C305.3	Identify a suitable motor for electric drives and industrial applications.
4.	C305.4	Determine the speed/Time characteristics of different types of traction systems and determination of various traction parameters.
5.	C305.5	Know the necessity and usage of different energy storage schemes for different applications.

Department : Department of Electrical and Electronics Engineering				
Academic Year: 2022-23		Year: III Semester: I	Course: **CS-Lab**	Regulation: R20
S.no	**Course Outcomes**	**Description**		
1.	C306.1	Analyze the performance and working Magnetic amplifier, D.C and A.C. servo motors and synchros. P,PI,PD and PID controllers, lag, lead and lag–lead compensators		
2.	C306.2	Determine the transfer function of D.C Motor, controllability and observability.		
3.	C306.3	Analyze the stability in time and frequency domain.		

Department : Department of Electrical and Electronics Engineering				
Academic Year: 2022-23		Year: III Semester: I	Course: **PE-Lab**	Regulation: R20
S.no	**Course Outcomes**	**Description**		
1.	C307.1	Analyse characteristics of various power electronic devices and design firing circuits for SCR.		
2.	C307.2	Analyse the performance of single–phase dual, three–phase full–wave bridge converters and dual converter with both resistive and inductive loads, control of Buck converter and Boost converter		
3.	C307.3	Examine the operation of Single-phase AC voltage regulator and Cycloconverter with resistive and inductive loads, control of Square wave inverter and PWM inverter		

Department : Department of Electrical and Electronics Engineering				
Academic Year: 2022-23		Year: III Semester: I	Course: **Employability Skills**	Regulation: R20
S.no	**Course Outcomes**	**Description**		
1.	C308.1	**Apply** core competencies to succeed in professional and personal life		
2.	C308.2	**Make use of** presentation skills effectively to present with appropriate body Language		
3.	C308.3	**Employ** relevant corporate etiquette with positive attitude		
4.	C308.4	**Demonstrate** effective strategies for emotional intelligence and stress Management		
5.	C308.5	**Identify** appropriate interview skills and succeed in interviews		

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: III Semester: I	Course: **Internship**	Regulation: R20

S.no	Course Outcomes	Description
1.	C309.1	Understanding the modern tools used in the field of Electrical and Electronics engineering for product development.
2.	C309.2	Demonstrate ethical conduct and professional accountability while working in a team for the benefit of society.
3.	C309.3	Understand the resources requirement and planning to facilitate the project success.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: **Microprocessors and Microcontrollers**	Regulation: R20

S.no	Course Outcomes	Description
1.	C310.1	Analyse the concepts of the Microprocessor capability in general and explore the evaluation of microprocessors.
2.	C310.2	Analyse the instruction sets - addressing modes - minimum and maximum modes operations of 8086 Microprocessors
3.	C310.3	Analyse the Microcontroller and interfacing capability
4.	C310.4	Analyse the architecture and interfacing of 8051 controller
5.	C310.5	Analyze the concepts of PIC micro controller and its programming.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: **Electrical measurements and instrumentation**	Regulation: R20

S.no	Course Outcomes	Description
1.	C311.1	Analyze the construction and working of various types of analog instruments.
2.	C311.2	Describe the construction and working of wattmeter and power factor meters
3.	C311.3	Analyse the construction and working various bridges for the measurement resistance - inductance and capacitance
4.	C311.4	Analyse the operational concepts of various transducers
5.	C311.5	Analyse the construction and operation digital meters

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: **Power System Analysis**	Regulation: R20

S.no	Course Outcomes	Description
1.	C312.1	Predict impedance diagram for a power system network and calculate per unit quantities.
2.	C312.2	Calculate the load flow solution to a power system using different methods.
3.	C312.3	Analyse Z_{bus} for a power system networks and analyse the effect of symmetrical faults.
4.	C312.4	Calculate the sequence components for power system Components and analyse its effects of unsymmetrical faults.
5.	C312.5	Analyse the stability concepts of power system.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: **Switchgear and Protection**	Regulation: R20

S.no	Course Outcomes	Description
1.	C313.1	Illustrate the principles of arc interruption for application to high voltage circuit breakers of air - oil - vacuum - SF_6 gas type.
2.	C313.2	Analyse the working principle and operation of different types of electromagnetic protective relays.
3.	C313.3	Analyse the protective schemes for generator and transformers for different fault conditions.
4.	C313.4	Classify various types of protective schemes used for feeders and bus bar protection and Types of static relays.

5.	C313.5	Analyse the operation of different types of over voltages protective schemes required for insulation co–ordination and types of neutral grounding.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: **BSS**	Regulation: R20

S.no	Course Outcomes	Description
1.	C314.1	Understand linear time invariant systems.
2.	C314.2	Apply the concepts of Fourier series representations to analyze continuous and discrete time periodic signals.
3.	C314.3	Understand and apply the continuous time Fourier transform, discrete time Fourier transform.
4.	C314.4	Apply the concepts of Laplace transform, and z-Transform to the analysis and description of LTI continuous and discrete-time systems.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: **EMT- Lab**	Regulation: R20

S.no	Course Outcomes	Description
1.	C315.1	Predict the error in phantom and direct loading and calibration of electrical characteristics of resistance - inductance and capacitance
2.	C315.2	Determine the usage of CT's - PT's for measurement purpose.
3.	C315.3	Deduce the strains - frequency and phase difference.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: **MPMC - Lab**	Regulation: R20

S.no	Course Outcomes	Description
1.	C316.1	Develop 8086 Assembly Language Programming of 8086 kit and MASM software.
2.	C316.2	Analyze the interfacing of 8086 Microprocessor with Special Programmable Peripheral Devices.
3.	C316.3	Analyze the interfacing microprocessors and microcontrollers for real world applications.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: **Power systems and Simulation lab**	Regulation: R20

S.no	Course Outcomes	Description
1.	C317.1	Analyze Sequence Impedances of Alternator and Transformer
2.	C317.2	Analyse the performance of transmission lines and power flow methods in power systems
3.	C317.3	Analyse and simulate the performance of PI controller for load frequency control.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: III Semester: II	Course: Skill advanced course Machine learning with python	Regulation: R20

S.no	Course Outcomes	Description
1.	C318.1	Illustrate and comprehend the basics of Machine Learning with Python
2.	C318.2	Demonstrate the algorithms of Supervised Learning and be able to differentiate linear and logistic regressions
3.	C318.3	Demonstrate the algorithms of Unsupervised Learning and be able to understand the clustering algorithms

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: **Switchgear & Protection**	Regulation: R19

S.no	Course Outcomes	Description
1.	C401.1	Explain the principles of arc interruption for application to high voltage circuit breakers of air, oil, vacuum, SF_6 gas type.
2.	C401.2	Explain the working principle and operation of different types of electromagnetic protective relays.
3.	C401.3	Classify various protective schemes used for Generators and Transformers.
4.	C401.4	Classify various protective schemes used for feeders and bus bars.
5.	C401.5	Classify different static relays and operations of different types of static relays and over voltages in a power system

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: **OOPs through JAVA**	Regulation: R19

S.no	Course Outcomes	Description
1.	C402.1	Analyse Java programming concepts and utilize Java Graphical User Interface in
2.	C402.2	Analyse Program writing, execute and troubleshoot Java programming for networking concepts,
3.	C402.3	Analyse Java Application for distributed environment
4.	C402.4	Design and develop multi-tier applications
5.	C402.5	Analyze Enterprise applications

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: **RES**	Regulation: R19

S.no	Course Outcomes	Description
1.	C403.1	Analyze solar radiation data, extraterrestrial radiation, and radiation on earth's surface.
2.	C403.2	Explain solar thermal collectors
3.	C403.3	Select solar photo voltaic systems.
4.	C403.4	Develop maximum power point techniques in solar PV and wind energy systems.
5.	C403.5	Explain basic principle and working of hydro, tidal power plant working of biomass, fuel cell and geothermal systems.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: **UEE**	Regulation: R19

S.no	Course Outcomes	Description
1.	C404.1	Estimate various level of luminosity produced by different illuminating sources different lighting systems.
2.	C404.2	Identify most appropriate heating or welding techniques for suitable application.
3.	C404.3	Identify a suitable motor for electric drives and industrial application.
4.	C404.4	Determine the speed/time characteristics of different types of traction motors energy consumption levels at various modes of operation of motors
5.	C404.5	Predict the necessity and usage of different energy storage schemes for different applications.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: **High Voltage Engineering**	Regulation: R19

S.no	Course Outcomes	Description
1.	C405.1	Analyze the theory of breakdown and withstand phenomenon for all types of dielectric materials.
2.	C405.2	Explain the techniques of generation of AC,DC and Impulse voltages.
3.	C405.3	Explain the measurement of high AC,DC, Impulse voltages and currents.
4.	C405.4	Analyze the position to measure dielectric property of materials used in HV equipment.
5.	C405.5	Compare the testing techniques of various equipments used in HV engineering

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: **Linear & Digital Ic Applications Lab**	Regulation: R19

S.no	Course Outcomes	Description
1.	C406.1	Analyse the characteristics of ICs-741, 555, 565, 566.
2.	C406.2	Analyse the concepts of IC 741 for different applications.
3.	C406.3	Analyse the data connection circuits, digital circuits, and Registers using IC's

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: **Power Systems & Simulation Lab**	Regulation: R19

S.no	Course Outcomes	Description
1.	C407.1	Analyze Sequence Impedances of Alternator and Transformer
2.	C407.2	Examine the Tong tester and Dielectric Strength of Oil
3.	C407.3	Determine energy management systems functions economically at load dispatch center.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: **Industrial Training /Skill Development Programmes / Research Project**	Regulation: R19

S.no	Course Outcomes	Description
1.	C408.1	Observe the skills of Demonstrating the learning achievements in the field of industrial training and imbibe the knowledge of effective skill development for research.
2.	C408.2	Apply knowledge in building their career in particular fields and face any type of interviews, viva-voice, and aptitude tests.
3.	C408.3	Elaborate their communication skills and interactiveness.
4.	C408.4	Rephrase the uses and application of Electrical machines, Power systems and power electronics domains
5.	C408.5	Classify the knowledge about the various principles of Electrical and Electronics with the barriers which effects in a professional set up.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: IV Semester: I	Course: **Project-I**	Regulation: R19

S.no	Course Outcomes	Description
1.	C409.1	Observe the skills of Demonstrating the learning achievements in the field of technology and imbibe the knowledge of effective classroom speaking and presentation.
2.	C409.2	Apply knowledge in building their career in particular fields and face any type of interviews, viva-voice, and aptitude tests.
3.	C409.3	Elaborate their communication skills and interactiveness.
4.	C409.4	Rephrase the uses and application of Electrical machines, Power systems and power electronics domains
5.	C409.5	Classify the knowledge about the various principles of Electrical and Electronics with the barriers which effects in a professional set up.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: IV Semester: II	Course: **Power System Operation & Control**	Regulation: R19

S.no	Course Outcomes	Description
1.	C410.1	Compute optimal scheduling of Generators.
2.	C410.2	Discuss about thermal and hydro power plants operation in meeting the load demand optimally.
3.	C410.3	Solve the unit commitment problem.
4.	C410.4	Develop block diagram of single area load frequency control and two area load frequency control
5.	C410.5	Generalize reactive power control and compensation for transmission line.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: IV Semester: II	Course: **Energy Management**	Regulation: R19

S.no	Course Outcomes	Description
1.	C411.1	Illustrate the fundamentals of energy management
2.	C411.2	compare the methods of energy production for improved utilization
3.	C411.3	Analyze the different methods of economic analysis
4.	C411.4	Compute energy projects on the bases of economic and financial criteria
5.	C411.5	Outline the principles of thermal engineering to different alternative energy sources and its influence on environment.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: IV Semester: II	Course: **HVAC & DC TRANSMISSION**	Regulation: R19

S.no	Course Outcomes	Description
1.	C412.1	Compare of AC and DC transmission, explain types of HVDC transmission levels and basic concepts.
2.	C412.2	Analyse the ability for determining corona, radio interference, audible noise generation and frequency spectrum for single and three phase transmission lines.
3.	C412.3	Explain the concept of HVDC link control
4.	C412.4	Explain control concept of reactive power control and AC/DC load flow and converter faults protection and harmonic effects.
5.	C412.5	Design reactive power requirements of conventional control, filters and reactive power compensation in AC. side of HVDC system.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: IV Semester: II	Course: **Project-II**	Regulation: R19

S.no	Course Outcomes	Description
1.	C413.1	Observe the skills of Demonstrating the learning achievements in the field of technology and imbibe the knowledge of effective classroom speaking and presentation.
2.	C413.2	Apply knowledge in building their career in particular fields and face any type of interviews, viva-voice, and aptitude tests.
3.	C413.3	Elaborate their communication skills and interactiveness.
4.	C413.4	Rephrase the uses and application of Electrical machines, Power systems and power electronics domains
5.	C413.5	Classify the knowledge about the various principles of Electrical and Electronics with the barriers which effects in a professional set up.

Head of the Department **Principal**

Department of Information Technology

Department : Department of Information Technology				
Academic Year: 2022-23		Year : I Semester : I	Course: English	Regulation: R20
S.no	**Course Outcomes**	**Description**		
1.	C101.1	Apply reading strategies for skimming and scanning and construct paragraphs through mechanics of writing. (K3)		
2.	C101.2	Ask and answer questions through functional English; discuss in groups and develop conversational and communication skills.(K2)		
3.	C101.3	Interpret texts for comprehension; and write letters, E-mails and CV's through principles of written communication.(K3)		
4.	C101.4	Utilize verbal and graphic devices to transfer information; and produce writing for vari**ous purposes.(K3)**		
5.	C101.5	Build sentences using proper grammatical structures and correct word forms; and practice presentations for academic and technical purposes (K3)		

Department : Department of Information Technology				
Academic Year: 2022-23		Year : I Semester : I	Course:Mathematics-1	Regulation: R20
S.no	**Course Outcomes**	**Description**		
1.	C102.1	Determine the convergence of an infinite series and utilize mean value theorems to real life Problems (K3).		
2.	C102.2	Understand, classify and solve analytically a wide range of first order ordinary differential equations along with the applications of differential equations in engineering problems (K2 & K3).		
3.	C102.3	Solve analytically the higher order ordinary differential equations with constant coefficients of various types and apply in their studies (K3).		
4.	C102.4	Apply the knowledge of Mean value theorems, Maxima and Minima of functions of several variables which is useful in optimization (K3).		
5.	C102.5	Apply double integration and triple integration techniques in evaluating areas bounded by curves and volumes of the solids(K3).		

Department : Department of Information Technology			
Academic Year: 2022-23	Year : I Semester : I	Course: Applied Physics	Regulation: R20

S.no	Course Outcomes	Description
1.	C103.1	Explain wave behavior of light, including interference and diffraction mathematically and conceptually.
2.	C103.2	Explain operational principles and construction of Lasers. Understand the properties of optical fiber that affect the performance of a communication system.
3.	C103.3	Apply the knowledge of quantum views for understanding the formation of energy bands in solids and their classifications.
4.	C103.4	Describe relationship between specific properties and applications of dielectric and magnetic materials.
5.	C103.5	Understand the physics of electrical conductivity in semiconductors and superconductors for various applications.

Department : Department of Information Technology			
Academic Year: 2022-23	Year : I Semester : I	Course: Programming for problem solving using C	Regulation: R20

S.no	Course Outcomes	Description
1.	C104.1	**Describe** various types of computer systems, computing environments and discuss about various basic aspects of C programming
2.	C104.2	**Develop** the programs that use two-way/ multi-way selection and loop construct for a givenproblem.
3.	C104.3	**Apply** the structures, union, strings and array operations in a specific need.
4.	C104.4	**Illustrate** about pointers, dynamic memory allocation and know the significance of Pre-processor.
5.	C104.5	**Make use of** functions and file Operations for a given applications

Department : Department of Information Technology			
Academic Year: 2022-23	Year : I Semester : I	Course: Computer Engineering Workshop	Regulation: R20

S.no	Course Outcomes	Description
1.	C105.1	Identify, assemble and update the components of a computer configure, evaluate and select hardware platforms for the implementation.
2.	C105.2	Execution of computer applications, services and systems make use of tools for converting pdf to word and vice versa.
3.	C105.3	Develop presentation, documents and small applications using productivity tools such as word processor, presentation tools, spreadsheets, HTML, Latex.

Department : Department of Information Technology			
Academic Year: 2022-23	Year : I Semester : I	Course: English Language and Communication Skills Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C106.1	Show the knowledge in listening and speaking English sounds and employing English stress and intonation as per the accepted standard (K3)
2.	C106.2	Employ suitable listening and reading skills for improved communication abilities. (K3)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : I Semester : I	Course: Applied Physics Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C107.1	Evaluate the process and outcomes of an experiment quantitatively and qualitatively
2.	C107.2	Demonstrate the process and outcomes of an experiment
3.	C107.3	Discuss an experiment collaboratively and ethically

Department : Department of Information Technology			
Academic Year: 2022-23	Year : I Semester : I	Course: Programming for Problem Solving Using C Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C108.1	Extend the knowledge for C programming development for basic applications
2.	C108.2	Examine the control flow and Selection and Iterative Statements
3.	C108.3	Utilize the concepts of C arrays and strings for program development
4.	C108.4	Construct C programs using structures, unions, pointers and memory allocation functions
5.	C108.5	Practice the Modular Programming Skills to solve complex problems and also interpret the operations on files

Department : Department of Information Technology			
Academic Year: 2022-23	Year : I Semester : II	Course: Mathematics – II	Regulation: R20

S.no	Course Outcomes	Description
1.	C109.1	Solve system of linear algebraic equations using matrices**(K3)**
2.	C109.2	Make use of matrix algebra techniques that is needed by engineers for practical applications**(K3)**
3.	C109.3	Compute the approximate roots of polynomial and transcendental equations using different algorithms**(K3)**
4.	C109.4	Apply Newton's forward & backward interpolation and Lagrange's formulae for equal and unequal intervals**(K3)**
5.	C109.5	Apply different algorithms for approximating the solutions of ordinary differential equations**(K3)**

Department : Department of Information Technology			
Academic Year: 2022-23	Year : I Semester : II	Course: Applied Chemistry	Regulation: R20

S.no	Course Outcomes	Description
1.	C110.1	Distinguish various forms of polymers and Illustrate different methods forming plastic materials
2.	C110.2	Develop various energy storing devices and Apply different techniques to prevent corrosion
3.	C110.3	Utilize disparate advanced materials
4.	C110.4	Choose different analytical instruments in identifying various organic compounds and Develop diverse renewable energy sources
5.	C110.5	Identify diverse molecular machines and computational chemistry methods

Department : Department of Information Technology			
Academic Year: 2022-23	Year : I Semester : II	Course: Computer Organization	Regulation: R20

S.no	Course Outcomes	Description
1.	C110.1	Relate and manipulate representations of numbers stored in digital computers.
2.	C110.2	Analyze various combinational and sequential circuits.
3.	C110.3	Demonstrate different instruction types.
4.	C110.4	Calculate the effective address of an operand by addressing Modes.
5.	C110.5	Recall the internal organisation of Computers, CPU, Memory Units and Input/Outputs and the relations between its main components.

Department : Department of Information Technology			
Academic Year: 2022-23	Year : I Semester : II	Course: Python Programming	Regulation: R20

S.no	Course Outcomes	Description
1.	C112.1	Discuss the basic essential programming skills of Python Programming(K2)
2.	C112.2	Applythe knowledge of problem-solving skills on strings and its methods(K3)
3.	C112.3	Solve coding tasks related to data structures in pythonand build the functions, modules, and packages(K3)
4.	C112.4	Demonstrate the file operations and features of object – oriented programming in python (K3)
5.	C112.5	Develop GUI applications in Python and list types of exceptions(K3)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : I Semester : II	Course: Data Structures	Regulation: R20

S.no	Course Outcomes	Description
1.	C113.1	Demonstrate the behavior of Data Structures, Abstract, Data types, Searching, Sorting and determine the complexity analysis (K3)
2.	C113.2	Apply the concept of various linked lists and examine the advantages and disadvantages (K3)
3.	C113.3	Examine the concepts of queues and Stacks along with their operations (K3)
4.	C113.4	Investigate the usage of stacks (K3)
5.	C113.5	Simulate the hierarchal data structures called trees (K3)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : I Semester : II	Course: Applied Chemistry Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C114.1	Calculate the amount of solute in the given sample solutions using classical titration methods (Expt. No. 1,2,3,4,5,16)
2.	C114.2	Examine the nature and concentration of substances present in real life samples (Expt. No. 6,12,13,14,15, 17)
3.	C114.3	Make use of various instruments to calculate the strength of the given samples (Expt. No. 7,8,9,10,11)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : I Semester : II	Course: Python Programming Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C115.1	**Develop** python programs using control flow statements.
2.	C115.2	**Examine** the proficiency in handling of strings and Lists.
3.	C115.3	**Develop** programs using data structures like dictionaries, tuples and sets using built-in functions, modules and packages
4.	C115.4	**Develop** programs using the file operations and features of object-oriented programming in python
5.	C115.5	**Develop** GUI applications in Python and list types of exceptions

Department : Department of Information Technology			
Academic Year: 2022-23	Year : I Semester : II	Course: Data Structures Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C116.1	Demonstrate the various Object Oriented Programming concepts such as Constructors, Destructors, Functions and Operators(**K3)**
2.	C116.2	To Practice Inheritance, Templates and Exception Handling (**K3**)
3.	C116.3	Experiment with the Single Linked List operations such as Insertion, Deletion, Searching and Sorting(**K3**)
4.	C116.4	Discriminate between Stack and Queue Linear Data Structures (**K4**).
5.	C116.5	To Analyze the hierarchical Data Structures like Binary Search Trees for solving the real-time problems (**K4**).

Department : Department of Information Technology			
Academic Year: 2022-23	Year : I Semester : II	Course: Environment Science	Regulation: R20

S.no	Course Outcomes	Description
1.	C117.1	Identify the basic concepts of Eco-system and its function in the Environment.
2.	C117.2	List the natural resources and their importance for the sustenance of life and learn to conserve the natural resources.
3.	C117.3	Apply conservation practices to protect the Bio-diversity.
4.	C117.4	Illustrate the control of pollution with waste management practices.
5.	C117.5	State Environmental legislations of India and the first global initiatives towards sustainable development.

Department : Department of Information Technology			
Academic Year: 2022-23	Year : II Semester : I	Course: Mathematics – III	Regulation: R20

S.no	Course Outcomes	Description
1.	C201.1	Apply the Concepts of Vector Differentiation and Vector Integration in Applications of Engineering field
2.	C201.2	Determine Laplace Transform and inverse Laplace Transforms of various functions and solve the linear ODE.
3.	C201.3	Compute the Fourier series of periodic signals, apply integral expressions for the forwards and inverse Fourier transform to a range of non-periodic waveforms .
4.	C201.4	Identify and solve different types of linear and nonlinear first order partial differential equations.
5.	C201.5	Solve distinct cases of higher order partial differential equations and use to solve engineering problems.

Department : Department of Information Technology			
Academic Year: 2022-23	Year : II Semester : I	Course: Object Oriented Programming Through C++	Regulation: R20

S.no	Course Outcomes	Description
1.	C202.1	Classify object oriented programming and procedural programming and outline the key concepts of OOP (K2)
2.	C202.2	Make use of C++ Programming constructs and classes, objects, function overloading and constructors (K3)
3.	C202.3	Develop Object Oriented Programming using operator overloading, type conversion and Simplify the code using inheritance with code reusability (K3)
4.	C202.4	Experiment with the pointer concepts, polymorphism and virtual functions (K3)
5.	C202.5	Utilize templates for generic programming and Examine the raised exceptions using exception handling and Outline the STL programming model, Make Use of the various containers and associated algorithms (K3)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : II Semester : I	Course: Operating Systems	Regulation: R20

S.no	Course Outcomes	Description
1.	C203.1	Illustarte the different types of system calls and its services that are implemented in various operating systems. (K2)
2.	C203.2	Experiment with different scheduling algorithm and synchronization mechanism for various processes that are created within the system. (K3)
3.	C203.3	Examine various memory management techniques to improve the efficiency of CPU utilization. (K4)
4.	C203.4	Experiment with the deadlock prevention and avoidance algorithms to overcome synchronization problem in operating systems. (K4)
5.	C203.5	Deduce the basic concepts of file management system and the way these files are stored in the memory using disk scheduling techniques. (K4)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : II Semester : I	Course: Database Management Systems	Regulation: R20

S.no	Course Outcomes	Description
1.	C204.1	Describe a relational database and object-oriented database
2.	C204.2	Create, maintain and manipulate a relational database using SQL
3.	C204.3	Describe ER model and normalization for database design
4.	C204.4	Examine issues in data storage and query processing and can formulate appropriate solutions
5.	C204.5	Outline the role and issues in management of data such as efficiency, privacy, security, ethical responsibility, and strategic advantage

Department : Department of Information Technology			
Academic Year: 2022-23	Year : II Semester : I	Course: Discrete Mathematics and Graph Theory	Regulation: R20

S.no	Course Outcomes	Description
1.	C205.1	Apply principles of mathematical logic to statement calculus and Predicate calculus(K3)
2.	C205.2	Discuss various types of relations , functions ,Lattice and algebraic structures(K2)
3.	C205.3	Use counting techniques to solve combinatorial problems(K3)
4.	C205.4	Solve the recurrence relations by Method of substitution ,characteristic roots, Generating functions(K3)
5.	C205.5	Able to model and solve the real world problems using Graph theory

Department : Department of Information Technology			
Academic Year: 2022-23	Year : II Semester : I	Course: Object Oriented Programming Through C++ Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C206.1	Explain g++ compiler and translate basic c programs into C++ programs
2.	C206.2	Develop programs using different operators like scope access, new, delete and utilize different function concepts like inline, friend, function overloading and operator overloading
3.	C206.3	Construct programs on classes,objects,constructors and Make use of access specifiers in classes
4.	C206.4	Utilize inheritance and polymorphism features to implement code reusability
5.	C206.5	"Apply exception handling concepts to handle runtime errors and Make use of templates ,STL concepts to implement generic programming"

Department : Department of Information Technology			
Academic Year: 2022-23	Year : II Semester : I	Course: Operating Systems Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C207.1	To use Unix utilities and perform basic shell control of the utilities(K2)
2.	C207.2	To use the Unix file system and file access control(K2)
3.	C207.3	To use of an operating system to develop software(K2)
4.	C207.4	Students will be able to use Linux environment efficiently(K2)
5.	C207.5	Solve problems using bash for shell scripting(K3)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : II Semester : I	Course: Database Management Systems Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C208.1	Utilize SQL to execute queries for creating database and performing data manipulation operations
2.	C208.2	Apply Queries using Advanced Concepts of SQL
3.	C208.3	Examine integrity constraints to build efficient databases
4.	C208.4	Build PL/SQL programs including stored procedures, functions, cursors and triggers
5.	C208.5	Build Queries Using SQL SERVER and other Databases(K3)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : II Semester : I	Course: Skill oriented Course – I 1) Animations – 2D Animation 2) Distributed Technologies – NoSQL	Regulation: R20

S.no	Course Outcomes	Description
1.	C209.1	Learn various tools of digital 2-D animation. (K3)
2.	C209.2	Understand production pipeline to create 2-D animation
3.	C209.3	Analyze special effects in animation to bring interest and awe in the scenes and backgrounds.
4.	C209.4	Apply the tools to create 2D animation for films and videos
5.	C209.5	Apply various operations on server less database SQLite.

Department : Department of Information Technology			
Academic Year: 2022-23	Year : II Semester : I	Course: Constitution of India	Regulation: R20

S.no	Course Outcomes	Description
1.	C210.1	Discuss Fundamental Rights and Duties, Directive Principles of State Policy. (k2)
2.	C210.2	Explain the The Supreme Court and High Court: Powers andFunctions;
3.	C210.3	Illustrate State Government and its Administration Governor - Role and Position
4.	C210.4	Describe District's Administration Head - Role and Importance(k2)
5.	C210.5	Generalize Election Commission- Role (k2)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : II Semester : II	Course: Statistics with R	Regulation: R20

S.no	Course Outcomes	Description
1.	C211.1	Explain the need for learning a programming language for analyzing the statistical data (U)
2.	C211.2	Use online resources for R and import new packages into the R workspace (A)
3.	C211.3	Import, review, manipulate and summarize data-sets in R (A)
4.	C211.4	Analyze statistical tests using R, create, edit visualizations and integrate the graphs into statistical analysis (AN)
5.	C211.5	Practice various math and statistical functions in R (A)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : II Semester : II	Course: Principles of Software Engineering	Regulation: R20

S.no	Course Outcomes	Description
1.	C212.1	Discuss software engineering principles and techniques (K2)
2.	C212.2	Outline efficient, reliable, robust and cost-effective software solutions (K2)
3.	C212.3	Transform an Object-Oriented Design into high quality, executable code
4.	C212.4	Compare conventional and agile software methods (K2)
5.	C212.5	Show Skills to design, implement, and execute test cases at the Unit and Integration level

Department : Department of Information Technology			
Academic Year: 2022-23	Year : II Semester : II	Course: Automata Theory and Compiler Design	Regulation: R20

S.no	Course Outcomes	Description
1.	C213.1	Outline the fundamental concepts in automata theory and formal languages. Explain context-free grammars, properties of languages, grammars and automata with rigorously formal mathematical method
2.	C213.2	Illustrate the fundamental of language translator and compiler design. Design algorithm for parser
3.	C213.3	Illustrate the fundamentals of Semantic Analysis and context Sensitive features
4.	C213.4	Demonstrate code optimization technique and fundamental of runtime environment. Illustrate the concept of storage management.
5.	C213.5	Explain the concept of intermediate code generation technique. Write a program for the execution of DAG to generate the code.

Department : Department of Information Technology			
Academic Year: 2022-23	Year : II Semester : II	Course: Java Programming	Regulation: R20

S.no	Course Outcomes	Description
1.	C214.1	Summarize the concept of Object Oriented Programming & Java Programming.
2.	C214.2	Describe the basic concepts of Java such as operators, classes, objects, inheritance, packages, Enumeration and various keywords. (K2)
3.	C214.3	Apply the concepts of Arrays, Inheritance and interfaces.
4.	C214.4	Apply the concepts of Packages and Exception handling techniques.
5.	C214.5	Demonstrate the concepts of String handling, Multi threading and JDBC.

Department : Department of Information Technology			
Academic Year: 2022-23	Year : II Semester : II	Course: Managerial Economics and Financial Accountancy	Regulation: R20

S.no	Course Outcomes	Description
1.	C215.1	Demonstrate managerial economics & elasticity of demand(K2)
2.	C215.2	Generalize production function and cost concepts(K2)
3.	C215.3	Explain market structures and industrial organizations (K2)
4.	C215.4	Determine financial performance of a company(K3)
5.	C215.5	Apply capital budgeting techniques in Investment proposals(K3)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : II Semester : II	Course: UML Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C216.1	Know the syntax of different UML diagrams(K2)
2.	C216.2	Create use case documents that capture requirements for a software system(K3)
3.	C216.3	Create class diagrams that model both the domain model and design model of a software system(K3)
4.	C216.4	Create interaction diagrams that model the dynamic aspects of a software system(K3)
5.	C216.5	Write code that builds a software system(K3,Develop simple applications(K3)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : II Semester : II	Course: FOSS Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C217.1	Experiment with linux commands to get acquainted with LINUX environment.
2.	C217.2	Apply the appropriate UNIX commands to write a shell program.
3.	C217.3	Devise application based Shell scripts .
4.	C217.4	Simulate Linux Utilities using Kernel routines.

Department : Department of Information Technology			
Academic Year: 2022-23	Year : II Semester : II	Course: Java Programming Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C218.1	Evaluate default values of all primitive data type, operations, expression, control flow and Strings.(K3)
2.	C218.2	Determine class, objects, methods, inheritance, Exception, Runtime polymorphism,
3.	C218.3	Illustrating simple inheritance, multi-level inheritance, Exception handling mechanism (K3)
4.	C218.4	Construct Threads, Event Handling, implement packages, developing applets.(K3)
5.	C218.5	User defined exception handling mechanism.(K3)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : II Semester : II	Course: Skill oriented Course – II 1) Animations – 3D Animation 2) Distributed Technologies – MongoDB	Regulation: R20

S.no	Course Outcomes	Description
1.	C219.1	Install, configure and setup the drivers to use MongoDB with your programming language of choice (K2)
2.	C219.2	Gain an in-depth understanding of main features of MongoDB and their use cases (K2)
3.	C219.3	Retrieve data in the database using advanced querying (K3)
4.	C219.4	Build new types of applications for mobile, cloud, e-commerce and and social technologies (K3)
5.	C219.5	To apply tools to create effective 3D modelling texturing and lighting

Department : Department of Information Technology			
Academic Year: 2022-23	Year : III Semester : I	Course: CNS	Regulation: R20

S.no	Course Outcomes	Description
1.	C301.1	Enumerate the layers of the OSI Model and TCP/IP (K3).
2.	C301.2	Classify different multiplexing techniques and switching networks (K3).
3.	C301.3	Illustrate various models and examples of a network (K3).
4.	C301.4	Demonstrate various protocols with their operations in the network (K3).
5.	C301.5	Outline various protocols supported by Application layer (K3).

Department : Department of Information Technology			
Academic Year: 2022-23	Year : III Semester : I	Course: **DAA**	Regulation: R20

S.no	Course Outcomes	Description
1.	C302.1	Estimate running times of algorithms by using asymptotic notations.
2.	C302.2	Demonstrate searching and sorting methods using divide-and-conquer paradigm.
3.	C302.3	Solve job sequencing, knapsack and spanning tree problems using greedy paradigm
4.	C302.4	Discover solutions for matrix chain multiplication, OBST and travelling sales person's problems using dynamic programming paradigm.
5.	C302.5	Demonstrate n-queen, graph coloring and Hamiltonian cycles applications using back tracking approach.

Department : Department of Information Technology			
Academic Year: 2022-23	Year : III Semester : I	Course: Data Mining Techniques.	Regulation: R20

S.no	Course Outcomes	Description
1.	C303.1	Outline the need for data mining (U – K2)
2.	C303.2	Build the data using preprocessing techniques for effective data mining (P – K3)
3.	C303.3	Teach different classification techniques (P – K3)
4.	C303.4	Discuss the process of generating association rules (P – K3)
5.	C303.5	Explain different clustering algorithms(P – K3)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : III Semester : I	Course: **RES**	Regulation: R20

S.no	Course Outcomes	Description
1.	C304.1	To study the solar radiation data, equivalent circuit of PV cell and its I-V &P-V Characteristics
2.	C304.2	To understand the concept of Wind Energy Conversion and its applications.
3.	C304.3	To study the principles of biomass and geothermal energy
4.	C304.4	To study the principles of Ocean Thermal Energy Conversion ,motion of waves and power
5.	C304.5	To study the various chemical energy sources such as fuell cell and hydrogen energy.

Department : Department of Information Technology			
Academic Year: 2022-23	Year : III Semester : I	Course: **Artificial Intelligence**	Regulation: R20

S.no	Course Outcomes	Description
1.	C305.1	Describe in detail about artificial intelligence and its history, applications in current trends(K2)
2.	C305.2	Identify about application og search strategy and problem deduction(K2)
3.	C305.3	Define the identify the mathematical logic concepts(K2)
4.	C305.4	Describe the knowledge representation in artifical intelligence(K2)

5.	C305.5	Explain and indentify the fuzzy logic expert system and its applications in artificial intelligence(K2)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : III Semester : I	Course: **Data Mining Techniques Lab**	Regulation: R20

S.no	Course Outcomes	Description
1.	C306.1	Extend the functionality of R by using add-on packages Extract data from files and
2.	C306.2	Other sources and perform various data manipulation tasks on them
3.	C306.3	Use R Graphics and Tables to visualize results of various statistical operations on data
4.	C306.4	Apply the knowledge of R gained to data Analytics for real life applications.

Department : Department of Information Technology			
Academic Year: 2022-23	Year : III Semester : I	Course: Computer Networks Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C307.1	Know how reliable data communication is achieved through data link layer(K3).
2.	C307.2	Suggest appropriate routing algorithm for the network (K3).
3.	C307.3	Provide internet connection to the system and its installation (K3).
4.	C307.4	Work on various network management tools (K3).

Department : Department of Information Technology			
Academic Year: 2022-23	Year : III Semester : I	Course: SOC	Regulation: R20

S.no	Course Outcomes	Description
1.	C308.1	Learn various tools of digital 2-D animation (K2)
2.	C308.2	Understand production pipeline to create 2-D animation. (K2)
3.	C308.3	Apply the tools to create 2D animation for films and videos(K3)
4.	C308.4	Understand different styles and treatment of content in 3D model creation (K2)
5.	C308.5	Apply tools to create effective 3D modeling texturing and lighting (K3)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : III Semester : I	Course: **Internship**	Regulation: R20

S.no	Course Outcomes	Description
1.	C309.1	Construct the company profile by compiling the brief history, management structure, products / services offered, key achievements and market performance for his / her organization of internship.
2.	C309.2	Assess its Strengths, Weaknesses, Opportunities and Threats (SWOT).
3.	C309.3	Determine the challenges and future potential for his / her internship organization in particular and the sector in general.
4.	C309.4	Test the theoretical learning in practical situations by accomplishing the tasks assigned during the internship period.
5.	C309.5	Apply various soft skills such as time management, positive attitude and communication skills during performance of the tasks assigned in internship organization.
6.	C309.6	Analyze the functioning of internship organization and recommend changes for improvement in processes.

Department : Department of Information Technology			
Academic Year: 2022-23	Year : III Semester : I	Course: CSP	Regulation: R20

S.no	Course Outcomes	Description
1.	310.1	Survey to identify the problems in their society surroundings (K2)
2.	310.2	Design a solution/Blueprint for the problem identified (K3)
3.	310.3	Implement a technical solution for the problems indentified (K3)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : III Semester : II	Course: ML	Regulation: R20

S.no	Course Outcomes	Description
1.	C311.1	Explain the fundamental usage of the concept Machine Learning system (K2)
2.	C311.2	Demonstrate on various regression Technique (K3)
3.	C311.3	Analyze the Ensemble Learning Methods (K4)
4.	C311.4	Illustrate the Clustering Techniques and Dimensionality Reduction Models in Machine Learning(K3)
5.	C311.5	Discuss the Neural Network Models and Fundamentals concepts of Deep Learning(K2)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : III Semester : II	Course: **BDA**	Regulation: R20

S.no	Course Outcomes	Description
1.	C312.1	Illustrate big data challenges in different domains including social media(K3)
2.	C312.2	Identify various techniques for mining data stream(K2)
3.	C312.3	Discuss and design and develop Hadoop(K2)
4.	C312.4	Identify the characteristics of datasets and compare the trivial data and big data (K2)
5.	C312.5	Define the various search methods and visualization techniques (K2

Department : Department of Information Technology			
Academic Year: 2022-23	Year : III Semester : II	Course: CNS	Regulation: R20

S.no	Course Outcomes	Description
1.	C313.1	Explain different security threats and countermeasures and foundation course of cryptography mathematics (K2).
2.	C313.2	Classify the basic principles of symmetric key algorithms and operations of some symmetric key algorithms and asymmetric key cryptography (K2).
3.	C313.3	Revise the basic principles of Public key algorithms and Working operations of some Asymmetric key algorithms such as RSA, ECC and some more(K2)
4.	C313.4	Design applications of hash algorithms, digital signatures and key management techniques(K3)
5.	C313.5	Determine the knowledge of Application layer, Transport layer and Network layer security Protocols such as PGP, S/MIME, SSL, TSL, and IPsec (K2).

Department : Department of Information Technology			
Academic Year: 2022-23	Year : III Semester : II	Course: Mean Stack Development.	Regulation: R20

S.no	Course Outcomes	Description
1.	C314.1	Develop professional web pages of an application using HTML elements like lists, navigations, tables, various form elements, embedded media which includes images, audio, video and CSS Styles.
2.	C314.2	Utilize JavaScript for developing interactive HTML web pages and validate form data.
3.	C314.3	Build a basic web server using Node.js and also working with Node Package Manager (NPM).
4.	C314.4	Build a web server using Express.js

5.	C314.5	Make use of Typescript to optimize JavaScript code by using the concept of strict type checking.

Department : Department of Information Technology			
Academic Year: 2022-23	Year : III Semester : II	Course: **FMM**	Regulation: R20

S.no	Course Outcomes	Description
1.	C315.1	Explain the architecture of processors(8085,8086) and their operations.(k2)
2.	C315.2	Write programming in assembly language for processors and controllers(k3)
3.	C315.3	Analyze various interfacing techniques (k4)
4.	C315.4	Explain the architecture of 8051 microcontroller and their operation(k2)
5.	C315.5	Demonstrate programming to control different applications(k3)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : III Semester : II	Course: **BDA LAB**	Regulation: R20

S.no	Course Outcomes	Description
1.	C316.1	Implement the following Data structures in Java (K3)
2.	C316.2	Perform setting up and Installing Hadoop in its three operating modes(K4)
3.	C316.3	Implement the following file management tasks in Hadoop. (K3)
4.	C316.4	Implement Friends-of-friends algorithm in Map Reduce.(K3)
5.	C316.5	Implement an iterative Page Rank graph algorithm in Map Reduce(K3)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : III Semester : II	Course: **ML with Python Lab**	Regulation: R20

S.no	Course Outcomes	Description
1.	C317.1	Implement procedures for the machine learning algorithms(K3)
2.	C317.2	Design and Develop Python programs for various Learning algorithms(K3)
3.	C317.3	Apply appropriate data sets to the Machine Learning algorithms (K3)
4.	C317.4	Develop Machine Learning algorithms to solve real world problems(K3)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : III Semester : II	Course: CNS Lab	Regulation: R20

S.no	Course Outcomes	Description
1.	C318.1	Apply the knowledge of symmetric cryptography to implement encryption and decryption using Ceaser Cipher, Substitution Cipher, Hill Cipher (K3)
2.	C318.2	Demonstrate the different algorithms like DES, BlowFish, and Rijndael, encrypt the text "Hello world" using Blowfish Algorithm(K3)
3.	C318.3	Analyze and implement public key algorithms like RSA, Diffie-Hellman Key Exchange mechanism, the message digest of a text using the SHA-1 algorithm(K3)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : III Semester : II	Course: **NPL**	Regulation: R20

S.no	Course Outcomes	Description
1.	C319.1	Discover natural language processing (NLP) libraries in Python.
2.	C319.2	Employ various techniques for implementing NLP including parsing and tex Processing.
3.	C319.3	Analyze how to use NLP for text feature engineering.

Department : Department of Information Technology			
Academic Year: 2022-23	Year : IV Semester : I	Course: CNS	Regulation: R19

S.no	Course Outcomes	Description
1.	C401.1	Describe the solutions for various security threats, attacks and hacking and learn the fundamentals of number theory
2.	C401.2	Summarize the strengths and weakness of various symmetric algorithms
3.	C401.3	Classify the concepts of Number theory in asymmetric encryption algorithms
4.	C401.4	Illustrate various authentication methods in real world scenario
5.	C401.5	Discuss user authentication in Transport layer security and email security

Department : Department of Information Technology			
Academic Year: 2022-23	Year : IV Semester : I	Course: **ML**	Regulation: R19

S.no	Course Outcomes	Description
1.	C402.1	Identify machine learning techniques suitable for a given problem
2.	C402.2	Solve the problems using various machine learning techniques
3.	C402.3	Apply Dimensionality reduction techniques
4.	C402.4	Discuss the Neural Network Models and Fundamentals concepts of Deep Learning
5.	C402.5	Design applications using ML Techniques

Department : Department of Information Technology			
Academic Year: 2022-23	Year : IV Semester : I	Course: **ACN**	Regulation: R19

S.no	Course Outcomes	Description
1.	C403.1	Identify the layers of the OSI Model and TCP/IP(K2)
2.	C403.2	Identify the routing algorithms for finding shortest path(K2)
3.	C403.3	Discuss about various versions of internet protocol and its services and addressing(K3)
4.	C403.4	Demonstrate about SCTP services, features, and different types of formatting in networks(K3)
5.	C403.5	Discuss about the WWW, HTTP, & FTP services, applications in detail.(K3)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : IV Semester : I	Course: **MEFA**	Regulation: R19

S.no	Course Outcomes	Description
1.	C404.1	Demonstrate managerial economics and elasticity of demand .(K2)
2.	C404.2	Generalize production function and cost concepts.(K2)
3.	C404.3	Explain market structures and industrial Organizations. (K2)
4.	C404.4	Determine Financial Performance of a Company. (K3)
5.	C404.5	Apply Capital Budgeting techniques in investment proposals. (K3)

Department : Department of Information Technology			
Academic Year: 2022-23	Year : IV Semester : I	Course: CC	Regulation: R19

S.no	Course Outcomes	Description
1.	C405.1	Interpret the key dimensions of the challenge of Cloud Computing
2.	C405.2	Examine the economics, financial, and technological implications for selecting cloud computing for own organization
3.	C405.3	Assessing the financial, technological, and organizational capacity of employer's for actively initiating and installing cloud-based applications
4.	C405.4	Evaluate own organizations' needs for capacity building and training in cloud computing-related IT areas
5.	C405.5	Illustrate Virtualization for Data-Center Automation

Department : Department of Information Technology			
Academic Year: 2022-23	Year : IV Semester : I	Course: IoT	Regulation: R19

S.no	Course Outcomes	Description
1.	C406.1	Express the basic concepts and different levels of IoT.
2.	C406.2	Discuss the basic protocols that are used in IoT and M2M.
3.	C406.3	Apply the IoT Design Methodologies on various IoT applications using the concepts of python.
4.	C406.4	Experiment with different cloud storage models and communication APIs.
5.	C406.5	Examine the role of big data and data analytics in typical IoT systems.

Department : Department of Information Technology				
Academic Year: 2022-23		Year : IV Semester : I	Course: **UML Lab**	Regulation: R19
S.no	**Course Outcomes**	**Description**		
1.	C407.1	Know the syntax of different UML diagrams		
2.	C407.2	Create use case documents that capture requirements for a software system		
3.	C407.3	Create interaction diagrams that model the dynamic aspects of a software system		
4.	C407.4	Write code that builds a software system		
5.	C407.5	Develop simple applications		

Department : Department of Information Technology				
Academic Year: 2022-23		Year : IV Semester : II	Course: **Project - 1**	Regulation: R19
S.no	**Course Outcomes**	**Description**		
1.	C408.1	Identify the problem statement in the latest Technologies. (K2)		
2.	C408.2	Understand the literature survey for solution of the problems (K3)		
3.	C408.3	Write an abstract to solve the problem identified (K3)		

Department : Department of Information Technology				
Academic Year: 2022-23		Year : IV Semester : II	Course: MOB	Regulation: R19
S.no	**Course Outcomes**	**Description**		
1.	C409.1	Describe functions and Importance of Management theories (k2)		
2.	C409.2	Explain Organization Structures and Effective Controlling Techniques (k2)		
3.	C409.3	Discuss Organizational Behavior and perceptual learning process(k2)		
4.	C409.4	Determine theories of Motivation and Collaborative process in work groups(k3)		
5.	C409.5	Discuss Problem Solving techniques in Organizational Conflict (k2)		
6.	C409.6	Explain Organizational change in creating an Ethical Organization (k3)		

Department : Department of Information Technology			
Academic Year: 2022-23	Year : IV Semester : II	Course: Entrepreneurship	Regulation: R19

S.no	Course Outcomes	Description
1.	C410.1	
2.	C410.2	
3.	C410.3	
4.	C410.4	
5.	C410.5	
6.	C410.6	

Department : Department of Information Technology			
Academic Year: 2022-23	Year : IV Semester : II	Course: SPM	Regulation: R19

S.no	Course Outcomes	Description
1.	C411.1	Relate organizational needs to the most effective software development model.
2.	C411.2	Summarize the basic concepts and issues of software project management.
3.	C411.3	Develop planning the software projects.
4.	C411.4	Build project plans that address real – world management challenges.
5.	C411.5	Develop the skills for tracking and controlling software deliverables.

Department : Department of Information Technology			
Academic Year: 2021-22	Year : IV Semester : II	Course: **Project-2**	Regulation: R16

S.no	**Course Outcomes**	**Description**
1.	C412.1	CO1: Design/blueprint the solution for the problem identified. (K2)
2.	C412.2	CO2: Implement the design using some programming code (K3)
3.	C412.3	C O3: Test the results under different testing methods (K3)

Head of the Department **Principal**

DEPARTMENT OF MECHANICAL ENGINEERING

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : I Semester: I	Course: Calculus & Differential Equations-M-I	Regulation:R-20

S.no	Course Outcomes	Description
1.	C101.1	Determine the convergence of an infinite series and utilize mean value theorems to real life Problems **(K3).**
2.	C101.2	Understand, classify and solve analytically a wide range of first order ordinary differential equations along with the applications of differential equations in engineering problems **(K2 & K3).**
3.	C101.3	Solve analytically the higher order ordinary differential equations with constant coefficients of various types and apply in their studies **(K3).**
4.	C101.4	Apply the knowledge of Mean value theorems, Maxima and Minima of functions of several variables which is useful in optimization **(K3).**
5.	C101.5	Apply double integration and triple integration techniques in evaluating areas bounded by curves and volumes of the solids **(K3).**

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : I Semester: I	Course: Engineering Physics	Regulation:R-20

S.no	Course Outcomes	Description
1.	C102.1	Explain wave behavior of light, including interference and diffraction mathematically and conceptually.
2.	C102.2	Explain operational principles and construction of Lasers Understand the properties of optical fiber that affect the performance of a communication system.
3.	C102.3	Describe relationship between specific properties and applications of dielectric and magnetic materials. Apply the knowledge of quantum views for understanding the formation of energy bands in solids and their classifications.
4.	C102.4	Describe relationship between specific properties and applications of dielectric and magnetic materials.
5.	C102.5	Understand the physics of electrical conductivity in semiconductors and superconductors for various applications.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : I Semester: I	Course: Programming for Problem Solving Using C	Regulation:R-20

S.no	Course Outcomes	Description
1.	C103.1	**Describe** various types of computer systems, computing environments and discuss about various basic aspects of C programming
2.	C103.2	**Develop** the programs that use two-way/ multi-way selection and loop construct for a givenproblem.
3.	C103.3	**Apply** the structures, union, strings and array operations in a specific need.
4.	C103.4	**Illustrate** about pointers, dynamic memory allocation and know the significance of Pre-processor.
5.	C103.5	**Make use of** functions and file Operations for a given applications

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : I Semester: I	Course: English	Regulation:R-20

S.no	Course Outcomes	Description
1.	C104.1	Apply reading strategies for skimming and scanning and construct paragraphs through mechanics of writing. (K3)
2.	C104.2	Ask and answer questions through functional English; discuss in groups and develop conversational and communication skills.(K2)
3.	C104.3	Interpret texts for comprehension; and write letters, E-mails and CV's through principles of written communication.(K3)
4.	C104.4	Utilize verbal and graphic devices to transfer information; and produce writing for various purposes.(K3)
5.	C104.5	Build sentences using proper grammatical structures and correct word forms; and practice presentations for academic and technical purposes (K3)

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : I Semester: I	Course: Engineering Drawing	Regulation:R-20

SNo	Course Outcomes	Description
1.	C105.1	Identify the use of various drawing instruments and to construct various types of polygons, curves and scales.
2.	C105.2	Represent the projections of points, lines and line inclined to both the planes and its traces.
3.	C105.3	Sketch the projections of various types of plane surfaces in different positions with respect to reference planes.
4.	C105.4	Develop the projections of various types of solids in different positions with respect to reference planes.
5.	C105.5	Construct the 3D objects in 2D planes and vice versa and make use of Auto Cad to create the 2D and 3D objects.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : I Semester: I	Course: Engineering Physics Lab	Regulation:R-20

S.no	Course Outcomes	Description
1.	C106.1	Evaluate the process and outcomes of an experiment quantitatively and qualitatively
2.	C106.2	Demonstrate the process and outcomes of an experiment
3.	C106.3	Discuss an experiment collaboratively and ethically

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : I Semester: I	Course: Programming for Problem Solving Using C Lab	Regulation:R-20

S.no	Course Outcomes	Description
1.	C107.1	Extend the knowledge for C programming development for basic applications
2.	C107.2	Examine the control flow and Selection and Iterative Statements
3.	C107.3	Utilize the concepts of C arrays and strings for program development
4.	C107.4	Construct C programs using structures, unions, pointers and memory allocation functions
5.	C107.5	Practice the Modular Programming Skills to solve complex problems and also interpret the operations on files

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : I Semester: I	Course: English Language Lab	Regulation:R-20

S.no	Course Outcomes	Description
1.	C108.1	Show the knowledge in listening and speaking English sounds and employing English stress and intonation as per the accepted standard (K3)
2.	C108.2	Employ suitable listening and reading skills for improved communication abilities. (K3)

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : I Semester: I	Course: Environmental Science	Regulation: R-20

S.no	Course Outcomes	Description
1.	C109.1	Identify the basic concepts of Eco-system and its function in the Environment.
2.	C109.2	List the natural resources and their importance for the sustenance of life and learn to conserve the natural resources.
3.	C109.3	Apply conservation practices to protect the Bio-diversity.
4.	C109.4	Illustrate the control of pollution with waste management practices.
5.	C109.5	State Environmental legislations of India and the first global initiatives towards sustainable development.
6.	C109.6	Prepare Environmental Assessment Procedure, the stages involved in EIA and the Environmental audit.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : I Semester: II	Course: Linear Algebra & Numerical Methods -M2	Regulation:R-20

S.no	Course Outcomes	Description
1.	C110.1	Solve system of linear algebraic equations using matrices**(K3)**
2.	C110.2	Make use of matrix algebra techniques that is needed by engineers for practical applications**(K3)**
3.	C110.3	Compute the approximate roots of polynomial and transcendental equations using different algorithms**(K3)**
4.	C110.4	Apply Newton's forward & backward interpolation and Lagrange's formulae for equal and unequal intervals**(K3)**
5.	C110.5	Apply different algorithms for approximating the solutions of ordinary differential equations**(K3)**

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : I Semester: II	Course: Engineering Chemistry	Regulation:R-20

S.no	Course Outcomes	Description
1.	C111.1	Distinguish various forms of polymers and Illustrate different methods forming plastic materials
2.	C111.2	Develop various energy storing devices and Apply different techniques to prevent corrosion
3.	C111.3	Utilize disparate advanced materials
4.	C111.4	Calculate the efficiency of different kinds of industrial fuels
5.	C111.5	Identify the nature of water and suitable treatment methods

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : I Semester: II	Course: Engineering Mechanics	Regulation:R-20

S.no	Course Outcomes	Description
1.	C112.1	**Discuss** about various system of forces and its laws to resolve magnitude of forces, moment under the influence of friction
2.	C112.2	**Apply** the equations of equilibrium on various rigid bodies like rollers, trusses etc., to find reaction forces using free body diagrams.
3.	C112.3	**Analyze** the centroid and centre of gravity of simple and composite sections using method of integration and moment, calculate area and mass moment of inertia of composite sections and solids using parallel axis theorem
4.	C112.4	**Apply** rectilinear and curvilinear equations to solve various problems on kinematics and kinetics.
5.	C112.5	**Apply** the equations of rigid body to solve various parameters such as velocity, displacement and time using work-energy and Impulse momentum equations.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : I Semester: II	Course: Basic Electrical & Electronics Engineering	Regulation:R-20

S.no	Course Outcomes	Description
1.	C113.1	Analyze the various electrical networks
2.	C113.2	Demonstrate the operation of DC generators,3-point starter and conduct the Swinburne's Test
3.	C113.3	Analyze the performance of Single Phase transformer
4.	C113.4	Illustrate the operation of 3-phase alternator and 3-phase induction motors

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : I Semester: II	Course: Workshop Practice Lab	Regulation:R-20

S.no	Course Outcomes	Description
1.	C114.1	Ability to design different prototypes in the carpentry trade such as T-Lap Joint and Dovetail Joint
2.	C114.2	Ability to design different prototypes in the trade of fitting such as Vee fit and Square fit.
3.	C114.3	Ability to make various basic prototypes in the trade of black smithy such as S-hook and round rod to square.
4.	C114.4	Ability to create various basic house wiring circuits such as parallel/series connection of three bulbs and stair case wiring.
5.	C114.5	Ability to make various basic prototypes in the trade of tin smithy such as open scoop and square box without lid.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : I Semester: II	Course: Engineering Chemistry Lab	Regulation:R-20

S.no	Course Outcomes	Description
1.	C115.1	Calculate the amount of solute in the given sample solutions using classical titration methods (Expt. No. 1,2,3,4,5,16)
2.	C115.2	Examine the nature and concentration of substances present in real life samples (Expt. No. 6,12,13,14,15, 17)
3.	C115.3	Make use of various instruments to calculate the strength of the given samples (Expt. No. 7,8,9,10,11)

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : I Semester: II	Course: Basic Electrical & Electronics Engineering Lab	Regulation:R-20

S.no	Course Outcomes	Description
1.	C116.1	Compute the efficiency of dc shunt machine as a motor and generator
2.	C116.2	Analyse the regulation of single-phase transformer
3.	C116.3	Determine the performance characteristics of three phase induction motor
4.	C116.4	Compute the regulation of the alternator by using synchronous impedance method
5.	C116.5	Examine the speed characteristics of Dc Shunt Motor

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : I Semester: II	Course:: Constitution of India	Regulation:R-20

S.no	Course Outcomes	Description
1.	C117.1	Discuss Fundamental Rights and Duties, Directive Principles of State Policy. (k2)
2.	C117.2	Explain the The Supreme Court and High Court: Powers andFunctions;
3.	C117.3	Illustrate State Government and its Administration Governor - Role and Position
4.	C117.4	Describe District's Administration Head - Role and Importance(k2)
5.	C117.5	Generalize Election Commission- Role (k2)

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : II Semester: I	Course: Vector Calculus, Fourier Transforms and PDE (M-III)	Regulation:R-20

S.no	Course Outcomes	Description
1.	C201.1	Apply the Concepts of Vector Differentiation and Vector Integration in Applications of Engineering field
2.	C201.2	Determine Laplace Transform and inverse Laplace Transforms of various functions and solve the linear ODE.
3.	C201.3	Compute the Fourier series of periodic signals, apply integral expressions for the forwards and inverse Fourier transform to a range of non-periodic waveforms .
4.	C201.4	Identify and solve different types of linear and nonlinear first order partial differential equations.
5.	C201.5	Solve distinct cases of higher order partial differential equations and use to solve engineering problems.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : II Semester: I	Course: Mechanics of Solids	Regulation:R-20

S.no	Course Outcomes	Description
1.	C202.1	Solve the problems of stress, strain and elastic modulus of a given material effectively.
2.	C202.2	Illustrate and find the point of contra flexure and draw the SF and BM diagrams for any given loads for a particular beam.
3.	C202.3	Determine the shear stress distribution along a beam of varying cross sections like rectangular, circular, I-section and T-section.
4.	C202.4	Calculate the deflection of various beams under different loads.
5.	C202.5	Estimate the hoop's and longitudinal stresses developed in any thin or thick cylinders.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : II Semester: I	Course: Fluid Mechanics & Hydraulic Machines	Regulation:R-20

S.no	Course Outcomes	Description
1.	C203.1	Discuss working principles and properties of different manometers
2.	C203.2	Apply the concept of continuity equation and fluid kinematics
3.	C203.3	Calculate the equations for momentum and energy equations of boundary layer
4.	C203.4	Calculate the equations of impulse momentum equation for various bodies and Evaluate the working principles of various hydraulic turbines.
5.	C203.5	Identify the importance, function and performance of various types of pumps and Evaluate the performance characteristics of various hydraulic turbines.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : II Semester: I	Course: Production Technology	Regulation:R-20

S.no	Course Outcomes	Description
1.	C204.1	Distinguish different types of patterns and can learn about different materials used for patterns.
2.	C204.2	Analyze the design procedures for casting, riser and can learn different methods of melting
3.	C204.3	Explain classification of conventional welding and their processes along with advanced welding processes and their Applications
4.	C204.4	Examine about different bulk forming processes, forging and rolling.
5.	C204.5	Identify different processes used for sheet metal forming.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : II Semester: I	Course: Kinematics of Machinery	Regulation:R-20

S.no	Course Outcomes	Description
1.	C205.1	Discuss the nature and role of the kinematics of machinery, the mechanisms and machines.
2.	C205.2	Demonstrate the lower pair mechanisms and steering gear mechanisms
3.	C205.3	Calculate the velocity and acceleration of mechanisms
4.	C205.4	Discuss the motion of different types of followers and Belt drives.
5.	C205.5	Classify the gears, tooth profiles, their efficiency and gear train mechanisms

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : II Semester: I	Course: Computer Aided Engineering Drawing Practice	Regulation:R-20

S.no	Course Outcomes	Description
1.	C206.1	Draw the projections of solids
2.	C206.2	Draw the section of solids and developments of solids
3.	C206.3	Interpretation of Perspective views
4.	C206.4	Draw the 2D figures by using computer aided drawing and modeling package
5.	C206.5	Understand the paper-space environment thoroughly.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : II Semester: I	Course: Fluid Mechanics & Hydraulic Machines Lab	Regulation:R-20

S.no	Course Outcomes	Description
1.	C207.1	Understanding basic physics of fluids
2.	C207.2	Gaining Knowledge to calculate and design engineering applications involved in Fluid
3.	C207.3	Understanding of analyzing flow systems in terms of mass, momentum, and energy balance

Department : Mechanical Engineering			
Academic Year: 2022-23	Year : II Semester: I	Course: Production Technology Lab	Regulation:R-20

S.no	Course Outcomes	Description
1.	C208.1	Study of Design and making of pattern and sand testing properties
2.	C208.2	Understand of Mould preparation and gas cutting techniques
3.	C208.3	Study of TIG/MIG Welding and Resistance Spot Welding

Department : Mechanical Engineering			
Academic Year: 2022-23	Year : II Semester: I	Course: Drafting and Modeling Lab	Regulation:R-20

S.no	Course Outcomes	Description
1.	C209.1	Use the modeling software packages for developing 2D real time problems
2.	C209.2	Use the modeling software packages for developing 3D real time problems
3.	C209.3	Use the modeling software packages for assemblage of different parts for real time problems

Department : Mechanical Engineering			
Academic Year: 2022-23	Year : II Semester: I	Course: Essence of Indian Traditional Knowledge	Regulation:R-20

S.no	Course Outcomes	Description
1.	C210.1	Discuss the Indian traditional knowledge(K2)
2.	C210.2	Generalize the Protection of traditional knowledge(K2)
3.	C210.3	Identify various requirements for trditional knowledge (K3)
4.	C210.4	Explain global legal FORA for increasing protection of Indian Traditional Knowledge. (K3)
5.	C210.5	Describe Traditional knowledge in different sectors(K2)

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : II Semester: II	Course: Materials & Metallurgy	Regulation:R-20

S.no	Course Outcomes	Description
1.	C211.1	Solve the problems of stress, strain and elastic modulus of a given material effectively.
2.	C211.2	Illustrate and find the point of contra flexure and draw the SF and BM diagrams for any given loads for a particular beam.
3.	C211.3	Determine the shear stress distribution along a beam of varying cross sections like rectangular, circular, I-section and T-section.
4.	C211.4	Calculate the deflection of various beams under different loads.
5.	C211.5	Estimate the hoop's and longitudinal stresses developed in any thin or thick cylinders.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : II Semester: II	Course: Complex Variables and Statistical Methods	Regulation:R-20

S.no	Course Outcomes	Description
1.	C212.1	Use Cauchy-Riemann equations to find analytic functions, harmonic conjugates and evaluation of integrals over closed contours.
2.	C212.2	Apply the concept of residues to evaluate Improper integrals and Definite integrals involving Trigonometric functions .
3.	C212.3	Use discrete and continuous probability distributions to solve problems.
4.	C212.4	Identify the types of sampling methods for different data samples.
5.	C212.5	Test suitable sample statistical tests in testing hypothesis data.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : II Semester: II	Course: Dynamics of Machinery	Regulation:R-20

S.no	Course Outcomes	Description
1.	C213.1	Students should able to compute frictional losses, torque transmission of mechanical systems
2.	C213.2	Students should able to examine dynamic force analysis of mechanisms and design of flywheel
3.	C213.3	Students should able to Explain stabilization of sea vehicles, air craft's and automobile vehicles. Students should able to explain different types of governors.
4.	C213.4	Students should able to evaluate balancing of rotating and reciprocating masses by using analytical and graphical methods.
5.	C213.5	Students should able to determine the natural frequencies of continuous systems starting from the general equation of displacement.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : II Semester: II	Course: Thermal Engineering – I	Regulation:R-20

S.no	Course Outcomes	Description
1.	C214.1	Solve the problems of stress, strain and elastic modulus of a given material effectively.
2.	C214.2	Illustrate and find the point of contra flexure and draw the SF and BM diagrams for any given loads for a particular beam.
3.	C214.3	Determine the shear stress distribution along a beam of varying cross sections like rectangular, circular, I-section and T-section.
4.	C214.4	Calculate the deflection of various beams under different loads.
5.	C214.5	Estimate the hoops and longitudinal stresses developed in any thin or thick cylinders.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : II Semester: II	Course: Industrial Engineering and Management	Regulation:R-20

S.no	Course Outcomes	Description
1.	C215.1	Differentiate between production management and industrial engineering
2.	C215.2	Identify the factors influencing plant location and the production layout types
3.	C215.3	Distinguish the types of production
4.	C215.4	Use the statistical quality control techniques for quality
5.	C215.5	Discuss the concepts of human resource management

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : II Semester: II	Course: Mechanics of Solids and Metallurgy Lab	Regulation:R-20

S.no	Course Outcomes	Description
1.	C216.1	Apply methods to determine Mechanical properties and Elastic Constants
2.	C216.2	Appraise the students with the use of testing machines
3.	C216.3	Characterize the microstructures of different ferrous and non ferrous metals
4.	C216.4	Characterize the microstructures of different ferrous and non ferrous metals
5.	C216.5	Use equipments to determine mechanical properties of materials to acquire the knowledge in Material Testing

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : II Semester: II	Course: Machine Drawing Practice	Regulation:R-20

S.no	Course Outcomes	Description
1.	C217.1	Differentiate between production management and industrial engineering
2.	C217.2	Identify the factors influencing plant location and the production layout types
3.	C217.3	Distinguish the types of production
4.	C217.4	Use the statistical quality control techniques for quality
5.	C217.5	Discuss the concepts of human resource management

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : II Semester: II	Course:: Theory of Machines Lab	Regulation:R-20

S.no	Course Outcomes	Description
1.	C218.1	Differentiate between production management and industrial engineering
2.	C218.2	Identify the factors influencing plant location and the production layout types
3.	C218.3	Distinguish the types of production

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : II Semester: II	Course: Python Programming Lab	Regulation:R-20

S.no	Course Outcomes	Description
1.	C219.1	**Develop** python programs using control flow statements.
2.	C219.2	**Examine** the proficiency in handling of strings and Lists.
3.	C219.3	**Develop** programs using data structures like dictionaries, tuples and sets using built-in functions, modules and packages
4.	C219.4	**Develop** programs using the file operations and features of object-oriented programming in python
5.	C219.5	**Develop** GUI applications in Python and list types of exceptions

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : III Semester: I	Course: **TE-2**	Regulation:R-20

S.no	Course Outcomes	Description
1.	C301.1	Calculate thermal efficiency of various steam power plant cycles, Students should be able to distinguish the working principle of Boilers.
2.	C301.2	Compute maximum discharge and maximum efficiency conditions in steam nozzles and steam turbines
3.	C301.3	Draw velocity triangles of reaction turbines under different discharge conditions.
4.	C301.4	Classify the working principles of compressors in detail
5.	C301.5	Calculate the power and efficiencies of various compressors

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : III Semester: I	Course: **DMM-1**	Regulation:R-20

S.no	Course Outcomes	Description
1.	C302.1	To develop Design Procedure for Engineering Problems, Including Loads and Stresses acting on the Members.
2.	C302.2	Apply the different types of failure modes for safe design of machine elements.
3.	C302.3	Select suitable materials for various joints in critical design applications, Apply the steps involved in designing the elements of keys, cotter and knuckle joints.
4.	C302.4	Identify the different loads subjected on the machine members and calculate static and dynamic stresses to ensure safe design.
5.	C302.5	Utilize design data hand book and design the elements of springs for strength, stiffness and fatigue

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : III Semester: I	Course: **MMT**	Regulation:R-20

S.no	Course Outcomes	Description
1.	C303.1	Select the right tool, machining condition and relevant measurement
2.	C303.2	Know the methods and applications of various machining operations.
3.	C303.3	Acquires the practice of working on machines.
4.	C303.4	Acquire the knowledge of selection of machine for various machining operations.
5.	C303.5	understand the basics of finishing processes and super finishing processes

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : III Semester: I	Course: **NT**	Regulation:R-20

S.no	Course Outcomes	Description
1.	C304.1	To understand the nano-structutred materials and their applications
2.	C304.2	To grain knowledge about the nano-crystalline materials, their properities and defects
3.	C304.3	To understand various techniques of nano-fabricatoin.
4.	C304.4	To identify the tools to characterize nano-materials.
5.	C304.5	To analyze the applications of nano materials.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : III Semester: I	Course: **RES**	Regulation:R-20

S.no	Course Outcomes	Description
1.	C305.1	Summarize solar radiation data, solar photo voltaic system and solar energy collectors and energy storage applications.
2.	C305.2	Illustrate maximum techniques for power generation in wind energy system.
3.	C305.3	Identify the basic principles and generation techniques from biomass energy
4.	C305.4	Examine the basic principles of tidal and wave power plants.
5.	C305.5	Illustrate the basic principles, working and types of geothermal systems.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : III Semester: I	Course: **MT-Lab**	Regulation:R-20

S.no	Course Outcomes	Description
1.	C306.1	Demonstrate about general purpose machine tools in the machine shop.
2.	C306.2	Perform various operations on lathe machine.
3.	C306.3	Perceive different operations on drilling machine.
4.	C306.4	Experiment with basic operations on shaping machine.
5.	C306.5	Utilize slotting machine to make keyways.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : III Semester: I	Course: **TE-Lab**	Regulation:R-20

S.no	Course Outcomes	Description
1.	C307.1	Experiment with two stroke and four stroke compression and spark ignition engines for various characteristics.
2.	C307.2	Perceive flash point, fire point, calorific value of different fuels using various apparatus.
3.	C307.3	Perform engine friction, heat balance test, volumetric efficiency, load test of petrol and diesel engines.
4.	C307.4	Perform speed test, performance test and cooling temperature on petrol and diesel engines.
5.	C307.5	Utilize air compressor for its performance test and to determine efficiency
6.	C307.6	Discuss the principles through assembly and disassembly of 2/3 wheelers, 2/4 stroke engines, tractor, heavy duty engines, boilers and their mountings and accessories.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : III Semester: I	Course: **ACES-Lab**	Regulation:R-20

S.no	Course Outcomes	Description
1.	C308.1	Acquire vocabulary and use it contextually
2.	C308.2	Listen and speak effectively
3.	C308.3	Develop proficiency in academic reading and writing
4.	C308.4	Increase possibilities of job prospects

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : III Semester: II	Course: **Heat Transfer**	Regulation:R-20

S.no	Course Outcomes	Description
1.	C309.1	Distinguish different modes of heat transfer.
2.	C309.2	Deduce transient state heat conduction equation
3.	C309.3	Apply the phenomenon of convection in free and forced states.
4.	C309.4	Solve numerical on heat exchangers.
5.	C309.5	Apply the concept of radiation for numerical

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : III Semester: II	Course: **DMM-2**	Regulation:R-20

S.no	Course Outcomes	Description
1.	C310.1	Solve various problems on sliding and rolling contact bearings.
2.	C310.2	Calculate stresses acting on various parts of IC engine using data book.
3.	C310.3	Calculate stresses developed in curved beams, power screws, belts, ropes and chain drives.
4.	C310.4	Examine various problems on spur and helical gears according to their factor of safety.
5.	C310.5	Calculate problems on different types of levers.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : III Semester: II	Course: **AIML**	Regulation:R-20

S.no	Course Outcomes	Description
1.	C311.1	Interpret the basic concepts of artificial intelligence, neural networks and genetic algorithms.(K2)
2.	C311.2	Understand the principles of knowledge representation and reasoning (K2)
3.	C311.3	Illustrate about Bayesian and computational learning and machine learning. (k3)
4.	C311.4	Determine various machine learning techniques.(k3)
5.	C311.5	Examine the machine learning analytics and deep learning techniques.(K3)

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : III Semester: II	Course: **AE**	Regulation:R-20

S.no	Course Outcomes	Description
1.	C312.1	**Determine** basic concepts of automobile construction systems
2.	C312.2	**Examine** the transmission system and various drives used in automobiles.
3.	C312.3	**Categorize** the basic control systems and suspension systems.
4.	C312.4	**Recommend** advanced automobile essentials like ABS, airbags and EBD.
5.	C312.5	**Distinguish** engine specifications and service, safety and electronic system used in automobiles.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : III Semester: II	Course: **EME**	Regulation:R-20

S.no	Course Outcomes	Description
1.	C313.1	**Discuss** the concepts about stresses and strains.
2.	C313.2	**Justify** about the components of transmission systems..
3.	C313.3	**Analyze** Problems related to project management techniques.
4.	C313.4	**Utilize** knowledge about manufacturing processes and materials
5.	C313.5	**Learn** the concepts of boilers, steam power plant, petrol and diesel engines

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : III Semester: II	Course: **Heat Transfer- Lab**	Regulation:R-20

S.no	Course Outcomes	Description
1.	C314.1	Determine the heat transfer rate and coefficient.
2.	C314.2	Determine the thermal conductivity, efficiency and effectiveness.
3.	C314.3	Determine the emissivity and Stefan-Boltzman constant.
4.	C314.4	Determine critical heat flux and investigate Lambert's cosine law.
5.	C314.5	Experiment with Virtual labs and analyse conduction, HT coefficient.
6.	C314.6	Experiment with Virtual labs and investigate Lambert's laws.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : III Semester: II	Course: **CAE & CAM-Lab**	Regulation:R-20

S.no	Course Outcomes	Description
1.	C315.1	Experiment with trusses and beams to determine stress, deflection, natural frequencies, harmonic analysis, HT analysis and buckling analysis.
2.	C315.2	Create part programmes using FANUC controller.
3.	C315.3	Apply G-codes for automated tool path using CAM software.
4.	C315.4	Analyze about rapid prototyping machine and to print simple parts.
5.	C315.5	Experiment with virtual 3D printing simulation using Vlabs.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : III Semester: II	Course: **MM-Lab**	Regulation:R-20

S.no	Course Outcomes	Description
1.	C316.1	Demonstrate the calibration experiments with different gauges, transducers, and thermocouple and temperature detector.
2.	C316.2	Demonstrate the calibration experiments with rotameter, seismic apparatus.
3.	C316.3	Demonstrate the calibration experiments with vernier calipers, micrometer, height and dial gauges.
4.	C316.4	Analyze various machine tools for their alignment.
5.	C316.5	Measure angular and taper measurements, straightness, surface roughness

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : III Semester: II	Course: **AIML - Lab**	Regulation:R-20

S.no	**Course Outcomes**	**Description**
1.	C317.1	Understand objectives and characteristics of a research problem
2.	C317.2	Analyze research related information and to follow research ethics.
3.	C317.3	Understand the types of intellectual property rights.
4.	C317.4	Learn about the scope of IPR.
5.	C317.5	Understand the new developments in IPR.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : IV Semester: I	Course: **Industrial Management**	Regulation:R-19

S.no	Course Outcomes	Description
1.	C401.1	Differentiate between production management and industrial engineering
2.	C401.2	Identify the factors influencing plant location and the production layout types.
3.	C401.3	Distinguish the types of production
4.	C401.4	Use the statistical quality control techniques for quality
5.	C401.5	Discuss the concepts of human resource management

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : IV Semester: I	Course: **FEM**	Regulation:R-19

S.no	Course Outcomes	Description
1.	C402.1	Outline of finite element analysis procedure and how the finite element method expands beyond the structural domain, for problems involving dynamics, heat transfer, and fluid flow, explain the application and characteristics of FEA elements such as bars, beams, and plane and isoperimetric elements, 3–D element.
2.	C402.2	Extract the concepts behind variation methods and weighted residual methods in FEM.
3.	C402.3	Elucidate element characteristic equation procedure and generation of global stiffness equation will be applied.
4.	C402.4	Differences between 1-D, and 2-D finite element analysis procedure.
5.	C402.5	Understand dynamic conditions to solve problems

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : IV Semester: I	Course: **RES**	Regulation:R-19

S.no	Course Outcomes	Description
1.	C403.1	Summarize solar radiation data, solar photo voltaic system and solar energy collectors and energy storage applications.
2.	C403.2	Illustrate maximum techniques for power generation in wind biomass, geo thermal and ocean energy systems.
3.	C403.3	Identify the techniques of energy efficient electrical and mechanical systems
4.	C403.4	Examine the basic principles of energy efficient processes.
5.	C403.5	Illustrate the basic principles, working and types of green energy systems

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : IV Semester: I	Course: **PPE**	Regulation:R-19

S.no	Course Outcomes	Description
1.	C404.1	Distinguish between equipment used in the Thermal power plants
2.	C404.2	Demonstrate working principles of diesel engine and gas turbine power plants.
3.	C404.3	Draw hydrographs and solve for power production and demonstrate the working principles nuclear power plants of various combinations
4.	C404.4	Identify when a power plant can be used as base load plant and peak load for various combinations
5.	C404.5	Calculate performance factors for power plant and knew the different types of pollutions.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : IV Semester: I	Course: **NT**	Regulation:R-19

S.no	Course Outcomes	Description
1.	C405.1	Explain the need Quantum mechanics and Spectroscopy in Nano Technology
2.	C405.2	Illustrate the preparation, Characterization and applications of SIC, Alumina and Zirconia
3.	C405.3	Demonstrate the mechanical properties and magnetic properties of nano materials
4.	C405.4	Demonstrate the electrical properties and optical properties of Nano materials
5.	C405.5	Investigate and manipulating materials in the Nano scale.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : IV Semester: I	Course: **FES-Lab**	Regulation:R-19

S.no	Course Outcomes	Description
1.	C406.1	Determination of static structural analysis in bar, truss and beam by using finite element simulation.
2.	C406.2	Apply the finite element simulation to find natural frequencies and mode shapes, Harmonic responses.
3.	C406.3	Determine the Thermal and modal analysis of Furnace wall and Cantilever beam using finite element simulation.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : IV Semester: I	Course: **Project-1**	Regulation:R-19

S.no	Course Outcomes	Description
1.	C407.1	Demonstrate a sound technical knowledge of their selected project topic.
2.	C407.2	Undertake problem identification, formulation and solution.
3.	C407.3	Design engineering solutions to complex problems utilising a systems approach.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : IV Semester: II	Course: **AMF**	Regulation:R-19

S.no	Course Outcomes	Description
1.	C408.1	Understand Stereo Lithography Apparatus method and Solid Ground Curing method
2.	C408.2	Identify various Solid Based Prototyping processes and their applications
3.	C408.3	Classify various Powder Based Prototyping processes and applications
4.	C408.4	Classify various Rapid prototyping tools
5.	C408.5	Evaluate various Rapid Prototyping formats and software's& applications of RP system in engineering and medical field.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : IV Semester: II	Course: **NDE**	Regulation:R-19

S.no	Course Outcomes	Description
1.	C409.1	**Distinguish** different types of NDE techniques and learnthe basic of Radiography testing methods.
2.	C409.2	**Apply** the concepts of various NDE techniquesusing ultrasonic
3.	C409.3	**Examine** the concepts of liquid penetrant tested specimens.
4.	C409.4	**Analyze** the magnetic particles testing method andtest the specimens in MPT.
5.	C409.5	**Evaluate** the non destructive testing methods andrecommend the testing method.

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : IV Semester: II	Course: **ECM**	Regulation:R-19

S.no	Course Outcomes	Description
1.	C410.1	Explain the fundamentals of energy management and its influence on environment
2.	C410.2	Discuss the methods of energy production for improved utilization, understand the basic energy conversion and management principles
3.	C410.3	Analyze the methods of energy conservation and energy efficiency and in carrying out budgeting and risk analysis
4.	C410.4	Evaluate basis of economic and financial criteria and also Pros and cons of the common method of analysis & Replacement analysis
5.	C410.5	Explain alternative energy sources: Solar energy & wind energy

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : IV Semester: II	Course: Advanced Materials	Regulation:R-19

S.no	Course Outcomes	Description
1.	C411.1	**Classify various composites and reinforcements**
2.	C411.2	**Distinguish various manufacturing techniques of composites**
3.	C411.3	**Make use of the Hooke's Law and apply the same to engineering elastic constants of an orthotropic lamina**
4.	C411.4	**Classify the functionally graded materials and Shape Memory alloys**
5.	C411.5	**Compare nano materials with bulk materials in terms of their properties and applications**

Department : Department of Mechanical Engineering			
Academic Year: 2022-23	Year : IV Semester: II	Course: Project -2	Regulation:R-19

S.no	Course Outcomes	Description
1.	C412.1	1.Ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety
2.	C412.2	2. Ability to communicate effectively with team members
3.	C412.3	3. bility to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

Head of the Department **Principal**

DEPARTMENT OF MASTER OF BUSINESS ADMINISTRATION

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : I Semester: I	Course: Management and Organizational Behaviour	Regulation:R-19

S.no	Course Outcomes	Description
1.	C101.1	Describe functions and Importance of Management theories (k2)
2.	C101.2	Explain Organization Structures and Effective Controlling Techniques (k2)
3.	C101.3	Discuss organizational Behaviour and Perceptual learning process
4.	C101.4	Determine theories of Motivation and Collaborative process in work groups(k3)
5.	C101.5	Discuss Problem Solving techniques in Organizational Conflict (k2)
6.	C101.6	Explain Organizational change in creating an Ethical Organization

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : I Semester: I	Course: Managerial Economics	Regulation:R-19

S.no	Course Outcomes	Description
1.	C102.1	Describe fundamental concepts of managerial economics (k2)
2.	C102.2	Illustrate Elasticies of Demand and its Measurements (k2)
3.	C102.3	Explain Cost Concepts and Production Function Analysis (k2)
4.	C102.4	Determine Price Out-Put determination of Competition (k3)
5.	C102.5	Explain Various Methods of Pricing (k2)
6.	C102.6	Discuss the measures to Control Inflation and Deflation (k3)

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : I Semester: I	Course: Accounting for Managers	Regulation:R-19

S.no	Course Outcomes	Description
1.	C103.1	Generalize Accounting Concepts and Accounting Cycle (k2)
2.	C103.2	Interpret analysis and importance of Financial Statements (k2)
3.	C103.3	Classify Cost and Cost Sheet and their Methods (K2)
4.	C103.4	Explain Different types of Budgets and their Preparation (k3)
5.	C103.5	Explain need and Importance of Management Accounting (k3)
6.	C103.6	Discuss the concept of Break -Even Analysis and their process (k2)

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : I Semester: I	Course: Quantitative Analysis for Business Decisions	Regulation:R-19

S.no	Course Outcomes	Description
1.	C104.1	Discover the no of different ways of arranging and selecting objectswith the help of permutations and combinations(K2)
2.	C104.2	Use a probability distributions to help a company frame its possible future values in terms of likely sales level(K3)
3.	C104.3	Apply techniques and frame works to solve a range of decisions that managers commenly confront(K3)
4.	C104.4	Use uncertainity ,risk concepts and insightsvto make more effective decisions(k3)
5.	C104.5	Apply hypothisis testing to common bisiness problems(k3)
6.	C104.6	Compare more than two groups at the same time to decide whether a relationship exists between them by using of analysis of variance(k4)

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : I Semester: I	Course: Legal & Business Environment	Regulation:R-19

S.no	Course Outcomes	Description
1.	C105.1	Explain concept and nature of business environment and the role of NITI Aayog for overall economic development of India(K2)
2.	C105.2	Identify easily the nature of Political, Economic factors that effects on Business(k2)
3.	C105.3	Discuss importance of Law in Business with respective to Indian Contracts Act 1872, Intellectual Property rights and Negotiable Instruments Act 1881(k2)
4.	C105.4	Determine importance of Law in Business with respective to Intellectual Property rights and Negotiable Instruments Act 1881(k3)
5.	C105.5	Explain the knowledge of Incorporation of a Company and know the Partnership Act and Information Technology Act(k3)
6.	C105.6	classify different acts like-Sale of Goods Act, Consumer Protection Act, Environment Protection Act and Foreign Management Act (FEMA)(K4)

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : I Semester: I	Course: Business Communication &Soft Skills	Regulation:R-19

S.no	Course Outcomes	Description
1.	C106.1	Apply the knowledge of basics of business communication to deal with the organization inside and out side
2.	C106.2	Change the inter &intra personal
3.	C106.3	Develop non-verbal communication required for the business environment across different cultures
4.	C106.4	Identify different structures and patterns for different business writings including cv's , memos, circulars & proposals & reports
5.	C106.5	Write resume's/cv's effectively for the career environment
6.	C106.6	Prepare strategies for effective presentations in the business environment.

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : I Semester: I	Course: Rural Innovation Projects	Regulation:R-19

S.no	Course Outcomes	Description
1.	C107.1	Identify various Types of Rural Resources (k2)
2.	C107.2	Classify Land Based on Utility and soil Structure and their importance (k2)
3.	C107.3	Discuss Human Resource Dimensions of Rural Development (k2)
4.	C107.4	Explain Food Security and Public Distribution system (k2)
5.	C107.5	Discuss Rural Development Policies during Different plan Periods (k3)
6.	C107.6	Demonstrate Rural development Programs in the area of Agricultural Sector (k3)

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : I Semester: I	Course: IT Lab	Regulation:R-19

S.no	Course Outcomes	Description
1.	C108.1	Develop excel and manipulate with its features and components(k3)
2.	C108.2	compute various excel functions(k3)
3.	C108.3	Demonstrate account type and setting up company in tally(k3)

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : I Semester: I	Course: Business Communication &Soft Skills Lab	Regulation:R-19

S.no	Course Outcomes	Description
1.	C109.1	Demonstrate proficiency in listening & speaking skills for formal and informal conversations, group discussions and self presentations. (K3)
2.	C109.2	Show leadership traits in goal setting, time management and event scheduling through channels of organization communication and Identify appropriate body language to the required formal context (K3)
3.	C109.3	Illustrate writing skills for different communicative contexts of resume, reports, memos, covering letters and emails and Prepare effective presentations for different professional contexts (K3)

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : 1 Semester: II	Course: Financial Management	Regulation:R-19

S.no	Course Outcomes	Description
1.	C201.1	Describe Evaluation of Financial Management and Major decisions of financial manager.(K2)
2.	C201.2	Determine Sources of finance and Weighted Average Cost of Capital.(K3)
3.	C201.3	Identify Techniques of Time Value of Money(K3)
4.	C201.4	Illustrate Discounting and Non Discounting Methods.(K3)
5.	C201.5	Discuss Major forms of dividends (K3)
6.	C201.6	Calculate Estimating Working Capital requirement(K3)

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : 1 Semester: II	Course: Human Resource Management	Regulation:R-19

S.no	Course Outcomes	Description
1.	C202.1	Explain evolution of HRM and global perspective challenges(K2)
2.	C202.2	Discuss Recruitment and Selections methods(K2)
3.	C202.3	Determine performance appraisal methods(K3)
4.	C202.4	Demonstrate Incentives rewards compensation mechanisms.(K3)
5.	C202.5	Describe Wage payment Plans(K2)
6.	C202.6	Examine Trade Unions ,Grievances and disputes resolution mechanisms(K3)

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : 1 Semester: II	Course: Marketing Management	Regulation:R-19

S.no	Course Outcomes	Description
1.	C203.1	Explain concepts of marketing management(k2)
2.	C203.2	Identify market segmentation and its types(k2)
3.	C203.3	Discuss methods of pricing and adopting pricing strategies(k2)
4.	C203.4	Determine sales force compensation and sales force size(k3)
5.	C203.5	Explain marketing communication process and communication mix(k3)
6.	C203.6	classify marketing performance control techniques

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : 1 Semester: II	Course: Operations Management	Regulation:R-19

S.no	Course Outcomes	Description
1.	C204.1	Explain nature and scope of production and operations management(k2)
2.	C204.2	Classify product layout characteristics and its advantages and disadvantages(k2)
3.	C204.3	Describe methods of forecasting and capacity requirement planning(k2)
4.	C204.4	Determine method study and its techniques(k3)
5.	C204.5	Illustrate job design process(k3)
6.	C204.6	List the statistical quality control techniques (k4)

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : 1 Semester: II	Course: Business Research Methods	Regulation:R-19

S.no	Course Outcomes	Description
1.	C205.1	Explain Research and types of research(k2)
2.	C205.2	Discuss measurement and scaling techniques(k2)
3.	C205.3	Illustrate preparation and presentation of research report(k3)
4.	C205.4	Calculate parametric and non parametric tests(k3)
5.	C205.5	Explain Bi variate analysis for comparing two proportions(k3)
6.	C205.6	Illustrate ANOVA for complex experimental designs

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : 1 Semester: II	Course: Project Management	Regulation:R-19

S.no	Course Outcomes	Description
1.	C206.1	Discuss basic concept of project management(k2)
2.	C206.2	Explain process of conducting marketing survey(k2)
3.	C206.3	Illustrate program evalution and review technique in project management(k3)
4.	C206.4	Describe capital investment appraisal techniques(k3)
5.	C206.5	Discuss process of estimation of capital cost and operating cost(k3)
6.	C206.6	Explain prerequisites for successful project implimentation(k3)

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : 1 Semester: II	Course: R Programming	Regulation:R-19

S.no	Course Outcomes	Description
1.	C207.1	Demonstarate R software to implement data types,frames,lists,matrices and arrays(k3)
2.	C207.2	Develop R programming for control statements(k3)
3.	C207.3	Compute R Programming Functions for statistical distributions,Sorting,set operations and Reading and writing files(k3)

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : I1 Semester: I	Course: Strategic Management	Regulation:R-19

S.no	Course Outcomes	Description
1.	C301.1	Generalize Concepts in Strategic management (k2)
2.	C301.2	Identify Various strategies and Competitive Advantages in Diversified companies (k2)
3.	C301.3	Establish Strategic frame work for analyzing Competition (k3)
4.	C301.4	Develop operationalizing and Institutionalizing Strategy (k3)
5.	C301.5	Explain Qualitative and Quantitative Benchmarking to Evalute Performance (k4)
6.	C301.6	Illustrate the Problems in Measuring Performance (k4)

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : II Semester: I	Course: Operations Research	Regulation:R-19

S.no	Course Outcomes	Description
1.	C302.1	Discuss the importance of operations research in business(k2)
2.	C302.2	Explain transportation and assighnment models(k3)
3.	C302.3	Illustrate integer programming,branch and bound method in dynamic programming(k3)
4.	C302.4	Apply two person zero-sum games in game theory(k3)
5.	C302.5	Explain replacement model for single replacement and group replacement(k3)
6.	C302.6	Determine optimum cost and optimum duration with the help of project crashing techniques(k3)

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : II Semester: I	Course: Investment Analysis And Portfolio Management	Regulation:R-19

S.no	Course Outcomes	Description
1.	CE301-FIN.1	Differentiate Investment and Speculation in Security Markets (k2)
2.	CE301-FIN.2	Discuss meaning and types of Security Risks (k2)
3.	CE301-FIN.3	Explain Economy,Industry ,Company and Technical Analysis (k3)
4.	CE301-FIN.4	Determine Various forms of Market Efficiency (k3)
5.	CE301-FIN.5	Classify Portfolio Models (k4)
6.	CE301-FIN.6	Evaluation of Portflolio Models (k4)

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : II Semester: I	Course: Leadership and Change Management	Regulation:R-19

S.no	Course Outcomes	Description
1.	CE301-HR.1	Discuss Organisational Leadership and their Factors of Leadership (k2)
2.	CE301-HR.2	Describe Motivational Leadership theories and their Performance (k2)
3.	CE301-HR.3	Explain Leadership Skills and Principles of Team Buliding (k3)
4.	CE301-HR.4	Identify Interpersonal Leadership Skills (k3)
5.	CE301-HR.5	Illustrate nature and Types of Change Management (k3)
6.	CE301-HR.6	Outline Review of Basic flow of Diagrammatic techniques (k4)

Department : Department of Master of Business Administration				
Academic Year: 2022-23		Year : II Semester: I	Course: Managing Banks and Financial Institutions	Regulation:R-19
S.no	**Course Outcomes**	**Description**		
1.	CE302-FIN.1	Describe the concept of Financial System in India (k2)		
2.	CE302-FIN.2	Explain Structure and Functions of RBI and Commercial Banks (k2)		
3.	CE302-FIN.3	Illustrate Risk Managements in Banks (k3)		
4.	CE302-FIN.4	Determine Credit Risk Model (k3)		
5.	CE302-FIN.5	Differentiate Various Financial Institutions LIC-GIC-UTI (K4)		
6.	CE302-FIN.6	Classify Financial Instruments and Institutions (k4)		

Department : Department of Master of Business Administration				
Academic Year: 2022-23		Year : II Semester: I	Course: Performance Evaluation and Compensation Management	Regulation:R-19
S.no	**Course Outcomes**	**Description**		
1.	CE302-HR.1	Explain the Process for Managing Performance (k2)		
2.	CE302-HR.2	Describe Need and Importance of Strategic Performance Planning (k2)		
3.	CE302-HR.3	Determine Objectives , Principles and Process of monitoring (k3)		
4.	CE302-HR.4	Discuss Role of Compensation and Rewaed in Modern Organization (k3)		
5.	CE302-HR.5	Examine New Trends in Compensation management at National and International level (k3)		
6.	CE302-HR.6	Explain history and types of Compensation system (k4)		

Department : Department of Master of Business Administration				
Academic Year: 2022-23		Year : II Semester:I	Course: Financial Markets and Services	Regulation:R-19
S.no	**Course Outcomes**	**Description**		
1.	CE303-FIN.1	Describe the concept of Financial System in India (k2)		
2.	CE303-FIN.2	Discuss growth of financial services in India(k2)		
3.	CE303-FIN.3	Illustrate legal aspects and Guidelines for venture capital(k3)		
4.	CE303-FIN.4	Determine Credit Risk Model (k3)		
5.	CE303-FIN.5	Explain working of public and private mutual funds in India(K3)		
6.	CE303-FIN.6	Illustrate microfinance models(k3)		

Department : Department of Master of Business Administration				
Academic Year: 2022-23		Year : II Semester: I	Course: Human Capital Management	Regulation:R-19
S.no	**Course Outcomes**	**Description**		
1.	CE304-HR.1	Describe growth of Labour Market in India (k2)		
2.	CE304-HR.2	Distinguish Monetary and Non-Monetary Models (k2)		
3.	CE304-HR.3	Explain Value based models (k2)		
4.	CE304-HR.4	Discuss Workers participation in Management (k3)		
5.	CE304-HR.5	Determine Nature and Types of Employees Engagement (k3)		
6.	CE304-HR.6	Explain different types of Social Security in India (k3)		

Department : Department of Master of Business Administration				
Academic Year: 2022-23		Year : II Semester: I	Course: Taxation	Regulation:R-19
S.no	**Course Outcomes**	**Description**		
1.	CE305-FIN.1	Describe the concept of Tax policies in India (k2)		
2.	CE305-FIN.2	Discuss the concept of Gross total income and Rebates and Reliefs(k2)		
3.	CE305-FIN.3	computation of partnership firm book profit and set off carry forward losses(k3)		
4.	CE305-FIN.4	Explain procedure of MAT and Tax provision (k3)		
5.	CE305-FIN.5	Explain Tax Audit and Accounting(K3)		
6.	CE305-FIN.6	Illustrate Tax reporting and Disclosure in Financial statements(k3)		

Department : Department of Master of Business Administration				
Academic Year: 2022-23		Year : II Semester: I	Course: Manpower Planning, Recruitment, and Selection	Regulation:R-19
S.no	**Course Outcomes**	**Description**		
1.	CE305-HR.1	Demonstrate the Process of Human Resorce Planning (k2)		
2.	CE305-HR.2	Generalize the man power planning system in Business Environment (k2)		
3.	CE305-HR.3	Describe job Evaluation methods and process (k3)		
4.	CE305-HR.4	Illustrate Recruitment and selection need process (k3)		
5.	CE305-HR.5	Discuss Selection and barriers to effective selection making process (k3)		
6.	CE305-HR.6	Explain Training and Development policies and Strategies (k4)		

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : II Semester: II	Course: Supply Chain Management & Analytics	Regulation:R-19

S.no	Course Outcomes	Description
1.	C401.1	Describe the concept of different views of supply chain(k2)
2.	C401.2	Illustrate about Strategic Network Planning(k2)
3.	C401.3	Compute Set covering Problems Set Partitioning Problems and linking algorithms(k3)
4.	C401.4	Distinguish CRM vs SCM(k3)
5.	C401.5	Explain the role of computer/ IT in supply chain management(k3)
6.	C401.6	Discuss Inventory management in supply chain(k3)

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : II Semester: II	Course: Innovation & Entrepreneurship	Regulation:R-19

S.no	Course Outcomes	Description
1.	C402.1	Classify the theories of entrepreneurship(k2)
2.	C402.2	Describe the role of SIDBI in project management(k2)
3.	C402.3	Explain financial and managerial problems(k3)
4.	C402.4	Discuss role of women entrepreneur(k3)
5.	C402.5	Distinguish professionalism and family entrepreneurs(k3)
6.	C402.6	Develop business strategy ,New product strategy(k3)

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : II Semester: II	Course: Financial Derivatives	Regulation:R-19

S.no	Course Outcomes	Description
1.	CE401-FIN.1	Describe groth of financial derivatives in India(k2)
2.	CE401-FIN.2	Distinguish forward contract and future contract(k2)
3.	CE401-FIN.3	Explain types of options in option market(k3)
4.	CE401-FIN.4	Calculate option price with the help of Black Scholes Option pricing model(k3)
5.	CE401-FIN.5	Discuss the Binomial option pricing model(k3)
6.	CE401-FIN.6	Explain economic functions of SWAP TRANSACTIONS

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : II Semester: II	Course: Labor Welfare and Employability Laws	Regulation:R-19

S.no	Course Outcomes	Description
1.	CE401-HR.1	Explain the Impact of ILO on labour welfare in India.(K2)
2.	CE401-HR.2	Discuss the Welfare Officers' Role, Status and Function.(K2)
3.	CE401-HR.3	Illustrate Factories act 1948(K3)
4.	CE401-HR.4	Describe A.P.Shops and Establishment Act (K2)
5.	CE401-HR.5	Demonstrate Industrial Relations and Legislation.(K3)
6.	CE401-HR.6	Outline Trade Unions Act 1926

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : II Semester: II	Course: Global Financial Management	Regulation:R-19

S.no	Course Outcomes	Description
1.	CE402-FIN.1	Describe functions and Importance of financial Management theories (k2)
2.	CE402-FIN.2	Explain Forex Derivatives – Swaps, futures and Options and Forward Contracts (k2)
3.	CE402-FIN.3	Discuss Euro Bonds and Process of Issue of GDRs and ADRs. (k2)
4.	CE402-FIN.4	Determine Multinational Capital Budgeting; International Acquisition and Valuations(k3)
5.	CE402-FIN.5	Discuss Problem International Accounting and Reporting (k2)
6.	CE402-FIN.6	Explain Adjusting for Risk in Foreign Investment. (k3)

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : II Semester: II	Course: International HRM	Regulation:R-19

S.no	Course Outcomes	Description
1.	CE402-HR.1	Discuss HR challenges at IHRM (K2)
2.	CE402-HR.2	Explain the international assignment and legal content of Global HRM (K2)
3.	CE402-HR.3	Descibe Cross-Cultural Theories(K2)
4.	CE402-HR.4	Demonstrate types of Cross-Culture Communication (K3)
5.	CE402-HR.5	Explain global compensation implications on Indian system (K2)
6.	CE402-HR.6	Discuss the challenges of HRD at global level (K2)

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : II Semester: II	Course: Financial Risk Management	Regulation:R-19

S.no	Course Outcomes	Description
1.	CE403-FIN.1	Discuss Internal and External Risk reporting Process in Financial Institutions(K2)
2.	CE403-FIN.2	Explain Risk management tools used for efficient risk managment(K2)
3.	CE403-FIN.3	Illustrate importance and types of derivatives(K3)
4.	CE403-FIN.4	Describe Pay off profiles of Forward Contract(K3)
5.	CE403-FIN.5	Explain Pricing of Interest rate Swaps at Origination and Valuing of Interest Swaps after Origination(K3)
6.	CE403-FIN.6	Discuss options on Stock Indices and Currencies(K2)

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : II Semester: II	Course: Employee Relations and Engagement	Regulation:R-19

S.no	Course Outcomes	Description
1.	CE403-HR.1	Explain origin and Background of Industrial Relations (k2)
2.	CE403-HR.2	Discuss Trade union Act 1926 (k2)
3.	CE403-HR.3	Describe Grievance handling Machinery and Causes of Grievance (k2)
4.	CE403-HR.4	Determine prevention and Settlement of Industrial Dispute act 1947 (k3)
5.	CE403-HR.5	IIustrate Cases and Consequences of Industrial disputes in India (k3)
6.	CE403-HR.6	Explain factors and Driers of Employee Engagement (k3)

Department : Department of Master of Business Administration			
Academic Year: 2022-23	Year : II Semester: II	Course: Strategic Financial Management	Regulation:R-19

S.no	Course Outcomes	Description
1.	CE404-FIN.1	Discuss Managerial Implications of Shareholder Value Creation. (K2)
2.	CE404-FIN.2	Explain Financial Strategy for Capital Structure: Leverage Effect and Shareholders' Risk (K2)
3.	CE404-FIN.3	Illustrate Risk Adjusted Net Present Value (K3)
4.	CE404-FIN.4	Describe Merger and Dilution Effect on Business Control.(K3)
5.	CE404-FIN.5	Explain Takeover Regulations of SEBI &Restructuring Strategy (K3)
6.	CE404-FIN.6	Discuss Decision Tree Approach for Investment Decisions (K2)

Department : Department of Master of Business Administration				
Academic Year: 2022-23		Year : II Semester: II	Course: Strategic HRM	Regulation:R-19
S.no	**Course Outcomes**	**Description**		
7.	CE405-HR.1	Explain theoretical perspectives on SHRM approaches (K2)		
8.	CE405-HR.2	Discuss Strategic HR planning model (K2)		
9.	CE405-HR.3	Explain Strategic implementation as a social issue (k2)		
10.	CE405-HR.4	Discuss Reward and Performance management strategies (K2)		
11.	CE405-HR.5	Describe Strategic HRD planning (K3)		
12.	CE405-HR.6	Illustrate HR as a Profit centre and HR outsourcing strategy (K3)		

Head of the Department **Principal**

DEPARTMENT OF ELECTRIONICS AND COMMUNICATION ENGINEERING
M. TECH PROGRAM: VLSI & EMBEDDED SYSTEM

Department : Department of Electronics and Communication Engineering			
Academic Year: 2021-22	Year : I Semester: I	Course: RTL Simulation and Synthesis with PLDs	Regulation:R-19

S.no	Course Outcomes	Description
1.	C101.1	Develop the Verilog HDL to design combinational and sequential digital circuits
2.	C101.2	Analyze Finite State Machines and comprehend concepts of clock related issues
3.	C101.3	Outline the concepts of ASIC design flow
4.	C101.4	Examine the static timing analysis and clock issues in digital circuits
5.	C101.5	Explain the functionality of the digital designs using PLDs.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2021-22	Year : I Semester: I	Course: Microcontrollers and Programmable Digital Signal Processors	Regulation:R-19

S.no	Course Outcomes	Description
1.	C102.1	Classify ARM processor core based SoC with several features/peripherals based on requirements of embedded applications
2.	C102.2	Identify and characterize various interrupt controllers
3.	C102.3	Develop small applications by utilizing the ARM processor core and DSP processor based platform
4.	C102.4	Discuss about various interrupt handling mechanisms in ARM processors
5.	C102.5	Illustrate of logical applications using programmable DSP processors

Department : Department of Electronics and Communication Engineering			
Academic Year: 2021-22	Year : I Semester: I	Course: Digital Signal and Image Processing	Regulation:R-19

S.no	Course Outcomes	Description
1.	C103.1	Categorize various transforms available for the analysis of discrete-time signals and systems.
2.	C103.2	Determine the filter coefficients of IIR & FIR digital filters for the given specifications.
3.	C103.3	Analyze the quantization effects and outline the fundamentals of digital image processing using various transforms.
4.	C103.4	Apply spatial & frequency domain filters for image enhancement & restoration.
5.	C103.5	Discuss the techniques for image segmentation & compression
6.	C103.6	Explain the basics of color image processing.

Department : Department of Electronics and Communication Engineering			
Academic Year: 2021-22	Year : I Semester: I	Course: CAD of Digital System	Regulation:R-19

S.no	Course Outcomes	Description
1.	C104.1	Illustrate VLSI methodologies, layout design rules and fabrication process
2.	C104.2	Examine Data structures & basic algorithms and solve tractable & intractable problems
3.	C104.3	Analyze different algorithms related to Partitioning, Floor Planning, Placement and Routing
4.	C104.4	Illustrate simulation, logic synthesis and verification
5.	C104.5	Analyze different MCM technologies and Develop VHDL for different digital circuits.
6.	C104.6	Illustrate VLSI methodologies, layout design rules and fabrication process

Department : Department of Electronics and Communication Engineering			
Academic Year: 2021-22	Year : I Semester: I	Course: Research methodology and IPR	Regulation:R-19

S.no	Course Outcomes	Description
1.	C105.1	Categorize sources of research problem
2.	C105.2	Determine paper developing a research proposal
3.	C105.3	Analyze intellectual property rights
4.	C105.4	Apply licensing and transfer of technology
5.	C105.5	Explain new development in IPR rights
6.	C105.6	Categorize sources of research problem

Department : Department of Electronics and Communication Engineering			
Academic Year: 2021-22	Year : I Semester: I	Course: RTL Simulation and Synthesis with PLDs Lab	Regulation:R-19

S.no	Course Outcomes	Description
1.	C106.1	Develop a Verilog programs for different combinational circuits.
2.	C106.2	Analyze a real – time application such as vending machines using Verilog HDL
3.	C106.3	Solve and implement problems in signal and communication systems using RTL design tools

Department : Department of Electronics and Communication Engineering			
Academic Year: 2021-22	Year : I Semester: I	Course: Microcontrollers and Programmable Digital Signal Processors Lab	Regulation:R-19

S.no	Course Outcomes	Description
1.	C107.1	Develop a Embedded C Programs for Cortex-M3 development boards
2.	C107.2	Develop a Embedded C timer Program for Cortex-M3 development boards
3.	C107.3	Develop C Code for various digital signals using CCS in DSK 6713 kit

Head of the Department **Principal**

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING M Tech in POWER AND INDUSTRIAL DRIVES

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: I	Course: Electrical Machines Modeling and Analysis	Regulation: R19

S.no	Course Outcomes	Description
1.	C101.1	Analyze the characteristics of different types of DC motors to design suitable controllers for different applications.
2.	C101.2	Apply the knowledge of reference frame theory for AC machines to model the induction and Synchronous machines.
3.	C101.3	Evaluate the steady state and transient behaviour of induction and synchronous machines to propose the suitability of drives for different industrial applications.
4.	C101.4	Analyze the behaviour of induction machines using voltage and torque equations.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: I	Course: Analysis of Power Electronic Converters.	Regulation: R19

S.no	Course Outcomes	Description
1.	C102.1	Describe and analyze the operation of AC-DC converters.
2.	C102.2	Analyze the operation of power factor correction converters.
3.	C102.3	Analyze the operation of three phase inverters with PWM control
4.	C102.4	Study the principles of operation of multi- level inverters and their applications.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: I	Course: . Modern Control Theory.	Regulation: R19

S.no	Course Outcomes	Description
1.	C103.1	Formulate and solve the state equations of dynamic systems, analyze controllability and observability.
2.	C103.2	Design a state feedback controller; design an observer
3.	C103.3	Linearize a nonlinear system model; analyze non-linear systems through describing functions.
4.	C103.4	Determine the stability of a given system; generate a Lyapunov function.
5.	C103.5	Minimize a given functional, design an optimal feedback gain matrix.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: I	Course: Renewable Energy Technologies	Regulation: R19

S.no	Course Outcomes	Description
1.	C104.1	Understand various general aspects of renewable energy systems
2.	C104.2	Analyze and design induction generator for power generation from wind
3.	C104.3	Design MPPT controller for solar power utilization
4.	C104.4	Utilize fuel cell systems for power generation.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: I	Course: Research Methodology	Regulation: R19

S.no	Course Outcomes	Description
1.	C105.1	Explain the research problem and research process.
2.	C105.2	Understand proper Research Ethics.
3.	C105.3	Conclude a research paper and well structured Scientific presentations.
4.	C105.4	Illustrate various IPR components and process of filing an IPR.
5.	C105.4	Discuss the knowledge on patent and rights.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: I	Course: Power Electronics Simulation Laboratory	Regulation: R19

S.no	Course Outcomes	Description
1.	C106.1	To understand the operation of DC-DC converters.
2.	C106.2	Examine the operation of AC-DC converters, AC voltage regulators and DC-AC converters by simulation.
3.	C106.3	Estimate and Simulate any problem related to Power Electronics and allied fields using appropriate softwares.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: I	Course: Power Converters Lab	Regulation: R19

S.no	Course Outcomes	Description
1.	C107.1	Examine the converter and inverters in real time applications.
2.	C107.2	Analyze the AC-AC, DC-AC converters and also converter fed to AC and DC drives.
3.	C107.3	Evaluate the various power electronic converter topologies and their speed.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Switched Mode Power Conversion	Regulation: R19

S.no	Course Outcomes	Description
1.	C201.1	Analyze operation and control of non-isolated and isolated switch mode converters
2.	C201.2	Design of non-isolated and isolated switch mode converters
3.	C201.3	Analyze operation and control of resonant converters.
4.	C201.4	Feedback design of switch mode converters based on linearized models.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Power Electronic Control of Electrical Drives	Regulation: R19

S.no	Course Outcomes	Description
1.	C202.1	Understand the concepts of scalar and vector control methods for drive systems.
2.	C202.2	Analyze and design controllers and converters for induction motor, PMSM and BLDC drives.
3.	C202.3	Select and implement proper control techniques for induction motor and PMSM for specific applications
4.	C202.4	Analyze and design control techniques and converters for SRM drives
5.	C202.5	List out the current controllers and Flux Controllers.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Digital Control Systems	Regulation: R19

S.no	Course Outcomes	Description
1.	C203.1	Analyze digital control systems using Z-transforms and Inverse Z-Transforms.
2.	C203.2	Evaluate the state transition matrix and solve state equation for discrete model for continuous time systems, investigate the controllability and observability.
3.	C203.3	Determine the stability; design state feedback controller.
4.	C203.4	Design an observer.
5.	C203.5	Solve a given optimal control problem.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Applications of Power Converters	Regulation: R19

S.no	Course Outcomes	Description
1.	C204.1	Analyze power electronic application requirements.
2.	C204.2	Identify suitable power converter from the available configurations.
3.	C204.3	Develop improved power converters for any stringent application requirements.
4.	C204.4	Design of Bi-directional converters for charge/discharge applications.
5.	C204.5	Apply advanced modulation techniques for analyzing and designing power converters.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Electric Drives and Simulation Laboratory.	Regulation: R19

S.no	Course Outcomes	Description
1.	C205.1	Understand the Operation of Simulate PMSM motor by using d-q model.
2.	C205.2	Examine the operation of Simulate the multilevel inverter fed induction motor drive.
3.	C205.3	Study of PWM controlled inverter fed PMSM drive.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Electric Drives Laboratory.	Regulation: R19

S.no	Course Outcomes	Description
1.	C206.1	Study of armature controlled seperately excited DC drive with 3-Phi full Converter.
2.	C206.2	Understand the Study of Performance Characteristics of a 3-Phi induction motor using V/F control.
3.	C206.3	Discuss the Speed Control methods of DC and AC drives.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: I Semester: II	Course: Mini Project	Regulation: R19

S.no	Course Outcomes	Description
1.	C207.1	Practice acquired knowledge with in the chosen software for project Deelopment.
2.	C207.2	Develop as an individual or in a team in development of technical projects.
3.	C207.3	Identify, discuss and justify the technical aspects of the chosen project with a comprehensive and systematic approach.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: II Semester: III	Course: Digital Signal Processing Controlled Drives	Regulation: R19

S.no	Course Outcomes	Description
1.	C301.1	Interface the DSP platform with sensors such as hall-effect voltage sensors
2.	C301.2	Use hall-effect current sensors, shaft encoder for data acquisition for motor drive applications
3.	C301.3	Scale and normalize the data to suit the requirements of the drive system
4.	C301.4	Exploit the architectural features of the DSP platform to design and implement
5.	C301.5	Use algorithms for the realization of controllers, Pulse Width Modulators and observers

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: II Semester: III	Course: Energy Audit, Conservation & Management	Regulation: R19

S.no	Course Outcomes	Description
1.	C302.1	Understand the principle of energy audit and their economic aspects
2.	C302.2	Recommend energy efficient motors and design good lighting system
3.	C302.3	Understand advantages to improve the power factor
4.	C302.4	Evaluate the depreciation of equipment
5.	C302.5	Determine Pay back periods for energy saving equipment.

Department : Department of Electrical and Electronics Engineering			
Academic Year: 2022-23	Year: II Semester: IV	Course: Project	Regulation: R19

S.no	Course Outcomes	Description
1.	C401.1	Formulate and apply mathematical, science and engineering principles to solve real time engineering Problems.
2.	C401.2	Test the existing data, Communicate and Conduct research on complex problems using modern tools.
3.	C401.3	Validate the obtained results on contemporary issues related to society and Environment.

Head of the Department **Principal**