METHODIST
COLLEGE OF ENGINEERING & TECHNOLOGY
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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE OUTCOMES — **I SEMESTER** — **AY:2022-23**

Course Name	Faculty Name	CO / PO	Course Outcomes	Taxonomy
PROGRAMMING FOR PROBLEM SOLVING	Mrs. Deepthi Joshi	3ES101CS.1	Formulate simple algorithms for arithmetic and logical problem; Translate the algorithms to programs	Understand
		3ES101CS.2	Test and execute the programs and correct syntax and logical errors	Apply
		3ES101CS.3	Implement conditional branching, iteration and recursion	Evaluate
		3ES101CS.4	Decompose a problem into functions and synthesize a complete program using divide and conquer approach Use arrays, pointers, structures and file management to solve real	Anlyze
		3ES101CS.5	Construct recursive programs and use structures to formulate algorithms and programs	Create
PROGRAMMING FOR PROBLEM SOLVING LAB	Mrs. Deepthi Joshi	3ES102CS.1	Choose appropriate data type for implementing programs in C language	Create
		3ES102CS.2	Design and implement modular programs involving input output operations, decision making and looping constructs	Understand
		3ES102CS.3	Apply the concept of arrays, pointers for implementing programs and string handling	Create
		3ES102CS.4	Design and implement programs to store data in structures and files	Understand
		3ES102CS.5	Develop confidence for self education and ability for life long learning need for computer languages	Apply

ASSESSMENT COMMITTEE

Dept. of Computer Science
Methodist College of Engg. & Tech
Hyderabad

HOD-CSE

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Department of CSE
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Abids, Hyderabad.

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COURSE OUTCOMES		II SEMESTER		AY:2022-23
Course Name	Faculty Name	CO / PO	Course Outcomes	Taxonomy
Data Structures	Mr Senthil Kumar/ Mr Shaik Rasool / Mr T Vijay Kumar	3ES202CS.1	Analyze the complexities of recursive and Non recursive algorithms.	Analyze
		3ES202CS.2	Apply the concepts of dynamic memory allocation for reducing the time and space complexity of algorithms.	Apply
		3ES202CS.3	Apply ADT concepts such as arrays, stacks and queues for solving infix to post fix, postfix evaluation.	Evaluate
		3ES202CS.4	Design and implement the Non linear data structures trees to optimize the solution	Create
		3ES202CS.5	Implement linear, binary, hashing searching techniques and sorting techniques	Apply
Data Structures Lab	Mr Senthil Kumar/ Mr Shaik Rasool / Mr T Vijay Kumar	3ES252CS.1	Understand and Implement the abstract data type and reusability of a particular data structure.	Remember
		3ES252CS.2	Implement linear data structures such as stacks, queues using array and linked list.	Understand
		3ES252CS.3	Understand and implements non-linear data structures such as trees, graphs.	Evaluate
		3ES252CS.4	Implement various kinds of searching, sorting and traversal techniques and know when to choose which technique.	Create
		3ES252CS.5	Understand and implementing hashing techniques.	Analyze

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COURSE OUTCOMES		III SEMESTER (CSE)		AY:2022-23
Course Name	**Faculty Name**	**CO / PO**	**Course Outcomes**	**Taxonomy**
Probability & Statistics	Mr. T. Joseph	3BS305HS.1	To understand concepts of probability and random variables	Apply/ Remember
		3BS305HS.2	Apply various probability distributions to solve practical problems, to estimate unknown parameters of populations	Apply
		3BS305HS.3	Find Mean, variance, moment generating function and statistical parameters of continuous probability distributions	Apply
		3BS305HS.4	To perform a regression analysis and to compute and interpret the coefficient of correlation	Remember/ Anlyze
		3BS305HS.5	Evaluate t-distribution, F-distribution and chisquare distributions. Fitting of straight line, parabola and exponential curves	Apply/ Evaluate
Switching Theory and Logic Design	Mr. G. Arjun	3ES301EC.1	Illustrate the basic principles of Binary Systems, Boolean algebra and Logic Gates.	Understand
		3ES301EC.2	Design & Measure various physical parameters Memory and Programmable Logic & Understand of memories	Apply
		3ES301EC.3	Design & Use various types of Synchronous Sequential Logic & Sequential Circuits. Latches. Flip-flops etc.	Anlyze
		3ES301EC.4	Apply the principles of Analysis Procedure , Design Procedure , for Binary Adder Substractor ,Decimal Subs tractor Binary Multiplier	Remember
		3ES301EC.5	Identify and understand Identify and classify types of Combinational Logic Design or Sequential Logic Design.	Understand
Database Management Systems	Dr. M. Sharada Varalakshmi / Dr. Syed Azahad	3PC301CS.1	Explain Fundamental DBMS Concepts: Students will explain the foundational concepts and principles of database management systems	Understand
		3PC301CS.2	Analyze Relational Database Design: Students will analyze and evaluate different approaches to relational database design.	Anlyze
		3PC301CS.3	Interpret SQL Querying: Students will interpret and explain complex SQL queries and their output.	Anlyze/ Understand
		3PC301CS.4	Discuss Data Integrity and Security: Students will discuss and compare various techniques for ensuring data integrity and implementing security measures.	Evaluate
		3PC301CS.5	Evaluate Query Optimization Techniques: Students will evaluate and compare query optimization techniques used to enhance database performance.	Evaluate

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Discrete Mathematics	Mr. V. Venkat Ram Reddy	3PC302CS.1	Apply mathematical logic to solve problems	Apply
		3PC302CS.2	Illustrate by examples the basic terminology of functions, relations, and sets and demonstrate knowledge of their associated operations.	Understand
		3PC302CS.3	Identify structures of algebraic nature and apply basic counting techniques to solve combinatorial problems.	Apply/ Anlyze
		3PC302CS.4	Formulate problems and solve recurrence relations	Create
		3PC302CS.5	Apply Graph Theory in solving computer science problems	Apply
Computer Organization and Microprocessor	Mrs. Unnati Mohan Khanapurkar / Mrs. J. Sowmya	3PC303CS.1	Recall and apply a basic concept of block diagram of computer (CPU) with Microprocessor processor unit (MPU)	Apply
		3PC303CS.2	Understand the internal architecture and register organization of 8086	Understand
		3PC303CS.3	Apply knowledge and demonstrate programming proficiency using the various addressing modes and instruction sets of 8086	Apply
		3PC303CS.4	Identify and compare different methods for computer I/O mechanisms	Anlyze
		3PC303CS.5	Categorize memory organization and explain the function of each element of a memory hierarchy , Explore cache memory and	Understand, Anlyze
Essence of Indian Traditional Knowledge	Mrs. Deepthi	3MC302HS.1	To outline the history of civilization in Indian context since pre-Vedic times	Understand
		3MC302HS.2	To outline the various schools of Indian Philosophy	Understand
		3MC302HS.3	To demonstrate the diversity in Indian Thought ,Languages , regional culture , dress, living style etc.	Understand
		3MC302HS.4	To Identify the various religious and social reform movements which took place in the past few centuries	Apply
		3MC302HS.5	To classify the wealth of Indian Fine Arts and the diversity associated with it over the length and breadth of the country	Understand
Database Management Systems Lab	Dr. M. Sharada Varalakshmi / Dr. Syed Azahad	3PC351CS.1	Understand Database Concepts: Students will demonstrate an Understand of fundamental concepts in databases, including data models, schemas, and normalization.	Remember
		3PC351CS.2	Design and Implement Databases: Students will be able to design and implement relational databases using appropriate schema design techniques.	Apply
		3PC351CS.3	SQL Querying: Students will write complex SQL queries to retrieve and manipulate data from databases.	Apply
		3PC351CS.4	Data Integrity and Security: Students will apply techniques to ensure data integrity and implement security mechanisms to protect databases from unauthorized access.	Apply/ Anlyze
		3PC351CS.5	Performance Tuning: Students will identify and optimize query and database performance issues using indexing, query optimization, and tuning strategies. Database Application Development: Students will	Anlyze/ Evaluate

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Computer Organization and Microprocessor Lab	Mrs. Unnati Mohan Khanapurkar / Mrs. J. Sowmya	3PC352CS.1	Interpret the principles of Assembly Language Programming, instruction set in developing microprocessor based applications	Understand
		3PC352CS.2	Design and implement programs on 8086 microprocessor	Create
		3PC352CS.3	Understand working of instruction set and addressing modes	Understand
		3PC352CS.4	Explore and implement the interfacing of various peripheral devices with 8086	Apply
		3PC352CS.5	Analyze the function of traffic light controller.	Anlyze
Python Programming Lab	Mr. D. Rajashekar / Mrs.B.Vasavi Sravanthi	3PC353CS.1	Demonstrate solutions to simple computational problems using python programs.	Understand
		3PC353CS.2	Solve complex problems using python functions and control structures.	Apply
		3PC353CS.3	Use Python lists, tuples and dictionaries for representing compound data.	Evaluate
		3PC353CS.4	Develop object-oriented programs with python classes	Apply
		3PC353CS.5	Develop Python programs for GUI applications	Create
Skill Development Course – I (IOT)	Mr. R. Sandeep / Dr. Shaik Khaleel Ahmed	3PW354CS.1	Understand IoT Fundamentals: Students will comprehend the fundamental concepts and components of the Internet of Things (IoT) ecosystem.	Understand
		3PW354CS.2	Sensor Integration: Students will be able to integrate various sensors into IoT systems to collect real-world data.	Apply
		3PW354CS.3	Data Processing and Analysis: Students will process and analyze data collected from IoT devices using appropriate techniques and tools.	Apply/ Anlyze
		3PW354CS.4	Connectivity Protocols: Students will understand and apply different communication protocols for connecting IoT devices to networks.	Apply/ Understand
		3PW354CS.5	IoT Application Development: Students will develop IoT applications using programming languages and platforms.	Create

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COURSE OUTCOMES — III SEMESTER (AI & DS) — AY:2022-23

Course Name	Faculty Name	CO / PO	Course Outcomes	Taxonomy
Probability & Statistics	Mrs.G.Swapna Reddy	1BS305HS.1	To understand concepts of probability and random variables	Apply/ Remember
		1BS305HS.2	Apply various probability distributions to solve practical problems, to estimate unknown parameters of populations	Apply
		1BS305HS.3	Find Mean, variance, moment generating function and statistical parameters of continuous probability distributions	Apply
		1BS305HS.4	To perform a regression analysis and to compute and interpret the coefficient of correlation	Remember/ Anlyze
		1BS305HS.5	Evaluate t-distribution, F-distribution and chisquare distributions. Fitting of straight line, parabola and exponential curves	Apply /Evaluate
Discrete Mathematics	Mrs. Unnati Mohan Khanapurkar / Mrs. J. Sowmya	1PC301AD.1	Apply mathematical logic to solve problems	Apply
		1PC301AD.2	Illustrate by examples the basic terminology of functions, relations, and sets and demonstrate knowledge of their associated operations.	Understand
		1PC301AD.3	Identify structures of algebraic nature and apply basic counting techniques to solve combinatorial problems.	Anlyze, Apply
		1PC301AD.4	Formulate problems and solve recurrence relations.	Create
		1PC301AD.5	Perform tree traversals using preorder, inorder, and postorder traversals and apply these traversals to application problems	Apply
Database Management Systems	Mrs.B.Vasavi Sravanthi / Mr. T.Praveen Kumar	1PC302AD.1	Define, explain and illustrate the fundamental concepts of databases	Understand
		1PC302AD.2	Construct an Entity-Relationship (E-R) model from specifications and to perform the transformation of the conceptual model into corresponding logical data structures.	Apply
		1PC302AD.3	Model and design a relational database following the design principles	Apply
		1PC302AD.4	Develop queries for relational database in the context of practical applications	Apply
		1PC302AD.5	Define, explain and illustrate fundamental principles of data organization, query optimization and concurrent transaction processing.	Understand

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Computer Organization and Microprocessor	Dr. Diana Moses / Mrs. A. Sowjanya	1PC303AD.1	Explain the organization and architecture of a basic computer (CPU) with different instruction formats and addressing modes	Understand
		1PC303AD.2	Describe the internal architecture and register organization of 8086 and the addressing modes in 8086	Understand
		1PC303AD.3	Design and develop Assembly level programs using 8086 microprocessor instruction set	Apply
		1PC303AD.4	Analyze various I/O Interfacing mechanisms and memory organization techniques	Anlyze
		1PC303AD.5	Applies the knowledge of program execution and its internal hardware operations during design and development of Assemble language programs.	Apply
Switching Theory and Logic Design	Mr. D. Suresh	1ES303EC.1	Illustrate the basic principles of Binary Systems, Boolean algebra and Logic Gates.	Understand
		1ES303EC.2	Design & Measure various physical parameters Memory and Programmable Logic & Understand of memories	Apply
		1ES303EC.3	Design & Use various types of Synchronous Sequential Logic & Sequential Circuits. Latches. Flip-flops etc.	Anlyze
		1ES303EC.4	Apply the principles of Analysis Procedure , Design Procedure , for Binary Adder Substractor ,Decimal Subs tractor Binary Multiplier	Remember
		1ES303EC.5	Identify and understand Identify and classify types of Combinational Logic Design or Sequential Logic Design.	Understand
Essence of Indian Traditional Knowledge	Mrs. Deepthi	1MC302HS.1	To outline the history of civilization in Indian context since pre-Vedic times	Understand
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		1MC302HS.3	To demonstrate the diversity in Indian Thought ,Languages , regional culture , dress, living style etc.	Understand
		1MC302HS.4	To Identify the various religious and social reform movements which took place in the past few centuries	Apply
		1MC302HS.5	To classify the wealth of Indian Fine Arts and the diversity associated with it over the length and breadth of the country	Understand
Database Management Systems Lab	Mr. T.Praveen Kumar / Mrs.B.Vasavi Sravanthi	1PC351AD.1	Design and implement a database schema for a given problem	Understand
		1PC351AD.2	Develop the query statements with the help of structured query language.	Apply
		1PC351AD.3	Populate and query a database using SQL and PL/SQL	Apply
		1PC351AD.4	Develop multi-user database application	Apply
		1PC351AD.5	Design and implement E-R model for the given requirements	Understand

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Computer Organization and Microprocessor Lab	Dr. Diana Moses / Mrs. A. Sowjanya	1PC352AD.1	Interpret the principles of Assembly Language Programming, instruction set in developing microprocessor based applications	Understand
		1PC352AD.2	Design and implement programs on 8086 microprocessor	Create
		1PC352AD.3	Understand working of instruction set and addressing modes	Understand
		1PC352AD.4	Explore and implement the interfacing of various peripheral devices with 8086	Analyze
		1PC352AD.5	Analyze the function of traffic light controller.	Analyze
Python Programming Lab	Mr. Shaik Rasool / Mr. P. V. Ramanaiah	1PC353AD.1	Demonstrate solutions to simple computational problems using python programs.	Understand
		1PC353AD.2	Solve complex problems using python functions and control structures.	Apply
		1PC353AD.3	Use Python lists, tuples and dictionaries for representing compound data.	Evaluate
		1PC353AD.4	Develop object-oriented programs with python classes	Apply
		1PC353AD.5	Develop Python programs for GUI applications	Create
Skill Development Course – I (IOT)	Dr. Syed Azahad / Ms. Sana Mateen	1PW354AD.1	Understand IoT Fundamentals: Students will comprehend the fundamental concepts and components of the Internet of Things (IoT) ecosystem.	Understand
		1PW354AD.2	Sensor Integration: Students will be able to integrate various sensors into IoT systems to collect real-world data.	Apply
		1PW354AD.3	Data Processing and Analysis: Students will process and analyze data collected from IoT devices using appropriate techniques and tools.	Apply/ Anlyze
		1PW354AD.4	Connectivity Protocols: Students will understand and apply different communication protocols for connecting IoT devices to networks.	Apply/ Understand
		1PW354AD.5	IoT Application Development: Students will develop IoT applications using programming languages and platforms.	Create

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE OUTCOMES		V SEMESTER (CSE)		AY:2022-23
Course Name	Faculty Name	CO / PO	Course Outcomes	Taxonomy
Software Engineering	Mr. D. Rajashekar / Mr. R. Sandeep	PC501CS.1	Relate an appropriate process model for assessing software project development	Understand
		PC501CS.2	Build necessary requirements for project development eventually composing SRS	Apply
		PC501CS.3	Analyze various life cycle activities like Analysis, Design,	Anlyze
		PC501CS.4	Survey visual models to describe (non-) algorithmic solutions for project build out.	Anlyze
		PC501CS.5	Choose solutions for recurring problems development exerting knowledge on design principles and patterns.	Evaluate
		PC501CS.6	Determine product quality through testing techniques, employing appropriate metrics.	Evaluate
Principles of Programming Languages	Dr. Diana Moses/ Mrs. A. Sowjanya	PC502CS.1	Expresses syntax and semantics in formal notation	Understand
		PC502CS.2	Apply suitable programming paradigm for the application scenario	Apply
		PC502CS.3	Compare the features of various programming languages.	Analyze
		PC502CS.4	Describes the programming paradigms of modern programming languages	Understand
		PC502CS.5	Describes the concepts of ADT and OOP.	Understand
		PC502CS.6	Design programs in different language paradigms and evaluate their relative benefits.	Evaluate
Automata Language & Computation	Mr AAR Senthil Kumar	PC503CS.1	To demonstrate abstract models of computing, including deterministic (DFA), non-deterministic (NFA), Push Down	Understand
		PC503CS.2	Convert among equivalently powerful notations for a language, including among DFAs, NFAs, and regular expressions, and	Create
		PC503CS.3	Determine a language's place in the Chomsky hierarchy (regular, context-free, recursively enumerable)	Evaluate
		PC503CS.4	To solve various problems of Apply normal form techniques, push down automata and Turing Machines	Apply
		PC503CS.5	Interpret the concepts of Undecidability	Understand
		PC503CS.6	Explain why the halting problem has no algorithmic solution	Understand
		PC504CS.1	Demonstrate fundamental Understand of the history of artificial intelligence (AI) and its foundations.	Understand
		PC504CS.2	Apply different searching algorithms to solve a given problem.	Apply

Artificial Intelligence	Ms. Sana Mateen	PC504CS.3	Apply basic principles of AI in solutions that require problem solving, inference, perception, planning, knowledge representation,	Apply
		PC504CS.4	Demonstrate awareness and a fundamental Understand of various applications of AI techniques in intelligent agents, expert systems,	Understand
		PC504CS.5	Demonstrate proficiency in Apply scientific method to models of machine learning.	Apply
		PC504CS.6	Apply various NLP techniques and speech recognition techniques for developing an Application	Apply
Computer Networks	Mrs. G. Saritha / Mrs. B. Sowjanya	PC505CS.1	Explain the functions of the different layer of the OSI and TCP/IP Protocol.	Understand
		PC505CS.2	Evaluate data communication link considering elementary concepts of data link layer protocols for error detection and correction	Evaluation
		PC505CS.3	Interpret the network layer ,routing protocols and analyze how to assign the IP addresses for the given network	Evaluation
		PC505CS.4	Examine the Transport layer services and protocols.	Anlyze
		PC505CS.5	Comprehend the functionality of application layer	Understand
		PC505CS.6	Identify the basic security threats of a network and different types of encryption techniques	Apply
Data Science (Professional Elective – I)	Dr. U. Moulali / Mrs. B. Sowjanya	PE515CS.1	Demonstrate knowledge of statistical data analysis techniques utilized in decision making.	Understand
		PE515CS.2	Develop in depth Understand of the key technologies in data science and business analytics: data mining, machine learning, visualization techniques, predictive modeling, and statistics.	Understand
		PE515CS.3	Gain practical, hands-on experience with R programming languages and Machine Learning Algorithm through coursework	Apply
		PE515CS.4	Apply quantitative modeling and data analysis techniques to the solution of real world problems, communicate findings, and	Apply
		PE515CS.5	Employ cutting edge tools and technologies to analyze Machine Learning algorithms to build machine intelligence.	Evaluation
		PE515CS.6	Demonstrate knowledge of statistical data analysis techniques utilized in decision making by use of team work, leadership skills,	Anlyze
Software	Mr. D. Rajeshekar /	PC551CS.1	Analyze and design software requirements in an efficient manner.	Anlyze
		PC551CS.2	Use open-source case tools to develop software.	Apply
		PC551CS.3	Implement the design, debug and test the code	Create

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Engineering Lab	Mr. R. Sandeep	PC551CS.4	Take up a case study- based project to analyze, plan, design UML models	Anlyze
		PC551CS.5	Design models from the code for Understand the relationships among various subsystems/classes	Evaluate
		PC551CS.6	Documenting the models considering any one example domai	Create
Artificial Intelligence Lab	Ms. Sana Mateen	PC552CS.1	Implement basic programming constructs in Python, such as loops, conditionals, and functions.	Apply
		PC552CS.2	Understand the problem-solving process in artificial intelligence and Design and develop solutions for informed and uninformed search	Apply
		PC552CS.3	Demonstrate reasoning in first order logic using Prolog	Apply
		PC552CS.4	Demonstrate and enrich knowledge to select and apply python libraries to synthesize information and develop supervised learning	Apply
		PC552CS.5	Utilize advanced package like NLTK for implementing natural language processing	Create
		PC552CS.6	Develop a case study in multidisciplinary areas to demonstrate use of AI	Create
Computer Networks Lab	Mrs. G. Saritha / Mrs. B. Sowjanya	PC553CS.1	Use various networking Commands like tcpdump , netstat, ipconfig, nslookup, FTP, TELNET and traceroute	Apply
		PC553CS.2	Implement Iterative and concurrent servers using TCP and UDP.	Create
		PC553CS.3	Analyze the performance of various network protocols using various simulation tools(NS2/NS3/Cisco Packet tracer)	Anlyze
		PC553CS.4	Analyze the performance of various routing algorithms using network simulator tools.	Anlyze
		PC553CS.5	Develop programs using Raw Sockets	Create
		PC553CS.6	Implementation of various Programs using Remote Procedure calls	Create

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COURSE OUTCOMES — **IV SEMESTER (CSE)** — **AY:2022-23**

Course Name	Faculty Name	CO / PO	Course Outcomes	Taxonomy
Optimization & Problem Solving Techniques	Mrs Kalyani	3HS404HS.1	Solve Linear Programming Problems by various methods	Apply
		3HS404HS.2	Finding relationship between primal and dual solution, Economic Interpretation Research	Analyze
		3HS404HS.3	Understand the mathematical tools that are needed to solve optimization problems like Transportation models	Understand
		3HS404HS.4	Understand the Assignment models, replacement models with change moneyvalue considering with time and with out time	Understand
		3HS404HS.5	Understand the theory of Game in operations research at the end students would able to explain applications of Game theory in decision making for conflict	Understand
Data Mining	Dr. U. Moulali	3PC404CS.1	Describes data warehousing, multi-dimensional modeling, OLAP Operations	Understand
		3PC404CS.2	Analyzes of Data warehouse models, schemas, OLAP Operations and comparison of OLAP and OLTP	Apply
		3PC404CS.3	Understands Data Preprocessing, Data mining tasks, Association rule mining, Classification and Clustering	Understand
		3PC404CS.4	Applies Data Preprocessing, Data mining tasks, Association rule mining, Classification and Clustering	Analyze
		3PC404CS.5	Evaluates by analysis of different classification and clustering methods	Evaluating
Operating Systems	Dr.Syed Azahad / Mr. R. Sandeep	3PC405CS.1	Understand Operating System Concepts: Students will demonstrate an Understand of fundamental concepts related to operating systems, including process management, memory management, and scheduling.	Understand
		3PC405CS.2	Analyze Process Management: Students will analyze various aspects of process management, including process creation, scheduling, synchronization, and communication.	Analyze
		3PC405CS.3	Evaluate Memory Management Techniques: Students will evaluate different memory management techniques, including paging, segmentation, and virtual memory.	Evaluating
		3PC405CS.4	Compare CPU Scheduling Algorithms: Students will compare and contrast various CPU scheduling algorithms, Analyze their impact on system performance and fairness.	Analyze / Evaluating
		3PC405CS.5	Design File Systems, Disk Scheduling, and RAID Concepts: Students will design and explain different file systems, understand disk scheduling algorithms, and grasp RAID concepts for data protection and performance improvement.	Create / Understand

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Computer Networks	Mrs. B. Sowjanya / Ms Sana Mateen	3PC406CS.1	Understand the concept of Computer Networks, OSI & TCP/IP reference models and discuss the functionalities of each layer in these models.	Understand
		3PC406CS.2	Apply bandwidth utilization techniques , Framming techniques ,flow and error control protocols and various addressing schemes for an efficient transmission of data through the layers.	Apply
		3PC406CS.3	Analyze various Layered architectures , transmission media , data link control protocols , MAC protocols ,address mapping protocols ,routing protocols and various application layer protocols	Analyze
		3PC406CS.4	Evaluate various routing algorithms such as unicast and multicast routing algorithms.	Evaluate
		3PC406CS.5	Discuss various classes of IP addressing and NAT with examples	Create
Human Values Professional Ethics	Mrs Jr Hephzabah / Mrs AL Jayashree	3HS403HS.1	Understand the Significance of value inputs in a classroom and start Apply them in their life and profession	Understand
		3HS403HS.2	Assess their own ethical values and the social context of problems.	Understand
		3HS403HS.3	Distinguish between values and skills, happiness and accumulation of physical facilities, the Self and the Body, Intention and Competence of an individual, etc.	Understand
		3HS403HS.4	Understand the role of a human being in ensuring harmony in society and nature.	Understand
		3HS403HS.5	Distinguish between ethical and unethical practices and start working out the strategy to actualize a harmonious environment wherever they work.	Understand
Operating Systems Lab	Dr.Syed Azahad / Mr. R. Sandeep	3PC455CS.1	Use Operating System Commands: Students will effectively use various operating system commands for file and process management.	Apply
		3PC455CS.2	Implement Process Synchronization: Students will implement and analyze process synchronization mechanisms to prevent race conditions in concurrent programs.	Analyze
		3PC455CS.3	Develop Memory Management Solutions: Students will develop solutions for memory management tasks, including memory allocation and deallocation.	Create
		3PC455CS.4	Create File Management Programs: Students will create programs to manage files, including reading, writing, and manipulating file data.	Create
		3PC455CS.5	Perform Performance Analysis and Shell Scripting: Students will perform performance analysis of various operating system concepts like process scheduling and memory management, and demonstrate proficiency in shell scripting.	Evaluating

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Computer Networks Lab	Mrs. B. Sowjanya / Ms Sana Mateen	3PC456CS.1	Understand the network services/commands for network troubleshooting and management.	Understand
		3PC456CS.2	Apply appropriate network analysis techniques to capture and examine network traffic using a network protocol analyzer	Apply
		3PC456CS.3	Apply data link layer framing methods and evaluate data integrity using CRC polynomials.	Apply
		3PC456CS.4	Design and simulate network topologies using software tools like Packet Tracer to analyze and optimize network configurations.	Create
		3PC456CS.5	Simulate and analyze the performance of various congestion control algorithms using tools like NS2/NS3/NetSim.	Analyze
		3PC456CS.6	design and implement client-server applications using socket programming, enabling communication and data exchange between	Create
Java Programming Lab	Mrs A.Sowjanya / Mr T.Vijay Kumar	3PC457CS.1	To understand the concept of Object Oriented Programming Systems and use arrays, string Tokenizer.	Understand
		3PC457CS.2	To apply OOPs concepts on packages, inheritance and interface.	Apply
		3PC457CS.3	To implement java programs for exception handling and error free code.	Apply
		3PC457CS.4	To analyze java programs on Method Overloading and Method Overriding.	Analyze
		3PC457CS.5	To implement java programs for multithreading and java collection framework.	Apply
Skill Development Course- II	Mrs Unnati K / Mrs.B. Sowjanya	3PW458CS.1	Explain network technologies and how devices access local and remote networks	Understand
		3PW458CS.2	Describe router hardware and Explain how switching operates in a small to medium-sized business network	Understand
		3PW458CS.3	Design an IPv4 and IPv6 addressing scheme to provide network connectivity for a small to medium-sized business network	Create
		3PW458CS.4	Configure initial settings on a network device using Cisco command-line interface (CLI).	Create
		3PW458CS.5	Implement basic network connectivity between devices.	Apply

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE OUTCOMES — **IV SEMESTER (AI & DS)** — **AY:2022-23**

Course Name	Faculty Name	CO / PO	Course Outcomes	Taxonomy
Operating Systems	Dr. M. Sharada Varalakshmi / Dr.G. Saritha	1PC404AD.1	Explains the concepts of OS aong with an Understand of the process, memory and file managements and also defines the disk structure and I/O sub system	Understand
		1PC404AD.2	Applies the knowledge of process, memory and file managements and implements the respective algorithms to find the efficacy and performance	Apply
		1PC404AD.3	Applies the OS system calls, process synchronization ,page replacement, directory and disk scheduling algorithms	Apply
		1PC404AD.4	Analyzes various scheduling algorithms, inter process communication methods such as Readers -Writers problems	Analyze
		1PC404AD.5	Evaluates the performance of the Disk structure	Evaluating
Statistical Analytics and Computing	Mr. T.Praveen Kumar/ Mr. D. Rajashekar	1PC405AD.1	understand statistical parameters for data analytics	Remember
		1PC405AD.2	use numpy for urganising and Analyze data	Understand
		1PC405AD.3	use pandas for summarizing and analysis of data	Apply
		1PC405AD.4	use of statistical methods for cleaning and preparation of data	Analyze
		1PC405AD.5	performs aggregation of data and understands analysis of time series data	Evaluating
Foundations of Artificial Intelligence	Dr. Shruthi Sriram Korna/ Dr.P.Lavanya	1PC406AD.1	Introduction to Artificial Intelligence, its applications and Problem solving techniques. Also the knowledge representation methods, Planning, Expert systems and their algorithms in AI	Understand
		1PC406AD.2	Analyze different searching algorithms and game playing programs to solve given problems.	Analyze
		1PC406AD.3	Apply basic principles of AI in solutions that require problem solving, inference, perception, planning, knowledge representation, and learning.	Apply
		1PC406AD.4	Demonstrate awareness and a fundamental Understand of various applications of AI techniques in intelligent agents, expert systems, probability, artificial neural networks and other machine learning models.	Evaluating
		1PC406AD.5	To explore the Understand of agent based AI Planning ,logical based agents and Expert systems	Create

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Software Engineering	Mr. M. V. D. S. Krishna Murthy / Mrs. A. Sowjanya	1PC407AD.1	Outline working knowledge of alternative approaches and techniques for each phase of SDLC.	Understand
		1PC407AD.2	Judge an appropriate process model(s) for software project attributes and analyze requirements for project development.	Evaluate
		1PC407AD.3	Discover skills necessary as an independent or as part of a team for architecting a complete software project by identifying solutions for recurring problems exerting	Analyze
		1PC407AD.4	Apply appropriate metrics conceding product quality with testing techniques by Understand the practical challenges associated with the development of a significant software system	Apply
		1PC407AD.5	Apply the software engineering principles in real time project development.	Apply
Human Values and Professional Ethics	Mrs.Sona Lakshmi	1HS403HS.1	Understand the Significance of value inputs in a classroom and start Apply them in their life and profession	Understand
		1HS403HS.2	Assess their own ethical values and the social context of problems.	Understand
		1HS403HS.3	Distinguish between values and skills, happiness and accumulation of physical facilities, the Self and the Body, Intention and Competence of an individual, etc.	Understand
		1HS403HS.4	Understand the role of a human being in ensuring harmony in society and nature.	Understand
		1HS403HS.5	Distinguish between ethical and unethical practices and start working out the strategy to actualize a harmonious environment wherever they work.	Understand
Operating Systems Lab	Dr. M. Sharada Varalakshmi / Mrs.G. Saritha	1PC455AD.1	Evaluate the performance of different types of CPU scheduling algorithms.	Evaluating
		1PC455AD.2	Implement producer-consumer problem, reader-writers problem, Dining philosopher's problem.	Apply
		1PC455AD.3	Simulate Banker's algorithm for deadlock avoidance.	Create
		1PC455AD.4	Implement paging replacement and disk scheduling techniques.	Apply
		1PC455AD.5	Ability to implement inter process communication between two processes.	Apply
Java Programming Lab	Mrs.B.Vasavi Sravanthi/ Mrs. K.Keerthi	1PC456AD.1	To understand the concept of Object Oriented Programming Systems and use arrays, string Tokenizer.	Understand
		1PC456AD.2	To apply OOPs concepts on packages, inheritance and interface.	Apply
		1PC456AD.3	To implement java programs for exception handling and error free code.	Apply
		1PC456AD.4	To analyze java programs on Method Overloading and Method Overriding.	Analyze
		1PC456AD.5	To implement java programs for multithreading and java collection framework.	Apply

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Statistical Analytics and Computing using Python Lab	Mr. T.Praveen Kumar; Mr. D. Rajashekar	1PC457AD.1	install numpy and pandas	Understand
		1PC457AD.2	work with 1D and 2D array in numpy and process data in arrays	Analyze
		1PC457AD.3	explore multi dimensional arrays in numpy and perform conversions	Analyze
		1PC457AD.4	perform statistical analysis using numpy by calculating measures of central tendency,deviation,distance and coorelation	Evaluate
		1PC457AD.5	perform statistical analysis using pandas	Analyze
Skill Development Course - II	Mr. D. Rajashekar / Ms. Sana Mateen	1PW458AD.1	Build simple LANs, perform basic configurations for routers and switches	Create
		1PW458AD.2	Implement IPv4 and IPv6 addressing schemes.	Apply
		1PW458AD.3	Implement VLANs and trunking in a switched network	Apply
		1PW458AD.4	Implement DHCPv4 to operate across multiple LANs and explain how WLANs enable network connectivity.	Apply
		1PW458AD.5	Develop critical thinking and problem solving skills using real equipment and Cisco Packet Tracer.	Apply

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE OUTCOMES — **V SEMESTER (AI & DS)** — **AY:2022-23**

Course Name	Faculty Name	CO / PO	Course Outcomes	Taxonomy
Software Engineering	Mr. M. V. D. S. Krishna Murthy	PC501AD.1	Relate an appropriate process model for assessing software project development.	Understand
		PC501AD.2	Build necessary requirements for project development eventually composing SRS	Apply
		PC501AD.3	Analyze various life cycle activities like Analysis, Design, Implementation, Testing and Maintenance.	Anlyze
		PC501AD.4	Survey visual models to describe (non-) algorithmic solutions for project build out.	Anlyze
		PC501AD.5	Choose solutions for recurring problems development exerting knowledge on design principles and patterns.	Evaluate
		PC501AD.6	Determine product quality through testing techniques, employing appropriate metrics.	Evaluate
Database Management Systems	Dr. U. Moulali	PC502AD.1	Understand the fundamentals of database management	Understand
		PC502AD.2	Design a database using ER modeling approach and Apply normalization to improve the database design.	Create
		PC502AD.3	Identify the process of query optimization and join operations in database.	Anlyze
		PC502AD.4	Apply the knowledge about transaction management, concurrency control and recovery of database systems.	Apply
		PC502AD.5	Understand the relational model and construct queries using relational algebra.	Create
		PC502AD.6	Use the basics of SQL and construct queries using SQL in database creation and interaction	Create
Artificial Intelligence	Dr. P. Lavanya	PC503AD.1	Demonstrate fundamental Understand of the history of artificial intelligence (AI) and its foundations.	Understand
		PC503AD.2	Apply different searching algorithms to solve a given problem.	Apply
		PC503AD.3	Apply basic principles of AI in solutions that require problem solving, inference, perception, planning, knowledge representation.	Apply
		PC503AD.4	Demonstrate awareness and a fundamental Understand of various applications of AI techniques in intelligent agents, expert systems,	Understand
		PC503AD.5	Demonstrate proficiency in Apply scientific method to models of machine learning.	Apply
		PC503AD.6	Apply various NLP techniques and speech recognition techniques for developing an Application	Apply

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Automata Language & Computation	Mr. Ravi Kumar	PC504AD.1	To demonstrate abstract models of computing, including deterministic (DFA), non-deterministic (NFA), Push Down Automata (PDA) and Turing (TM) machine models and their power	Understand
		PC504AD.2	Convert among equivalently powerful notations for a language, including among DFAs, NFAs, and regular expressions, and	Create
		PC504AD.3	Determine a language's place in the Chomsky hierarchy (regular, context-free, recursively enumerable)	Evaluate
		PC504AD.4	To solve various problems of Apply normal form techniques, push down automata and Turing Machines	Apply
		PC504AD.5	Interpret the concepts of Undecidability	Understand
		PC504AD.6	Explain why the halting problem has no algorithmic solution	Understand
Forecasting Techniques	Dr. M. Sharada Varalakshmi	PC505AD.1	Knowledge of basic concepts in time series analysis and forecasting	Understand
		PC505AD.2	Apply the time series models for forecasting and evaluate the limitations of the methods.	Apply
		PC505AD.3	Evaluate, criticize and judge time series regression models.	Evaluate
		PC505AD.4	Analyze ARIMA modeling of stationary and non-stationary time series	Analysing
		PC505AD.5	Build a multivariate times series and other methods of applications	Create
		PC505AD.6	Create and analyze the forecasting techniques using time series models	Create
Web Technologies (Professional Elective – I)	Mr. Shaik Rasool	PE514AD.1	Construct a basic website using HTML and Cascading Style Sheets.	Create
		PE514AD.2	Build dynamic web page with validation using Java Script objects and by Apply different event handling mechanisms.	Create
		PE514AD.3	Develop server-side programs using Servlets and JSP.	Apply
		PE514AD.4	Explain JDBC Connectivity and types of JDBC drivers	Analyse
		PE514AD.5	Construct simple web pages in PHP and represent data in XML	Create
		PE514AD.6	Utilize AJAX and web services to develop interactive web applications	Evaluate
Artificial Intelligence Lab	Dr.P. Lavanya	PC551AD.1	Implement basic programming constructs in Python, such as loops, conditionals, and functions.	Apply
		PC551AD.2	Understand the problem-solving process in artificial intelligence and Design and develop solutions for informed and uninformed search problems in AI	Apply
		PC551AD.3	Demonstrate reasoning in first order logic using Prolog	Apply
		PC551AD.4	Demonstrate and enrich knowledge to select and apply python libraries to synthesize information and develop supervised learning	Apply
		PC551AD.5	Utilize advanced package like NLTK for implementing natural language processing	Create
		PC551AD.6	Develop a case study in multidisciplinary areas to demonstrate use of AI	Create

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Database Management Systems Lab	Dr. U. Moulali	PC552AD.1	Construct a database by using data definition, data manipulation and control languages.	Understand
		PC552AD.2	Demonstrate various integrity constraints and Aggregate functions.	Understand
		PC552AD.3	Implement PL/SQL blocks, procedures, functions, cursors and understand the operation on triggers.	Create
		PC552AD.4	Apply the database concepts, technology and create the relations by specifying primary and foreign keys.	Apply
		PC552AD.5	Ability to design and implement a database schema for given problem.	Analyze
		PC552AD.6	Convert the ER-model to relational tables, populate relational database and formulate SQL queries on data.	Create
MP Lab – Mini Project	Mr. M. V. D. S. Krishna Murthy / Mr. A. Rajesh	PW553AD.1	Interpret a variety of approaches and perspectives of system development.	Understand
		PW553AD.2	Identify the requirements which are relevant to the design of a system.	Apply
		PW553AD.3	Model software design with a set of objects and their relationships using structural modeling.	Apply
		PW553AD.4	Take part in using advanced & behavioral modeling to develop a case study.	Analyzing
		PW553AD.5	Design the activities with the help of behavioral modeling.	Create
		PW553AD.6	Develop components through architectural modeling.	Create

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE OUTCOMES — VI SEMESTER (CSE) — AY:2022-23

	Faculty Name	CO / PO	Course Outcomes	Taxonomy
Compiler Design	Mr. A. A. R. Senthil Kumaar / Mrs.B.Vasavi Sravanthi	PC601CS.1	Describes the compiler structure and phases, and parsing techniques	Understand
		PC601CS.2	Describes SDD's, Intermediate code generator and code generator techniques.	Understand
		PC601CS.3	Developing symbol table, parse tree,3-address code and flow charts for 3- address code.	Apply
		PC601CS.4	Constructing an automata for tokens, parse tree for top down and bottom up approach, LR parsing and translation of expressions.	Apply
		PC601CS.5	Compute basic blocks of 3 address code	Analyze
		PC601CS.6	Writing lexical analyzer generator Lex.	Apply
Design and Analysis of Algorithms	Mrs. Unnati Mohan Khanapurkar / Mr. M. V. D. S. Krishna Murthy	PC602CS.1	Understand to compute the complexities in different algorithmic approaches like brute force, divide and conquer, greedy method, dynamic programming , describe the classes P, NP, NP-Complete problems and graph traversals	Understand
		PC602CS.2	Solve recurrence relation using the master's theorem , substitution method to calculate complexity	Apply
		PC602CS.3	Implement and compare the different methods to generate a minimum cost spanning tree using greedy approach and implement Dijkstra's algorithm	Apply
		PC602CS.4	Solve problems using algorithm design methods such as backtracking and branch and bound, apply the concept of graph colouring to various practical problems	Apply
		PC602CS.5	Analyze the best approach to solve various problems like Knapsack problem, Travelling salesman problem, parallel algorithms and Differentiate deterministic and non deterministic algorithms	Analyze
		PC602CS.6	Determine the best sorting and searching algorithm, optimal Hamiltonian circuit and whether a problem is satisfiable or not and perform asymptotic analysis	Evaluate
Machine learning	Dr Diana Moses / Dr. U. Moulali	PC603CS.1	Describes supervised, unsupervised, semi-supervised and Reinforcement based learning, feaure selection and feature extraction methods and their appropriate evaluation procedures and	Understand
		PC603CS.2	Applies various supervised learning algorithms by Apply them to different scenarios	Apply
		PC603CS.3	Applies various unsupervised learning algorithms by Apply them to different scenarios	Apply
		PC603CS.4	Describes different Semi-supervised and reinforcement learning algorithms to different datasets	Understand
		PC603CS.5	Compares and evaluates different machine learning approaches and infers the best learning model for a given scenario	Analyze
		PC603CS.6	Evaluates different machine learning methods using appropriate evaluation metrics	Evaluate

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Cryptography and Network Security	Mr. Shaik Rasool / Mr. V. Venkat Ram	PC604CS.1	Discuss the basics of network security and cryptography.	Understand
		PC604CS.2	Explain the various standards Symmetric Encryption algorithms used to provide confidentiality.	Apply
		PC604CS.3	Explain the various standards Asymmetric Encryption algorithms to achieve authentication.	Apply
		PC604CS.4	Demonstrate encryption techniques to secure data in transit across network.	Analyze
		PC604CS.5	Explore the knowledge of key exchange protocols.	Analyze
		PC604CS.6	Examine the network security designs using available secure solutions	Evaluate
Data Mining	Dr Khaleel Ahmed / Mrs.Deepthi Joshi	PE625CS.1	Understand the data mining concepts, different data types, Data Objects, Attribute types	Understand
		PE625CS.2	Analyze the Knowledge Discovery from Data techniques, Basic statistical descriptions of data and data similarity and dissimilarity	Analyze
		PE625CS.3	Apply the Data Mining Classification, Decision trees and other algorithms	Apply
		PE625CS.4	Analyze Data Mining Tools for an effective, efficient and scalable data mining.	Analyze
		PE625CS.5	Understand the clustering of data and its methods	Understand
		PE625CS.6	Evaluates the Data Mining applications	Evaluate
O.E-1(Disaster Mitigation)	Mrs.P.Prasanna Kumari	OE601CE.1	Define the various terminology and gain Understand of disaster mitigation and managament	Remember
		OE601CE.2	Classify natural and man-made disasters and their causes and effects	Understand
		OE601CE.3	Understand the disaster management cycle and framework and its applications	Apply
		OE601CE.4	Gain Knowledge of disaster management in India	Analyze
		OE601CE.5	Explain the role of science and technology in disaster managemnet	Evaluate
		OE601CE.6	Create innovative solutions for disaster mitigation and managemeot	Create
Machine learning LAB	Dr Diana Moses / Dr. U. Moulali	PC651CS.1	Describe supervised and unsupervised learning algorithms	Understand
		PC651CS.2	Preprocess datasets to increase the performance of supervised and unsupervised learning algorithms	Apply
		PC651CS.3	Implement Supervised and unsupervised learning algorithms in python	Apply
		PC651CS.4	Interpret the performance of the supervised learning methods using standard performance measures	Apply
		PC651CS.5	Analyze supervised and unsupervised learning algorithms by exploring different visualization tools/plots	Analyze
		PC651CS.6	Evaluate supervised learning algorithms on different datasets and identify the most suited algorithm for a particular dataset	Evaluate

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Design and Analysis of Algorithms Lab	Mr. M. V. D. S. Krishna Murthy / Mrs. Unnati Mohan Khanapurkar	PC652CS.1	Determine whether a graph is connected or not using BFS and DFS methods	Apply
		PC652CS.2	Apply different algorithm design techniques like brute force, greedy and dynamic programming methods.	Apply
		PC652CS.3	Implement the different Backtracking Algorithms	Apply
		PC652CS.4	Compare the performance of sorting algorithms like quick and merge sort	Analyze
		PC652CS.5	Examine to find the minimum cost of spanning tree using Prim's , Kruskal's algorithms and illustrate the different algorithmic techniques to find the shortest path in a given graph	Analyze
		PC652CS.6	Implement various programming paradigms using high level programming language	Apply
Mini Project	Mr K Muralidhar	PW653CS.1	Demonstrate the ability to synthesize and apply the knowledge and skills acquired in the academic program to the real-world problems	Understand
		PW653CS.2	Evaluate different solutions based on Economic and Technical feasibility	Evaluating
		PW653CS.3	Effectively plan a project and confidently perform all aspects of project.	Analyze
		PW653CS.4	Demonstrate effective written and oral communication skills	Understand
		PW653CS.5	Undertake problem identification, formulation and solution	Create
		PW653CS.6	Plan, analyze, design and implement a software project or gather knowledge over the field of research.	Create
Summer Internship	Dr SK Shruthi/ Mr D Srinu	S1671CS.1	Design/ develop a small and simple product in hardware or software	Create,Apply
		S1671CS.2	Build the task or realize a pre-specified target, with limited scope, rather taking up a COMPLEX TASK AND LEAVE IT	Apply
		S1671CS.3	Determine the challenges and future potential for his / her intenship organization in PARTICULAR AND THE SECTOR IN GENERAL	Analyze
		S1671CS.4	Test the theoretical learning in practical situations by accomplishing the tasks assigned during the internship period.	Analyze
		S1671CS.5	Apply various soft skills such as time management, positive attitude and communication skills during performance of the tasks	Apply
		S1671CS.6	analyze the functioning of internship organization and recommend changes for improvement in processes.	Analyze

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE OUTCOMES — **VI SEMESTER (AI & DS)** — **AY:2022-23**

Course Name	Faculty Name	CO / PO	Course Outcomes	Taxonomy
Machine Learning	Dr Diana Moses	PC601AD.1	Describes supervised, unsupervised, semi-supervised and Reinforcement based learning, feaure selection and feature extraction methods and their appropriate evaluation procedures and metrics used for machine learning models	Understand
		PC601AD.2	Applies various supervised learning algorithms by Apply them to different scenarios	Apply
		PC601AD.3	Applies various unsupervised learning algorithms by Apply them to different scenarios	Apply
		PC601AD.4	Describes different Semi-supervised and reinforcement learning algorithms to different datasets	Understand
		PC601AD.5	Compares and evaluates different machine learning approaches and infers the best learning model for a given scenario	Analyze
		PC601AD.6	Evaluates different machine learning methods using appropriate evaluation metrics	Evaluate
Big Data Analytics	Mrs. K.Keerthi	PC602AD.1	Understand the fundamentals of Big Data, its types, and its importance in the current business scenario.	Understand
		PC602AD.2	Demonstrate a high level of comprehension of Apache Hadoop, including its historical background, Hadoop Distributed File	Understand
		PC602AD.3	Analyze data using Unix tools and Hadoop, including Hadoop Streaming, Hadoop archives, and Hadoop I/O.	Analyze
		PC602AD.4	Understand and Apply the concept and working of MapReduce, including the anatomy of a MapReduce job run, scheduling, and	Apply
		PC602AD.5	Analyze the various components of the Hadoop Eco System, including Pig, Hive, Hbase, and Big SQL, by evaluating their services, execution modes, and comparing them with traditional	Analyze
		PC602AD.6	Apply data analytics using R programming, demonstrating proficiency in machine learning methods, including supervised and unsupervised learning as well as collaborative filtering.	Apply
Cloud Computing	Dr. Shruthi Sriram Korna	PC603AD.1	Define Cloud Computing and related concepts and describe the characteristics, advantages, risks and challenges associated with cloud computing.	Understand
		PC603AD.2	Characterize various cloud service models, cloud deployment models	Understand,Apply
		PC603AD.3	Explore virtualization techniques,virtual clusters and resource management	Apply,Analyze
		PC603AD.4	Examine the Data security and its issues in cloud.	Analyze,Evaluati
		PC603AD.5	Understand various database management mechanisms	Evaluating
		PC603AD.6	Illustrate the use of various cloud services available online	Evaluating,Create

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Data Visualization	Mr. D. Srinivas	PE621AD.1	Design and create data visualizations.	Create
		PE621AD.2	Conduct exploratory data analysis using visualization.	Analyze Evaluating
		PE621AD.3	Craft visual presentations of data for effective communication.	Apply Understand
		PE621AD.4	Use Knowledge of perception and cognition to evaluate visualization design alternatives.	Apply
		PE621AD.5	Design and evaluate color palettes for visualization based on principles of perception.	Create Evaluating
		PE621AD.6	Use Knowledge of perception and cognition to plot and visualize design.	Apply Understand
Cyber Security	Dr.Syed Azahad	PE635AD.1	Explain Cybersecurity Fundamentals: Students will demonstrate an Understand of fundamental concepts and principles of cybersecurity.	Understand
		PE635AD.2	Analyze Threats and Vulnerabilities: Students will analyze various threats and vulnerabilities in computer systems and networks.	Analyze
		PE635AD.3	Implement Security Measures: Students will implement security measures to protect computer systems and networks from cyber threats.	Apply
		PE635AD.4	Conduct Cybersecurity Investigations: Students will conduct investigations to identify and mitigate cyber incidents.	Analyze / Evaluating
		PE635AD.5	Design Secure Systems: Students will design computer systems and networks with security as a primary consideration.	Create
		PE635AD.6	Apply Shell Scripting in Security Tasks: Students will use shell scripting to automate security tasks and enhance system defenses.	Apply / Create
O.E-I(Disaster Mitigation)	Mrs.shaik mohammed Imran	OE601CE.1	**Relate** the terms and concepts related to disaster management	Understand
		OE601CE.2	**Demonstrate** the various categories of disasters and their specific characteristics	Understand
		OE601CE.3	**Outline** the emerging risks of disasters like climate change on urban areas	Understand
		OE601CE.4	**Explain** the pre-disaster, during disaster and post-disaster measures and framework	Understand
		OE601CE.5	**Explain** the disaster management acts and frameworks specific to India	Understand
		OE601CE.6	**Illustrate** the various technological applications to aid disaster management	Understand

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Machine Learning Lab	Dr Diana Moses	PC654AD.1	Describe supervised and unsupervised learning algorithms	Understand
		PC654AD.2	Preprocess datasets to increase the performance of supervised and unsupervised learning algorithms	Apply
		PC654AD.3	Implement Supervised and unsupervised learning algorithms in python	Apply
		PC654AD.4	Interpret the performance of the supervised learning methods using standard performance measures	Apply
		PC654AD.5	Analyze supervised and unsupervised learning algorithms by exploring different visualization tools/plots	Analyze
		PC654AD.6	Evaluate supervised learning algorithms on different datasets and identify the most suited algorithm for a particular dataset	Evaluate
BDA Lab	Mrs. K.Keerthi / Mr Shaik Rasool	PC655AD.1	Understand Hadoop working environment	Understand
		PC655AD.2	Work with big data applications in multi node clusters	Apply
		PC655AD.3	Write scripts using Pig to solve real world problems	Apply
		PC655AD.4	Write queries using Hive to analyse the datasets	Analyze
		PC655AD.5	Model and build a recommendation system using Mahout Hadoop and Apply big data and echo system techniques for real world	Create

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE OUTCOMES — **VII SEMESTER** — **AY:2022-23**

Course Name	Faculty Name	CO / PO	Course Outcomes	Taxonomy
Information Security	Mrs. G. Saritha	PC701CS.1	Understand the steps in Security Systems development life cycle (SecSDLC)	Understand
		PC701CS.2	Demonstrate the common threats and attack to information systems	Apply
		PC701CS.3	Understand the legal and ethical issues of information technology	Apply
		PC701CS.4	Identify security needs using risk management and choose the appropriate risk control strategy based on business needs	Analyze
		PC701CS.5	Demonstrate basic knowledge of security frameworks in preparing security blue print for the organization	Apply
		PC701CS.6	Develop network perimeter solution tools such as firewalls, antivirus software and Intrusion Detection techniques and ethical hacking tools.	create
Data Science Using R Programming	Dr. Ramakanta Mohanty / Dr Shaik Khaleel Ahamed	PC702CS.1	Demonstrate knowledge of statistical data analysis techniques utilized in decision making	Understand
		PC702CS.2	Develop in depth Understand of the key technologies in data science and business analytics: data mining, machine learning, visualization techniques, predictive modelling, and statistics.	Understand
		PC702CS.3	Gain practical, hands-on experience with R programming languages and Machine Learning Algorithm through coursework	Apply
		PC702CS.4	Apply quantitative modelling and data analysis techniques to the solution of real world problems, communicate findings, and effectively present results using data visualization techniques.	Analyse
		PC702CS.5	Employ cutting edge tools and technologies to analyse Machine Learning algorithms to build machine intelligence.	Evaluate
		PC702CS.6	Demonstrate knowledge of statistical data analysis techniques utilized in decision making by use of team work, leadership skills, decision making and organization theory.	Create
		PC703CS.1	Understand the problems and challenges associated with distributed systems and analyze IPCs with various architectures implemented.	Understand
		PC703CS.2	Analyze synchronization among processes, distributed algorithms along with the general properties of networked communication necessary through RPC and RMI interfaces.	Analyze

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Distributed Systems	Dr. Shruthi Sriram Korna	PC703CS.3	Understand the importance of security in distributed systems. Analyze with Distributed-coordination based systems to achieve Consistency and Replication.	Understand, Analyze
		PC703CS.4	Differentiate about working of various Distributed file systems and Computing techniques. Apply distributed transaction control algorithms to reduce deadlocks.	Apply
		PC703CS.5	Analyze the Distributed web-based system for concurrency control along with the web service and distributed service oriented architecture, fault tolerance mechanisms.	Analyze
		PC703CS.6	Remember the emerging trends in distributed computing and deduce representations to incorporate Map-reduce model.	Understand
Entrepreneurship (Open Elective – II)	Mr. M. V. D. S. Krishna Murthy	OE701ME.1	Outline Indian Industrial Environment, Entrepreneurship and Economic growth, Small and Large Scale Industries, Types and forms of enterprises	Understand-2
		OE701ME.2	Identify the characteristics of entrepreneurs, Emergence of first generation entrepreneurs, Conception and evaluation of ideas and their sources	Apply-3
		OE701ME.3	Utilize the principles of project formulation	Apply-3
		OE701ME.4	Analysis of market demand, Financial and profitability analysis and Technical analysis.	Anlyze-4
		OE701ME.5	Outline the concept of Intellectual Property Rights and Patents	Understand-2
		OE701ME.6	Value the aspects of Start-Ups	Evaluate-5
Data Science Lab	Dr. Ramakanta Mohanty / Dr Shaik Khaleel Ahamed	PC751ME.1	Show the installation of R Programming Environment.	Understand
		PC751ME.2	Utilize R Data types for developing programs	Apply
		PC751ME.3	Make use of different R Data Structures.	Apply
		PC751ME.4	Develop programming logic using R Packages.	Create
		PC751ME.5	Use R Libraries for Data Visualization	Evaluate
		PC751ME.6	Analyze the datasets using R programming capabilities	Analyze
Distributed Systems Lab	Dr. Shruthi Sriram Korna	PC752ME.1	Write programs that communicate data between two hosts	Create
		PC752ME.2	Configure Network File Systems	Understand
		PC752ME.3	Use distributed data processing frameworks and mobile application tool kits	Apply
		PC752ME.4	Trace Communication protocols in distributed systems	Analyze
		PC752ME.5	Develop an application using a technology from distributed system	Create
		PC752ME.6	Design of algorithm distributed system	Create

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DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Project Work-I	Dr. T Praveen	PW861CS.1	Demonstrate the ability to apply the knowledge and skills acquired in the academic program to the real-world problems	Understand
		PW861CS.2	Evaluate different solutions based on feasibility study	Evaluate
		PW861CS.3	Effectively plan a project.	Anlyze
		PW861CS.4	Demonstrate effective written and oral communication skills	Understand
		PW861CS.5	Undertake problem identification, formulation and execution	Create
		PW861CS.6	Plan, analyze, design,implement and test a software project.	Create

ASSESSMENT COMMITTEE

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Hno Estl, Hyderabad

HOD-CSE

Head of the Department
Department of CSE
Methodist College of Engg & Tech
Abids, Hyderabad.

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

COURSE OUTCOMES — **VIII SEMESTER**

AY:2022-23

Course Name	Faculty Name	CO / PO	Course Outcomes	Taxonomy
PE-VI Mobile Computing	Dr.G.Saritha / Mr. D. Srinivas	PE827CS.1	To provide an introduction to wireless voice and data communication essentials	Understand
		PE827CS.2	To get skilled with several telephone and satellite networks	Apply
		PE827CS.3	To explore the standards and wireless LAN operating principles	Apply
		PE827CS.4	To acquire knowledge about routing and adhoc network principles	Create
		PE827CS.5	To learn more about how to integrate mobile networks with the internet	Create
		PE827CS.6	To acquire the necessary expertise to create mobile applications using wireless application protocols.	Create
OE-III Road Safety Engineering	Mrs Madhuri	PE827CS.1	Explain scenario of road safety in world, accident characteristics, causes, investigation techniques, data collection, analysis and	Understand
		PE827CS.2	Explain Traffic Engineering studies, Characteristics, management measures and their influence on road safety	Understand
		PE827CS.3	Explain road safety in planning, designing, equipment's used for construction during construction, at construction site and devices	Understand
		PE827CS.4	Explain Functioning and factors affecting the traffic Signals, road signs and pavement markings	Understand
		PE827CS.5	Explain road safety audit process, strategies, and ITS	Understand
		PE827CS.6	Make use of Statistical methods for traffic Safety analysis	Apply
Project Work - II	Dr T Praveen Kumar	PE827CS.1	Demonstrate the ability to apply the knowledge and skills acquired in the academic program to the real-world problems	Understand
		PE827CS.2	Evaluate different solutions based on feasibility study	Evaluating
		PE827CS.3	Effectively plan a project.	Analyze
		PE827CS.4	Demonstrate effective written and oral communication skills	Understand
		PE827CS.5	Undertake problem identification, formulation and execution	Create
		PE827CS.6	Plan, analyze, design,implement and test a software project .	Create

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DEPARTMENT OF BUSINESS MANAGEMENT
ACADEMIC YEAR 2022-23 ODD SEMESTER
COURSE OUTCOMES SUMMARY
MBA III SEMESTER - Autonomous

S.No	Semester	Course Code	Course Name	Course Instructor	CO No	Course Outcome
1	III	MB301	Operations Management	Mrs.G.Shiba Rani	CO1	To understand features of operations & production, and types of processes
					CO2	To understand strategic levels in process sequencing, capacity & maintenance management
					CO3	To analyze work study techniques & service management
					CO4	To understand need & importance of material in manufacturing firms
					CO5	To analyze stores functions & inventory models
2	III	MB302	E-Business	Mrs.G.Shiba Rani	CO1	To understand E-business basic development and contribution to society
					CO2	Technologies in E-business, Social consequences
					CO3	Understand the concept of Digital marketing, CRM, Tools
					CO4	To attain knowledge of E-business & operations management
					CO5	To understand the components of distribution system, E-payment
3	III	MB303	Entrepreneurship Development	Mrs.A.Swathi	CO1	To learns the cues and motives of Entrepreneurship
					CO2	To learn more about types of Enterprises and growth
					CO3	Knowledge of entrepreneurship prepares the entrepreneurial bent of mind
					CO4	To understand Problems and perspectives of the entrepreneurship
					CO5	To understand and comprehend on venture capital funds
4	III	MB304	Global Business Management	Dr.S.Sujatha	CO1	To Understand higher level skill in Global business
					CO2	To Analyse changes towards Global business environment
					CO3	To Understand problems of global marketing
					CO4	To Apply strategies of global market entry
					CO5	To attain the knowledge international industries & markets
					CO1	To Understand the concept of Real vs Financial Assets – Investment Decision Process

5	III	MB305E-F-I	Investment Management	Mrs.Roubena Sultana	CO1	Process
					CO2	To Analyze the Fixed Income Securities and their Valuation and Management
					CO3	To Identify the Common Stocks and to Construct the Security Market Indexes
					CO4	To Analyze the Concept of Portfolio – and Construct the minimum Risk Portfolio
					CO5	To Evaluate Performance of Mutual Funds – Problems & Prospects in India
6	III	MB305E-F-II	International Finance	Mrs.Roubena Sultana	CO1	To Understand the Evolution of International Financial System
					CO2	To Classify the Foreign Exchange Market – Distinctive features and its types
					CO3	To Examine the Exchange Rate Determination and Risk Management
					CO4	To Analyze the Multinational Corporate Decisions in Global Markets
					CO5	To Examine the International Tax Environment – Tax implications of foreign enterprises
7	III	MB305E-M-I	Marketing Engineering	Mrs.G.Madhavi	CO1	To apply the concept of digital marketing
					CO2	To understand Internet marketing and Digital marketing mix
					CO3	To understand various social media marketing
					CO4	To understand Digital marketing strategies and mobile marketing
					CO5	To apply new trends in Digital marketing
8	III	MB305E-M-II	Advertisement and Retail Mgt	Dr.S.Sujatha	CO1	To understand the importance of advertising in marketing mix
					CO2	To understand the importance of creativity in ad -campaign
					CO3	To apply the various concepts of Retail marketing & understand recent trends in retail marketing
					CO4	To compare the functions and performance of organized retailed sector to others
					CO5	To understand concepts of CRM &develop retail CRM programmes
9	III	MB305E-HR-I	Industrial Relations & Labour Laws	Mrs.G.Madhavi	CO1	To Understand Industrial relations & Labour laws
					CO2	Analyse Industrial disputes & resolutions
					CO3	To Understand trade unionism & legal framework
					CO4	To Summarise the labour legislation in India
					CO5	To Summarise the important provisions of wage legislation & women
10	III	MB305E-HR-II	Organisation Development	Mr.C.Shyam Sunder	CO1	in organization for development.
					CO2	To develop and enhance conceptual , behavioral skills to implement system wide organization change efforts.
					CO3	To explore about managing the organization development process.
					CO4	Enhance self-awareness and understanding of group process in order to perform more effectively in their roles.

					CO5	Examine systematically the techno structural , strategic interventions and sustainability that occurs during organization change efforts.

Assessment Coordinator

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DEPARTMENT OF BUSINESS MANAGEMENT
ACADEMIC YEAR 2022-23 ODD SEMESTER
COURSE OUTCOMES SUMMARY
MBA I SEMESTER - Autonomous

S.No	Semester	Course Code	Course Name	Course Instructor	CO No	Course Outcome
1	I	MB101C	Management & Organizational Behaviour	Mrs.A.Swathi	CO1	Understand the principles and practices of management and specifically the nature of management functions, roles and skills.
					CO2	Understand the process of decision making and its models.
					CO3	To inculcate knowledge on personality, perception and theories of motivation.
					CO4	Analyze the behavior of individual and groups in organizations in terms of organizational behavior theories, models and concepts.
					CO5	To understand the concept of organization design, organization climate, organization culture, various aspects of Organization Behavior and importance of
2	I	MB102C	Accounting for Management	Mrs.Roubena Sultana	CO1	To Understand the Nature and Scope of Financial Accounting
					CO2	To Determine the Trading, Profit & Loss A/c and Balance Sheet
					CO3	To Analyze the Financial Statements – Classify the Ratios
					CO4	To Categorize the Cash Flow Statement – the utility of Cash Flow Statements
					CO5	To Classify different Costs – Fixed & Variable Costs – Break –Even Point & P/V Ratio
3	I	MB103C	Marketing Management	Mr.C.Shyam Sunder	CO1	Evaluate the relevance of marketing concepts impact on environmental change while designing marketing plans, strategies and practices
					CO2	Develop marketing strategies based on segmentation, target marketing and positioning by examining consumer behaviour.
					CO3	Ability to summarize the unique marketing mixes and selling propositions for specific product offerings and pricing objectives.
					CO4	Develop and apply knowledge to create integrated marketing communication strategies and distribution strategies.
					CO5	Ability to analyse marketing control techniques and can understand strategies related to rural, global and services marketing areas.

4	I	MB104C	Statistics for Management	Mr.J.Rama Krishna	CO1	Understand the concept and applications of probability in the management
					CO2	To classify different types of random variables and probability distributions
					CO3	Understand the concept of sampling theory and develop the solutions of problems in management
					CO4	Apply small sample tests and the ANOVA test for specified population problems
					CO5	To determine the coefficient of correlation and regression, use the concept of correlation and regression analysis
5	I	MB105C	Business Law & Ethics	Dr.S.Sujatha	CO1	Demonstrate an understanding of the legal aspects of business.
					CO2	Apply basic legal knowledge to business transactions.
					CO3	Examine the importance of the legal system with respect to business.
					CO4	Integrate the concept of ethics & value based considerations in business.
					CO5	To Understand the role of managers in the firms
6	I	MB106C	IT Applications for Management	Mr.D.Srinu	CO1	To summarize the concepts and classify the categories of Information systems.
					CO2	To apply the technology infrastructure of computer hardware & software.
					CO3	To apply the basic knowledge of database connectivity.
					CO4	To apply different types of inter-organizational systems.
					CO5	To take measures to solve the problems relate to information security and laws.
7	I	MB107E.a	Financial Markets & Services	Mrs.G.Shiba Rani	CO1	To understand & differentiate between financial markets & financial services
					CO2	Understand Merchant banking and its functions
					CO3	To summarize the concept of Leasing and Hire purchase concept
					CO4	To acquire & understand Insurance fundamental principles, characteristics & trends
					CO5	To Understand the concept & functions of Factoring and concept of Credit rating agencies
8	I	MB107E.b	Managerial Communication	Mrs.A.Swathi	CO1	To understand about the role and process of communication.
					CO2	To get knowledge about non verbal communication , negotiation and its approaches.
					CO3	To enhance presentation skills and methods of speaking, analyzing the audience.
					CO4	To create a good report and drafting different types of Business letters.
					CO5	To maintain better relations with media and understand about crisis communication.

Assessment Coordinator

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DEPARTMENT OF BUSINESS MANAGEMENT
ACADEMIC YEAR 2022-23 EVEN SEMESTER
COURSE OUTCOMES SUMMARY
MBA II SEMESTER - Autonomous

S.No	Semester	Course Code	Course Name	Course Instructor	CO No	Course Outcome
1	II	MB201C	Human Resource Management	Mrs.A.Swathi	CO1	organizations
					CO2	Examine current issues, trends, practices, and processes in HRM
					CO3	Simplify employee performance management and organizational effectiveness
					CO4	Problem-solve human resource challenges
					CO5	Develop effective written and oral communication skills
2	II	MB202C	Financial Mangement	Mrs.Roubena Sultana	CO1	To Classify the Nature and Scope of Finance Function
					CO2	To Evaluate and Appraise the Investment Decisions
					CO3	To Identify the different Sources of Finance
					CO4	To Classify the Current Assets and Examine the major theories of Dividends
					CO5	To Outline Corporate Restructuring and Corporate Governance
3	II	MB203C	Operations Research	Mrs.I.Sowjanya	CO1	of operations research and apply the graphical method to find optimal
					CO2	To apply the primal and dual relationships by adapting to other models.
					CO3	To apply different application areas of operations research like transportation problem, assignment model and to solve them.
					CO4	To identify the resources project and generate a plan and work schedule.
					CO5	To analyze the usage of game theory, Queuing theory and simulation for solving business problems.
4	II	MB204C	Total Quality Management	Mrs.G.Shiba Rani	CO1	To understand the fundamental principles of TQM
					CO2	To choose appropriate TQM Tools for improving processes & quality
					CO3	To choose appropriate TQM Technique for improving processes & quality
					CO4	To understand concept of six sigma & apply six sigma problem solving tools

					CO5	To construct TQM in service sectors
5	II	MB205C	Business Research Methods	Mrs.G.Madhavi	CO1	To categorise the methods involved in analyzing the business outcomes .
					CO2	To demonstrate the ability to collect data from various sources for the purposes of research.
					CO3	To Classify the quality of data collected by analysis , scaling and probability
					CO4	To be able to evaluate by cause and effect the correlation and a mathematical expression by regression of the data
					CO5	To be able to apply the Business research Methods for the solution of problems in practise.
6	II	MB206C	Economics For Managers	Mrs.G.Madhavi	CO1	To Understand the role of managers in the firms
					CO2	Understand the demand & supply conditions of the firm
					CO3	To Interpret production function, economies & diseconomies of scale, cost analysis
					CO4	To understand market structure & pricing practices
					CO5	Understand the concept of National income, Inflation & its effect on trade
7	II	MB207E.a	Innovation Management	Mr.C.Shyam Sunder	CO1	Gain the conceptual clarity on the basic concepts of R & D
					CO2	Define budget allocations for R & D projects in organization.
					CO3	Understand effective R & D Management and evaluating progress
					CO4	Explain innovation management and importance of innovation
					CO5	Learn about innovation within the organization and impact of IT on innovation
8	II	MB207E.b	Customer Relationship Management	Mrs.A.Swathi	CO1	management and gives a real world understanding of CRM. **Understand**
					CO2	To Analyse, acquaint, understand and describe a customer relationship management application.
					CO3	To provide real-time insights into the successfully implemented CRM in various organizations .
					CO4	To Create Awareness in implementation of CRM by understanding the end users and to retain their customers
					CO5	To study how CRM allowed for decision making, evolved relationships to a higher level of understanding & target market users.

Assessment Coordinator

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DEPARTMENT OF BUSINESS MANAGEMENT
ACADEMIC YEAR 2022-23 EVEN SEMESTER
COURSE OUTCOMES SUMMARY
MBA IV SEMESTER - Autonomous

S.No	Semester	Course Code	Course Name	Course Instructor	CO No	Course Outcome
1	IV	MB401C	Strategic Management	Dr.S.Sujatha	CO1	Understand the importance, scope and concept of Strategy & Strategic Management Process.
					CO2	Formulate the Vision, Mission statements and define goals, objectives for organizations.
					CO3	Analyze role of environment for strategy formulation.
					CO4	Determine the alternatives for strategy formulation & sustenance.
					CO5	Identify strategy implementation procedures coupled with corporate ethics.
2	IV	MB402C	Business Intelligence	Mrs.G.Madhavi	CO1	To Understand the History, Evolution, Styles & Benefits of Business Intelligence
					CO2	To Classify the Data Warehousing and Data Mining Approaches and Applications
					CO3	To Compare the Business Performance Measurement (BPM) and Business Intelligence
					CO4	To Classify Business Analytics and Data Visualization
					CO5	To Summarize Business Intelligence Implementation
3	IV	MB403C	Supply Chain Management	Mrs.G.Shiba Rani	CO1	Understand basic and fundamentals of supply chain management
					CO2	To summarize logistics management & Inventory management
					CO3	Understand the role of Transportation & Warehousing
					CO4	Analyze role of Information technology in SCM
					CO5	Understand key operation aspects like Distributors, HR in Supply Chain
					CO1	To Understand the concept of Risk, and Illustrate Risk Management Process
					CO2	To Construct the Value at Risk (VaR) and Cash Flow at Risk (

4	IV	MB404C-F-I	Financial Risk Management	Mrs.A.Brundavani	CO3	To Identify the Techniques and Tolls of Risk Management – Forwards and Future Contracts
					CO4	To Compare the different types of Swaps – Interest Rate Swaps & Currency Swaps
					CO5	To Apply the Techniques and Tools of Risk Management – Options on Stock Indices
5	IV	MB404C-F-II	Banking & Insurance	Mrs.G.Shiba Rani	CO1	To understad the structure of banking & insurance business in India.
					CO2	To examine the products & services in Banking & Insurance.
					CO3	To identify the regulation & innovations in the banking system.
					CO4	To evaluate the potential of Insurance business in India.
					CO5	To propose diversified, customised and advanced banking and insurance services to the customers.
6	IV	MB404C-M-I	Buyer Behaviour	Mrs.G.Madhavi	CO1	To understand how major factors influences in buyer behaviour
					CO2	To apply theories of buying behaviour in learning principles and their marketing implications
					CO3	To understand the impact of culture on buyer behaviour
					CO4	To understand post purchase behaviour of consumer
					CO5	To apply traditional and contemporary models of consumer behaviour
7	IV	MB404C-M-II	Services Marketing	Dr.S.Sujatha	CO1	To apply concepts for effective management in service marketing
					CO2	To understand customer expectations through market research and consumer behaviour in services
					CO3	To apply marketing mix in services marketing
					CO4	To understand product differentiation ,pricing,promotion,distribution of services
					CO5	To apply various service models in different sectors
8	IV	MB404C-HR-I	Leadership & Change Management	Mr.C.Shyam Sunder	CO1	Understand the basic concepts of leadership and personality types.
					CO2	Acquire knowledge and understanding of different leadership styles and models.
					CO3	Define various change process models for organizational change.
					CO4	Familiarize with the drivers, methods and model of change.
					CO5	Define various methods and models of change management.
					CO1	and the essentials of performance management
					CO2	The student will learn the nature and complexity of performance management & able to design one that is suitable to a business

9	IV	MB404C-HR-II	Performance Management	Mrs.A.Swathi	CO3	To build performance plans in respect of employees and develop a system of counseling for improving their performance
					CO4	To experiment with different methods of performance appraisals and involve employees towards managing their performances
					CO5	To take part in teams and link their performances with reward systems and to ensure achievement of organizational goals successfully

Assessment Coordinator

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DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2022-2023 ODD SEMESTER

COURSE OUTCOMES SUMMARY

Semester : III SEM Autonomous

S.no	Semester	Course	Course Name	Course Instruct	COURSE OUTCOMES	
					Co No	Course Outcome
1	III	2BS303HS	Mathematics-III	Mr. Rama Krishna	CO1	Find the solution of algebraic and transcendental equations using numerical methods
					CO2	Apply numerical techniques to solve ordinary differential equations and definite integrals
					CO3	Apply numerical methods to interpolate values and fit different curves from given data
					CO4	Find solutions of first order linear and nonlinear partial differential equations.
					CO5	Apply the solution of partial differential equations to physical problems
2	III	2HS302HS	Managerial Economics & Financial	Mr. Shyam Sunder	CO1	Determine the responsibilities & decision making in the organization
					CO2	Describe various factors influencing demand & price in market
					CO3	Explain the principles of accounting and shall be able to prepare & solve problems in journal, ledger, trial balance & final accounts
					CO4	Analyse the financial statement and performance of the company
					CO5	Explain the capital structure & to take decision on selection of projects and long-term investment
3	III	2ES301CS	Programming for problem solving	Mrs. Shaziya Jabeen	CO1	Formulate simple algorithms for arithmetic and logical problem
					CO2	Implement conditional branching, iteration and recursion
					CO3	Decompose a problem into functions and synthesize a compete program using divide and conquer approach
					CO4	Use arrays, pointers, structures and file management to solve real world problems
					CO5	Apply programming to solve matrix addition and multiplication problems and searching and sorting problems
4	III	2PC301CE	Building Materials and Concrete Technology	Ms. P. Jyotsna	CO1	Differentiate between various building materials i.e., both conventional and smart building materials
					CO2	Illustrate the properties of concrete materials and procedures of their physical tests i.e., Cement, Aggregates, Adixtures, Reinforcing steel.
					CO3	Explain the process of plastering, pointing and damp proofing and mortars
					CO4	Demonstrate the properties of fresh Concrete & Hardened Concrete and understand the procedure for testing of concrete materials and on fresh and hardened concrete as per IS code
					CO5	Calculate the concrete mix proportions according to requirements of IS, BIS and ACI codes. Illustrate the characteristics of concrete.

S.no	Semester	Course	Course Name	Course Instruct	COURSE OUTCOMES	
					Co No	Course Outcome
5	III	2PC302CE	Solid Mechanics	Mr. P. Srikanth	CO1	APPLY the fundamental concepts of stress and strain in the analysis and design of axially loaded members
					CO2	ANALYSE the determinate beams to construct SFD and BMD
					CO3	DETERMINE the bending and shear stress distribution in beams and also the stresses in members subjected to combined axial and bending stresses.
					CO4	ANALYSE the compound stresses at a point and evaluate principal stress and EVALUTE stresses in cylindrical pressure vessels
					CO5	EVALUATE the stresses of circular members subjected to torsion and analyze different types of springs.
6	III	2PC303CE	Surveying	Mr. Shaik Mohammad Imran	CO1	Explain the concepts, working principles involved in basic as well as modern surveying equipments & technologies and also defines the concepts of horizontal and vertical curves.
					CO2	Apply the knowledge of surveying & levelling in calculating lengths, bearings, areas, Volumes, reduced levels, elevation differences, plot of a ground & scale of photographs.
					CO3	Apply the knowledge of theodolite and trigonometry in finding horizontal and vertical angles, heights of inaccessible points
					CO4	Make use of knowledge of curves concept in surveying, in setting out both horizontal and vertical curves for the purpose of roadway and railway alignment
					CO5	Analyse the amount of closing error of a traverse after finding out the omitted measurements in traverse and compute the missing data
7	III	2MC302HS	Essence of Indian Traditional	Mrs. Deepthi	CO1	Understand the concepts of Indian culture and Traditions and their importance
					CO2	Distinguish the Indian languages and literature
					CO3	Learn the philosophy of ancient, medieval and modern India.
					CO4	Acquire the information about the fine arts in India
					CO5	Know the contribution of scientists of different eras, interpret the concepts and the importance to protect intellectual property of the nation
8	III	2ES351CS	Programming for Problem Solving Laboratory	Mrs. Shaziya Jabeen	CO1	Choose appropriate data type for implementing programs in C language
					CO2	Design and implement modular programs involving output operations, decision making and looping constructs
					CO3	Apply the concept of arrays, pointers for implementing programs and string handling
					CO4	Design and implement programs to store data in structures and files
					CO5	Develop confidence for self education and ability for lifelog learning need for computer languages
		CE	boratory	hammad	CO1	Demonstrate the working principles and handling procedures of basic surveying instruments like chain, cross staff in finding out linear measurements
					CO2	Demonstrate the levelling instruments and apply the knowledge of levelling in finding out the reduced levels of ground

S.No	Semester	Course	Course Name	Course Instruct	COURSE OUTCOMES	
					Co No	Course Outcome
	III	2PC351CE	Surveying Lab	Mr. Shaik Md Imran	CO3	Demonstrate the working principles and handling procedures of theodolite, total station and Hand-held GPS
					CO4	Make use of surveying equipment in computing lengths, areas & bearings of given field work
					CO5	Apply the knowledge of trigonometrical levelling in finding out reduced levels of elevated objects which are both accessible and inaccessible points
10	III	2PC352CE	Concrete Technology Laboratory	Mrs. P. Prasanna Kumari & Mr. P. Srikanth	CO1	Determine the properties of cement of given cement sample and assess its suitability for use in construction
					CO2	Determine the properties of F.A. and C.A. samples to assess their suitability for use in construction works
					CO3	Determine the properties of C.A. samples to assess their suitability for use in construction work
					CO4	Measure the workability of concrete and recommend its suitability for structural works
					CO5	Determine the compressive strength of concrete cubes
					CO6	Conduct destructive and non-destructive tests to evaluate the quality and strength of concrete

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DEPARTMENT OF CIVIL ENGINEERING

ACADEMIC YEAR 2022-2023 EVEN SEMESTER

COURSE OUTCOMES SUMMARY

Semester : IV SEM Autonomous

S.no	Semester	Course Code	Course Name	Course Instructors	COURSE OUTCOMES	
					Co No	Course Outcome
1	IV	2HS403HS	Human Values and Professional Ethics	Mrs. A. L. Jayashree	CO1	Understand the significance of value inputs in a classroom and start applying them in their life and profession.
					CO2	Assess their own ethical values and the social context of problems.
					CO3	Distinguish between values and skills, happiness and accumulation of physical facilities, the Self and the Body, Intention and Competence of an individual etc.
					CO4	Understand the role of a human being in ensuring harmony in society and nature.
					CO5	Distinguish between ethical and unethical practices and start working out the strategy to actualize a harmonious environment wherever they work.
2	IV	2ES403CS	Python Programming	Dr. Shaik Khaleel Ahamed	CO1	Examine Python syntax and semantics and be fluent in the use of python flow control and functions.
					CO2	Demonstrate proficiency in handling strings and file systems
					CO3	Create, run and manipulate python programs using core data structures like lists, tuples and dictionaries
					CO4	Interpret the concepts of object-oriented programming as used in python
					CO5	Created and animate a variety of shapes and develop an application with graphical user interface (GUI)
					CO6	Implement exemplary applications related to network programming, web services and databases in python
3	IV	2PC404CE	anics of Materials and Structures	Mr. P. Srikanth	CO1	Calculate the deflections of determinate beams due to transverse loads by various methods
					CO2	Evaluate the buckling/critical load of column for various end conditions using different theories.
					CO3	Analyse the beams subjected to unsymmetrical bending and compute the location of shear center for various sections.
					CO4	Determine the static and kinematic indeterminacy of indeterminate structures and analyse propped cantilever, fixed and continous beams usinf force method of analysis.

S.no	Semester	Course Code	Course Name	Course Instructors	COURSE OUTCOMES	
					Co No	Course Outcome
			Mech		CO5	Apply energy principle and various energy methods to analyse beams, indeterminate trusses and frames to find deflections and redundant forces.
4	IV	2PC405CE	Design of Reinforced Concrete Structures	Mrs. M. Mary Soujanya	CO1	Define the characteristic strength of materials and partial safety factors for load and materials & Explain the design philosophies of working stress method and Limit state method
					CO2	Apply the key concepts, theories and mathematical fundamentals to analyze and design the structural elements.
					CO3	Analyze the moment capacity of structural elements & design the structural elements for flexure, shear and torsion
					CO4	Examine the serviceability of structural elements
					CO5	Design simple structural members to be able to safely resist bending, shear, torsion, deflection and compression within the imposed factors of safety.
5	IV	2PC306CE	Fluid Mechanics	Dr. Bandita Naik	CO1	Illustrate the various properties of fluids and compute pressure using manometers
					CO2	Relate types of flows with the corresponding mathematical equations
					CO3	Apply principles of fluid Statics , dynamics and kinematics to make flow measurement calculations
					CO4	Make use of different fluid flow measuring devices.
					CO5	Apply dimensional analysis and model studies to fluid flow problems.
6	IV	2PC307CE	Hydrology	Ms. SHiphali Preiti Aind	CO1	Explain the interaction among various processes in the hydrologic cycle.
					CO2	Estimate net evaporation rate from waterbodies with free surface bodies
					CO3	Develop the rainfall- runoff relationship
					CO4	Analysis drawdown and yield in aquifers
					CO5	Design the flood for Water Resources Structures
7	IV	2MC403HS	Constitution of India	Ms. Deepthi	CO1	Have a general knowledge and back ground about the Constitution of India and its importance
					CO2	Will distinguish and understand the working of the Central, state and provincial levels of administration.
					CO3	Will be conscious about the fundamental duties, responsibilities and rights as an ideal citizen of India
					CO4	Will be able to perceive and interpret the functioning and distribution of resources between Centre and state.
					CO5	Have an awareness and relate to the existing hierarchy of the social structure, election process and Grievance redressal in a democracy.

S.no	Semester	Course Code	Course Name	Course Instructors	COURSE OUTCOMES	
					Co No	Course Outcome
8	IV	2PC453CE	Mechanics of Materials Laboratory	Mrs. M. Mary Soujanya	CO1	Appraise the behaviour of a ductile material under direct tension test, in addition to gaining knowledge on elastic properties of the material.
					CO2	Identify the hardness of various metals like brass, copper, aluminum etc
					CO3	Assess the flexural properties of beams (simply supported, cantilever and fixed) of different materials like wood, steel, copper, aluminum etc
					CO4	Interpret the application of tension and compression springs in practice to understand the properties like stiffness, capacity, shear modulus etc. of the springs
					CO5	Examine the impact properties of the materials and also energy absorption.
9	IV	2PC454CE	Building Drawing and Drafting Laboratory	Mr. Mohd Shahed Ali/ Ms. P. Jyotsna	CO1	Illustrate the basic principles of building planning and drawings as per codal provisions.
					CO2	Apply the tools of AUTOCAD software to prepare structural drawings of various building components.
					CO3	Develop plan, elevation and sectional drawings of residential buildings in AutoCAD software.
					CO4	Develop isometric views of Single storey.
					CO5	Develop isometric views of Double storey residential buildings.
10	IV	2ES453CE	Python Programming Lab	Dr. Shaik Khaleel Ahamed	CO1	Develop solutions to simple computational problems using Python programs
					CO2	Solve problems using conditionals and loops in Python
					CO3	Develop Python programs by defining functions and calling them
					CO4	Use Python lists, tuples and dictionaries for representing compound data
					CO5	Develop Python programs for GUI applications

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DEPARTMENT OF CIVIL ENGINEERING
ACADEMIC YEAR 2022-2023 ODD SEMESTER
COURSE OUTCOMES SUMMARY

Semester : V SEM

S.no	Semester	Course Code	Course Name	Course Instructors	COURSE OUTCOMES	
					Co No	Course Outcome
1	V	PC409CE	Theory of Structures	Mr. P. Srikanth	CO1	DIFFERENTIATE the difference between statically determinate and indeterminate structures.
					CO2	ANALYSE the given continous beam using slope deflection method, moment distribution method and Kani's method.
					CO3	ANALYSE the given portal frame using slope deflection method, moment distribution method and Kani's method.
					CO4	ANALYSE the given structure to draw SFD and BMD.
					CO5	ANALYSE the INFLUENCE LINE DIAGRAMS for the given simple beam with constant loading.
					CO6	ANALYSE the INFLUENCE LINE DIAGRAMS for the given simple beam and trusses with moving loads.
2	V	PC410CE	Soil Mechanics	Ms. M. Madhuri	CO1	Classify the soil and interpret their index properties.
					CO2	Explain capillarity and laboratory procedure to determine the permiability parameters. Calculate the capillarity and permeability parameters of soils.
					CO3	Explain the stresses in the soil and draw to flow net to compute the seepage quantity in soils.
					CO4	Illustrate the mechanisms of the process of compaction and consolidation of soils, and the laboratory procedures to determine their characteristics
					CO5	Analyse the soils for their shear strength and predict the stability of slopes.
					CO6	Explain the concept of Quick Sand Phenomena and its remedial measures
3	V	PC411CE	Concrete Technology	Mrs. Mary Soujanya	CO1	Explain the properties of cement and admixtures as per IS code.
					CO2	Explain the properties of aggregates as per IS code
					CO3	Illustrate the properties of fresh Concrete.
					CO4	Examine the properties of Hardened Concrete
					CO5	Use the codal provisions for the preparing required concrete mix.
					CO6	Demonstrate specific application of special concretes
4	V	PC412CE	Water Resource Engineering	Dr. Bandita Naik	CO1	Illustrate different types of storage works , fixation of different levels of reservoirs and evaporation reduction techniques (LWL, FRL, MWL).
					CO2	Distinguish between the types of dams, irrigation tanks, spillways and spillway crest gates
					CO3	Design different types of Storage works Applying
					CO4	Analyze the structural stability of different storage works
					CO5	Apply the Design of regulatory systems
					CO6	Select the factors leading to the assessment of waterpower potential and layout of a hydel plant
			al		CO1	Identify the sources of water and estimate the water quality

S.no	Semester	Course Code	Course Name	Course Instructors	COURSE OUTCOMES	
					Co No	Course Outcome
5	V	PC413CE	Environmental Engineering	Ms. Shipali Preeti Aind	CO2	Determine the water demand for different cities and Design the water supply network
					CO3	Use the basic information in designing the components of water treatment plant
					CO4	Determine the sewage flow using various approaches
					CO5	Explain the knowledge on Self purification of streams, BOD and COD
					CO6	Apply the basic concepts to design of septic tank, activated sludge tank and its components
6	V	PC414CE	Construction Engineering and Management	Mrs. Prasanna Kumari	CO1	Understand the Construction industry, construction practices and management systems to construction projects
					CO2	Apply various network theories such as PERT and CPM in construction management to construction projects
					CO3	Analyze cost time analysis, resource optimization techniques and apply project management software for resouce optimization in construction projects.
					CO4	Understand various types of contract documents, tenders, detailed project reports and labour acts in construction practice.
					CO5	Apply optimization techniques and linear programming in construction practice.
7	V	PC455CE	Soil Mechanics Lab	Mr. D. Bharath Naik	CO1	Determine the Index properties of Soil
					CO2	Determine the Atterberg's limits of fine grained Soil
					CO3	Identify and classify the soil
					CO4	Calculate the Permeability of Soils
					CO5	Determine the Engineering properties of Soil
					CO6	Determine the Shear Parameters of Soil by Direct Shear Test
8	V	PC456CE	Concrete Technology Lab	Mrs. Shaista Begum & Mrs. Mary Soujanya	CO1	Outline the importance of cement,aggregates and their properties
					CO2	Evaluate the different properties of cement
					CO3	Assess the different properties of Fine Aggregate
					CO4	Assess the different properties of Course Aggregate
					CO5	Evaluate the workabilty on fresh concrete
					CO6	Analyze the compressive strength of hardened concrete
9	V	PC457CE	Environmental Engineering Lab	Dr. K. Santosh Kumar & Ms. Shipali Preeti Aind	CO1	Determine physical, chemical and biological characteristics of water and wastewater
					CO2	Outline the procedure for preparations of stock and standard solutions,their handling and storage
					CO3	Determine break - point chlorination
					CO4	Assess the suitability of water for drinking, irrigation purpose and concreting works
					CO5	Determine the BOD, COD and bacterial density of portable water
					CO6	Assess the quality of water and wastewater

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DEPARTMENT OF CIVIL ENGINEERING
ACADEMIC YEAR 2022-2023 EVEN SEMESTER
COURSE OUTCOMES SUMMARY

Semester : VI SEM

S.No	Semester	Course	Course	Course	COURSE OUTCOMES	
					Co No	Course Outcome
1	VI	HS304BM	Professional Practice Ethics	Mrs. Rubena Sultana	CO1	Explain the concepts, roles ,norms,bodies,regulations,contract Act and standards of Professional Practice.
					CO2	Apply the knowledge of professional,Business,Corporate, Engineering,Personal,Code of Ethics ,Professionalism,Gift vs Bribery, Whistle blowing.
					CO3	Apply the knowledge of the Arbitration ,Agreements,Types,Challenge,Court assistance,Conciliation,Lok Adalats.
					CO4	Make use of knowledge of Labour ,Related Laws,Sub contract,Industrial Dispute Act,Workmen's Compensation Act,RERA Act.
					CO5	Explain the conceptsof Intellectual property,Copyrights,Trademarks,Patents and Design ,Law and policy considerations.
2	VI	PC415CE	Design of Steel Structures	Mrs. Shaista Begum	CO1	Explain the composition of structural steel and IS codal provisions and load combinations implemented in the design codes for steel structures
					CO2	Analyze and design simple connections between structural members including riveted and welded connections.
					CO3	Analyze and Designof tension members
					CO4	Analyze and Design of compression members and beams
					CO5	Design of Gusset base and column bases
					CO6	Evaluate the loading on roof trusses and design of purlins
3	VI	PC416CE	Transportation Engineering	Ms. M. Madhuri	CO1	Demonstrate the basics elements of Highway, Pavement, Railway and airport engineering
					CO2	Explain geometric design of highways, flexible pavements, rigid pavements, railways and airport as per standard code books
					CO3	Demonstrate and Identify the traffic parameters and pavement material properties by conducting experiments.
					CO4	Explain design principles of highways, intersections, traffic signals, parking studies, pedestrian facilities, airport components
					CO5	Explain about airport layout, runway and taxiways, design and construction of permanent way of railways
					CO6	Analyze different stress conditions in rigid pavements

S.no	Semester	Course	Course	Course	COURSE OUTCOMES	
					Co No	Course Outcome
4	VI	PE501CE	Structural Analysis	Mr. P. Srikanth	CO1	Analyse the Arches, cables and suspension bridges for static and moving loads.
					CO2	**Analyse** the structure using flexibility matrix method to calculate redundant forces and sketch BMD and SFD.
					CO3	**Analyse** the structure using stiffness matrix method to calculate redundant forces and sketch BMD and SFD.
					CO4	**Develop** stiffness matrix using direct element method for indeterminate structures.
					CO5	**Demonstrate** the Structural analysis software packages.
					CO6	**Analyse** the frames using approximate method of analysis.
5	VI	PE506CE	Foundation Engineering	Mr. Shaik Mohammad Imran	CO1	**Define** theories related to stress distribution of soil, types of foundations and their various bearing capacities as well as settlements
					CO2	**Explain** Safe bearing capacity of shallow foundations, sinking and stability of well foundations
					CO3	**Explain** necessity, types, methods and suitability of pile foundations, caissons, cofer dams, geotechnical investigations and dewatering techniques
					CO4	**Make use of** theories and field tests to calculate vertical stresses and safe bearing capacity of shallow foundations
					CO5	**Make use of** load tests and formulae to calculate load carrying capacities & efficiency of pile and pile groups
					CO6	**Analyse** and calculate different settlements of shallow foundations using settlement analysis
6	VI	PE512CE	Infrastructure Engineering	Mr. Mohd Shahed Ali	CO1	**Defining** infrastructure engineering, economic zone and Compare urban infrastructure and
					CO2	**Explain** Infrastructure Privatization, Compare public and private sector role in infrastructure
					CO3	**Explaining** infrastructure planning and implementation, Identifing Risks related to
					CO4	**Asses** the Social & Environmental impacts due to infrastructure Projects. List the
					CO5	**Identify** the strategies for successful Infrastructure project implementation, Risk Management
					CO6	**Explain** Role of Government in infrastructure implementation.
7	VI	OE601EG	Soft Skills & Interpersonal Skills	Mr. M. L. Murty	CO1	To train the students in effective listening skills required for comprehending and performing the required tasks in Professional Communication
					CO2	To enable the students to develop the required speaking skills as per the necessary
					CO3	To equip the students with appropriate reading, comprehending & summarizing
					CO4	To develop professional writing & publishing varieties of documents and required skills
					CO5	5. To empower the students with the Right Attitude and Coping Techniques
					CO6	To inculcate potential skills in the learners to prepare them to deal with the external
8	VI	PC458CE	Transportation Engineering Lab	Mr. R. Srikanth & Mr. P. Srikanth	CO1	Identify the grade & properties of bitumen
					CO2	Create the awareness about various traffic studies in the field
					CO3	Find out peak hour traffic & peak time for a given location on the road
					CO4	Find design speed, maximum speed & minimum speed limits of a location through spot speed
					CO5	Identify engineering properties of aggregate
					CO6	Explain mix design of bitumen and CBR test etc
					CO1	Understand the application of software's in civil engineering.

S.no	Semester	Course	Course	Course	COURSE OUTCOMES	
					Co No	Course Outcome
9	VI	PC455CE	Computer Applications Laboratory	Mrs. Shaista Begum	CO2	Development of programs for Design of Structural elements uding Excel
					CO3	Use of software knowledge for solving Geo technical related problems
					CO4	Use of software knowledge for solving Hydraulic Engineering problems
					CO5	Analyze and Design two span continuous beam using STAADPRO
					CO6	Analyze and Design two storied frame using STAADPRO

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COURSE OUTCOMES SUMMARY

Semester : VII SEM

S.no	Semester	Course Code	Course Name	Course Instructors	COURSE OUTCOMES	
					Co No	Course Outcome
1	VII	PC401CE	Construction Engineering and Management	Mrs. S. Deva Samyuktha	CO1	**Identify** and report the importance and necessity of construction management
					CO2	**Employ** bar charts, networks to determine the critical path and alter the construction schedules accordingly.
					CO3	**Interpret** the terms related to costs and time, and there by solve problems on crashing of networks.
					CO4	**Categorize** various construction contracts, acts and examine various documents related to construction.
					CO5	**Interpret** the concept of Linear Programming in Construction, and solve problems on Graphical and Simplex methods.
2	VII	PC402CE	Prestressed Concrete	Mrs. Shaista Begum	CO1	**Explain** the concept of prestressing methods and techniques and recognize the importance of materials used in PSC work
					CO2	**Explain** the behavior of a PSC beam section under given prestress and loads and assess the losses in prestressing
					CO3	**Analyse** the indeterminate PSC members
					CO4	**Extend** the knowledge of analysis to Design a PSC beam section for the given conditions.
					CO5	**Analyze** the Shear failure and deflections of a PSC beam for safe design of PSC beams
					CO6	**Assess** the extent of bursting tension in the end block of a PSC beam and Develop the method of strengthening the end block
3	VII	PE404CE	Disaster Management	Mr. D. Bharath Naik	CO1	Explain the terms and concepts of disaster management
					CO2	Summarize the catergories of disasters and their characteristics
					CO3	Discuss the framework and measures of pre-disaster , during disaster, post- disaster measures
					CO4	Interpret the Indian Disaster Management acts and it's framework
					CO5	Describe the application of various technologies to disaster management.
					CO6	Differentiate the various mitigative measures and implement them accordingly.
4	VII	PE408CE	GIS & Remote Sensing	Mr. Shaik Mohammad Imam (Sec- A) & Ms. M. Madhuri(Sec-B)	CO1	**Illustrate** basics of remote sensing, energy interactions with earth surface features and their spectral properties
					CO2	**Classify** different types of satellites, sensors and sensor characteristics in remote sensing
					CO3	**Demonstrate** the basic concepts of GIS
					CO4	**Demonstrate** the basic concepts of Map Projections
					CO5	**Explain** data models and spatial data creation in GIS
					CO6	**Explain** the various operations in spatial data analysis & terrain modelling

S.no	Semester	Course Code	Course Name	Course Instructors	COURSE OUTCOMES	
					Co No	Course Outcome
5	VII	OE701ME	Startup & Entrepreneurship	Dr. M. Uday Kumar	CO1	Understand Indian Industrial Environment, Entrepreneurship and Economic growth, Small and Large Scale Industries, Types and forms of enterprises.
					CO2	Identify the characteristics of entrepreneurs, Emergence of first generation entrepreneurs, Conception and evaluation of ideas and their sources.
					CO3	Practice the principles of project formulation, Analysis of market demand, Financial and profitability analysis and Technical analysis.
					CO4	Apply the concepts of Project Management during construction phase, project organization, project planning and control using CPM, PERT techniques
					CO5	Understand the Behavioral aspects of entrepreneurs, Time Management,Various approaches of time management, their strengths and weakness. The urgency addiction and time management matrix
6	VII	PR401CE	Seminar	Mr. Shaik Mohammad Imran	CO1	**Explain** techniques, processes and tools used in the industry
					CO2	**Discuss** the current needs of the industry in his/her area of interest
					CO3	**Explain** the practical knowledge acquired in the chosen area/work done.
					CO4	**Summarize** and prepare a technical report on internship completed at industry
					CO5	**Adapt** to work in a team or as an individual effectively
7	VII	PW401CE	Project Work- I	Dr. Bandita Naik(Sec-B) & Ms. M. Madhuri (Sec- A)	CO1	Summarize in written form the literature study carried out with relevant data analysis, interpretation and problem identification for the selected project topic.
					CO2	Analyse the specific problem using engineering knowledge to arrive at a solution methodology
					CO3	Formulate an investigation procedure and analyze, interpret and synthesise the obtained data using a laboratory procedure and/or modern engineering software and tools.
					CO4	Draw valid conclusions and engineering solutions including design, recommendations or estimations, keeping in view the safety norms and regulations in codes of practice.
					CO5	Discuss and communicate in oral and written forms, the technical contents of the project, observing professional ethical principles of documentation.
					CO6	Demonstrate individual and teamwork skills in carrying out and managining the project work

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COURSE OUTCOMES SUMMARY

Semester : VIII SEM

S.no	Semester	Course Code	Course Name	Course Instructors	COURSE OUTCOMES	
					Co No	Course Outcome
1	VIII	MC	Gender Sensitization	Mrs. J. R. Hepzibha	CO1	Develop a better understanding of important issues related to gender in contemporary India.
					CO2	To change the basic dimensions of the biological. Sociological, psychological and legal aspects of gender through discussions, facts, everyday life, literature and film
					CO3	To analyze how gender discrimination works in our society and how to counter it.
					CO4	To identify and plan better ways of working and living together as equals.
					CO5	To develop a sense of appreciation of women in all walks of life
					CO6	To enable in developing good interpersonal relationships at work places and to develop a sustain interest in gender equality
2	VIII	PE411CE	Principles of Green buildings	Ms. Shiphali Preeti And	CO1	Explain the concepts of sustainability and a green building, along with its features and benefits.
					CO2	Describe the criteria and methods used for site selection & planning and in achieving water efficiency in green buildings
					CO3	Define the terms and explain the methods used for achieving energy efficiency in green buildings.
					CO4	Discuss the various types of building materials and waste management methods for a sustainable built environment.
					CO5	Describe the methods used to maintain indoor environmental quality.
					CO6	List the various Green Building Rating systems applicable in India, and also the standard national and international codes related to green building practices.
3	VIII	PE413CE	Intelligent Transportation Systems	Mr. R. Srikanth	CO1	Demonstrate comprehension of ITS objectives, historical background, and benefits.
					CO2	Recall the data collection techniques used in ITS, including detectors, AVL, AVI, GIS, and video data collection.
					CO3	Utilize the importance of telecommunications in ITS, including information management, TMCs, and vehicle-roadside communication.
					CO4	Demonstrate comprehension of ITS functional areas including ATMS, ATIS, CVO, AVCS, APTS, and ARTS
					CO5	Recall user needs and services of ITS, including travel and traffic management, public transportation management, electronic payment, and emergency management.
					CO6	Utilize concepts of automated highway systems, including vehicles in platoons and global overview of ITS implementations, and understand impact on sustainable mobility and travel demand management.
		ME	sting ogies	a Anwar	CO1	Describe the fundamentals of additive manufacturing,classify and explain advantages and disadvantages of3D Printing technologies
					CO2	Describe the operating principles ,capabilities and limitations of liquid based systems.

S.No	Semester	Course Code	Course Name	Course Instructors	COURSE OUTCOMES	
					Co No	Course Outcome
4	VIII	OE804	3D Printing Technologies	Mrs. Shazia	CO3	Describe the operating principles, capabilities and limitations of solid based systems
					CO4	Explain the operating principles,specifications,advantages and disadvantages of powder based systems.
					CO5	Applying the capabilities of additive manufacturing in different industrial sectors.
5	VIII	PW704CE	Project Work - II	Ms. M. Madhuri and Dr. Bandita Naik	CO1	Summarize in written form the literature study carried out with relevant data analysis, interpretation and problem identification for the selected project topic.
					CO2	Analyse the specific problem using engineering knowledge to arrive at a solution methodology
					CO3	Formulate an investigation procedure and analyze, interpret and synthesise the obtained data using a laboratory procedure and/or modern engineering software and tools.
					CO4	Draw valid conclusions and engineering solutions including design, recommendations or estimations, keeping in view the safety norms and regulations in codes of practice.
					CO5	Discuss and communicate in oral and written forms, the technical contents of the project, observing professional ethical principles of documentation.
					CO6	Demonstrate individual and teamwork skills in carrying out and managining the project work.

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AY: 2022-23

Course Outcomes

III Semester

Course Code	Course Name	Course Outcomes	Taxonomy
4BS303EE	NMFS	Find the solution of algebraic and transcendental equations using numerical methods.	Apply
		Apply numerical techniques to solve ordinary differential equations an definite integrals.	Apply
		Apply numerical methods to interpolate values and fit different curves from given data.	Apply
		Expand function as a Fourier series	Apply
		Apply the solution of partial differential equations to physical problems	Apply
4PC301EE	EMF	Understand the vector calculus for electromagnetism.	Understand
		Apply the electric fields for simple configurations under static conditions	Apply
		Analyze and apply the static magnetic fields.	Analyze
		Analyze the Electrical Circuits with the concept of Network topology	Analyze
		Understand Maxwell's equation in different forms and different media	Understand
		Understand the propagation of EM wave	Understand
4PC302EE	EC-I	Explain the concepts of single phase, three phase systems and magnetic circuits	Understanding
		Calculate various parameters of magnetic circuits and electrical circuits (under steady state and transient condition)	Applying
		Analyze electrical circuits with network theorems, mesh and nodal analysis methods and under resonance condition	Analyzing
		Analyze electrical circuits under transient condition with and without Laplace transforms	Analyzing
		Analyze a given three phase system and magnetic circuits	Analyzing

		conversion,operators,storage classes,recursion,pointers,file handling operations	Understand
		Write components of computer system,flowchart for algorithms and types of files,Pre processors	Apply
4ES304CS	PPS	apply the knowledge of coding for the problem solving and compilation	Apply
		apply the knowledge of conditional branching,loops,arrays and string to pass functions, call by value,call by reference with dynamic memory allocation concept.	Apply
		write searching and sorting algorithms with help of arrays and about command line arguments,structures and unions.	Apply
		Analyze the CE,CB using small signal model , transistor biasing, feedback concept	Analyze
		Analyze the working principal of oscillators, amplifiers, its applications	Analyze
4PC303EE	ADE	Design the combinational circuits using basic gates	Create
		Design the sequential circuits using the basic flip flops	Create
		Analyze the A/D D/A converters, understand the different types memory devices	Analyze
		Understand the Significance of value inputs in a classroom and start applying them in their life and profession	Understand
		Assess their own ethical values and the social context of problems.	Understand
4HS302HS	HVPE	Distinguish between values and skills, happiness and accumulation of physical facilities, the Self and the Body, Intention and Competence of an individual, etc.	Understand
		Understand the role of a human being in ensuring harmony in society and nature.	Understand
		Distinguish between ethical and unethical practices and start working out the strategy to actualize a harmonious environment wherever they work.	Understand
		Understand the concepts of Indian culture and Traditions and their importance	Understand
		Distinguish the Indian languages and literature	Understand
4MC302HS	EITK	Learn the philosophy of ancient, medieval and modern India.	Understand
		Acquire the information about the fine arts in India	Understand

		interpret the concepts and the importance to protect intellectual property of the nation	
4PC351EE	ADE LAB	Describe and analyze different types of diodes, their operations and characteristics	Analyze
		Calculate ripple factor, efficiency and % regulation of rectifier circuits	Design
		Analyse feedback amplifiers and op-amp oscillator circuits	Realize
		Design single, and multi-stage amplifier, wave shaping and controller circuits	Design
		Understand the characteristics of electronics devices	Understand
		Design of p, pi and pid controllers using op-amps	Design
4ES354CS	PPS LAB	Choose appropriate data type for implementing programs in C language	Apply
		Design and implement modular programs involving output operations, decision making and looping constructs	Create
		Apply the concept of arrays, pointers for implementing programs and string handling	Apply
		Design and implement programs to store data in structures and files	Create
		Develop confidence for self education and ability for lifelog learning need for computer languages	Create

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Course Outcomes

AY: 2022-23

IV Semester

Course Code	Course Name	Course Outcomes	Taxonomy
4HS403BM	MEFA	Understand the basic concepts of financial accounting classify preparation of various books of accounts	Understand
		Analyze& interpret financial statements.	Analyze
		Interpret knowledge about the functioning & working of various financial institutions.	Understand
		Apply traditional & modern techniques of capital budgeting in long term investments, to test whether to invest in a particular project or not.	Apply
		Analyze the liquidity, solvency & profitability of financial statements.	Analyze
		Evaluate the financial performance of the business unit.	Evaluate
4PC404EE	PS-I	Analyze and understand working of conventional power generation methods	Analyze
		Analyze and understand the alternate energy sources of power generation	Analyze
		Analyze concepts of economics of power generation	Analyze
		Evaluate inductance and capacitance of transmission lines	Evaluate
		Evaluate sag, string efficiency and grading of cables	Evaluate
4PC405EE	EM-I	Understand the concepts of magnetic circuits.	Understan
		Understand electrical principle, laws, and working of DC machines.	Understan
		Identify the parts of DC machines understand its operation	Apply
		Analyze the construction and characteristics and application of various types of DC generators.	Analyze
		Analyze the construction and characteristics and application of various types of DC motors and testing of motors.	Analyze
		Understand electrical principle, laws, and working of 1 – phase transformer and losses and also conduct various tests on the transformer	Understa

4PC406EE	CS	Apply the concepts of time response of system, stability criterion, frequency response, state models, state transition matrix, solution of state equations	Applying
		Analyze the concepts of F-I and F-V analogous systems, Block diagram reduction technique, signal flow graph, root locus technique	Analyzing
		Analyze the concept of stability analysis from bode plot, polar plot	Analyzing
		Design the networks of lead, lag and lead-lag compensation using Bode plot	Creating
4PC407EE	EC-II	Explain the concepts of two port network, complex frequency, transformed network, graph theory, filters andattenuators	Understand
		Find two port parameters, impedance, and network equations	Apply
		Analyze electrical circuits with the concept of networktopology	Analyze
		Analyze and design various types filters and attenuators	Analyze
		Synthesize electrical network using Foster and Cauer Forms	Analyze
4ES405CS	PYP	Examine Python syntax and semantics and be fluent in the use of Python flow control and functions.	Apply
		Demonstrate proficiency in handling Strings and File Systems	Understand
		Create, run and manipulate Python Programs using core data structures like Lists, Tuples and Dictionaries.	Create
		Interpret the concepts of Object-Oriented Programming as used in Python.	Understand
		Create and animate a variety of shapes and develop an application with graphical user interface (GUI).	Create
		Implement exemplary applications related to Network Programming, Web Services and Databases in Python	Analyze
4MC403HS	IC	Have a general knowledge and back ground about the Constitution of India and its importance	Understand
		Will distinguish and understand the working of the Central, state and provincial levels of administration.	Apply
		Will be conscious about the fundamental duties, responsibilities and rights as an ideal citizen of India	Understand
		Will be able to perceive and interpret the functioning and distribution of resources between Centre and state.	Apply

		of the social structure, election process and Grievance redressal in a democracy.	
4PC452EE	EC LAB	Evaluate the time response and frequency response character sties of R,L, C Series and parallel circuits	Evaluate
		Simplify the complicated circuits using Thevenin's, Norton's and Superposition theorems.	Analyze
		Examine various parameters of a two-port network.	Analyze
		Develop code to obtain transient analysis of electrical circuits using spice	Apply
		Evaluate the three phase power of balanced loads	Evaluate
		Analyze the networks from a given transfer function	Analyze
4PC453EE	CS LAB	Understand Performance of P, PI and PID Controllers.	Understand
		Develop PLC programs for certain applications.	Apply
		Make use of the knowledge of Data acquisition system and Industrial process control in real world.	Apply
		Develop transfer function of various control system plants practically by conducting the experiments.	Apply
		Design and Simulate the Programming and control system concepts using MATLAB.	Create
		Design of lag and lead compensation by using Networks.	Create
4ES455CS	PYP LAB	Develop solutions to simple computational problems using Python programs	Create
		Solve problems using conditionals and loops in Python	Apply
		Develop Python programs by defining functions and calling them	Create
		Use Python lists, tuples and dictionaries for representing compound data	Apply
		Develop Python programs for GUI applications	Create

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Course Outcomes

AY: 2022-23

V Semester

Course Code	Course Name	Course Outcomes	Taxonomy
PC415EE	LCS	Understand the concept of the terms control systems, feedback, Mathematical modeling of Electrical and Mechanical systems.	Understand
		Explain the time domain and frequency response analysis of control systems.	Evaluate
		Apply the knowledge of various analytical techniques used to determine the stability of control systems.	Apply
		Understand the importance of design of compensators	Create
		Demonstrate controllability and observability of modern control systems.	Understand
		Understand and develop the state space representation of control systems.	Apply
PC416EE	EMI	To explain the different types and constructions of dc and single phase / three phase ac measuring equipment used along with their governing equations	Understand
		Understand the construction and applications of ac meters, their errors, compensation and testing.	Apply
		To identify, out of the various methods using bridge circuits available , for the determination of electrical parameters of Resistance , Inductance Capacitance, and frequency and the importance of gauges and transducers	Apply
		To utilize the importance of B – H curve in electrical apparatus as in CTs and PTs and their errors	Apply
		To Examine the use of ac and dc Potentiometers for use in calibration of meters.	Analyze
		To appraise the importance of special meters like MDI, PF , Frequency , synchro scopes , strain gauges and transducers	Evaluate
PC417EE	SS	Understand the basic concepts related to continuous and discrete time signals, mathematical representation of periodic signals.	Understand
		Understand the basic concepts related to continuous and discrete time systems.	Understand

		properties.	Evaluate
		Evaluate the concept of Z-transform and its properties.	Evaluate
		Analyze the continuous time systems in frequency domain with the help of Fourier series representation.	Analyze
		Analyze the discrete signals in frequency domain with the help of DTFT and DFT.	Analyze
PC418EE	PS-II	Classify the transmission lines and evaluate the performance of short, medium and long transmission lines.	Apply
		Define the occurrence of corona, corona losses and the methods to minimize corona losses in the transmission. Lines	Understand
		Choose per unit values and apply for the analysis of symmetrical fault calculations.	Apply
		Understand the impact of different types of faults occurring on overhead transmission lines and evaluate fault currents.	Understand
		Elaborate the reasons for the voltage variations, and Improve the voltage at the receiving end side.	Evaluate
		Explain the causes of over voltages and acquire the knowledge of natural impedance of transmission line and significance in the operation of power system network.	Understand
C419EE	LIC	Explain Differentiate IC and Discrete components, understand manufacturing process of IC and how monolithic components are being developed	Understand
		Apply Learn about the basic concepts for the circuit configuration for the design of linear integrated circuits and & Develop skills to develop simple filter circuits and various amplifiers and can solve problems related to it	Apply
		Analyze To study the block diagrams of 555 timer and 565 phase locked loops ICs and use them to construct various applications..	Analyze
		Analyze the basic logic gates by using digital ic . Learn about various techniques to develop A/D and D/A convertors	Analyze
		Analyze: The ability to understand, analyze and design various combinational and sequential circuits	Analyze
503EE	RES	List and Compare the various forms of non conventional energy resources and analyze the different Fuel cells with applications of fuel cells	Analyze
		Explain the solar energy applications and calculations of solar energy	Analyze

		Analyzing how wind energy can be tapped from the nature and its calculations	Analyze
		Illustrate the concepts of Geothermal ,Wave, Tidal energy & OTEC	Understand
		Outline the Biomass, its mechanism of production of energy and its applications	Understand
PC459EE	EM-II LAB	Verify the theory and working of electrical machines through laboratory experimental work.	Understand
		Make circuit diagram connections to perform experiments, measure, analyze the observed data to come to a conclusion.	Evaluate
		Organize reports based on performed experiments with effective demonstration of diagrams and characteristics/graphs.	Analyze
		Determine the different parameters of a three-phase alternator and its regulation	Understand
		Determine the different parameters of a three-phase synchronous motor as well as its 'V' and 'inverted V' curves	Analyze
		Compare the performance characteristics of different electrical machines.	Create
PC460EE	EMI LAB	Demonstrate measurement of resistance, inductance and capacitance.	Understand
		Determine the error and calibrate the energy meter.	Apply
		Calibrate ammeter, voltmeter and wattmeter using potentiometer.	Apply
		Assess the iron loss of given specimen	Apply
		Determine the amplitude and frequency of an unknown signal.	Apply
		Determine the error and calibrate the power factor meter	Apply
PC461EE	CS LAB	Understand Performance of P, PI and PID Controllers.	Understand
		Develop PLC programs for certain applications.	Apply
		Make use of the knowledge of Data acquisition system and Industrial process control in real world.	Apply
		Develop transfer function of various control system plants practically by conducting the experiments.	Apply
		Design and Simulate the Programming and control system concepts using MATLAB.	Create
		Design of lag and lead compensation by using Networks.	Create

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Course Outcomes

AY: 2022-23

VI Semester

Course Code	Course Name	Course Outcomes	Taxonomy
PC424EE	DSPA	Explain the concepts of digital signals, digital systems, digital signal processing and digital signal processors	Understand
		Compute linear convolution, circular convolution and linear convolution using OFT of two discrete time signals and Solve difference equation with and without z-transforms.	Apply
		Compute DFT and IDFT using formula and FFT algorithms	Apply
		Analyze IIR and FIR filters using realization concept	Analyze
		Design IIR and FIR filters using various methods	Create
PC425EE	SGP	Acquire the knowledge of construction, working principles and testing of different electromagnetic relays, static relays, distance relays, differential relays and circuit breakers used to protect generators, Transformers, Transmission lines and distribution feeders.	Understan
		Analyze the characteristics of over current, over voltage, distance and differential relays	Analyze
		Select the ratings of relays and circuit breakers for different applications	Analyze
		Explain the construction details, advantages and disadvantages of Gas insulated sub stations	Understar
		Select the protection method used against over voltages	Analyze
PC423EE	MPMC	Adapt the knowledge of Architecture of 8085 and 8051, writing assembly language programming for different applications.	Create
		Explain types of microcontrollers and their applications.	Understa
		Develop a program to run on 8085 microprocessor based systems.	Apply
		Define the techniques for faster execution of instructions, improve speed of operations and enhance	Rememb

		Microcontroller	
		Simplify and design system using memory chips and peripheral chips for 8-bit 8085 microprocessor.	Create
PE504EE	EV	Understand the basics of electric and hybrid electric vehicles, their architecture, technologies and fundamental	Understand
		Know about different energy storage technologies used for hybrid electric vehicles and their control.	Understand
		Choose a suitable drive scheme for developing an electric hybrid vehicle depending on resources	Create
		Design the components and their sizing and the power electronics devices used in hybrid electric vehicle	Create
		Understand the maintenance of the electrical vehicle.	Understand
HS103CM	FA	Understand the basic concepts of financial accounting classify preparation of various books of accounts	Understand
		Analyze& interpret financial statements.	Analyze
		Interpret knowledge about the functioning & working of various financial institutions.	Understand
		Apply traditional & modern techniques of capital budgeting in long term investments, to test whether to invest in a particular project or not.	Apply
		Analyze the liquidity, solvency & profitability of financial statements.	Analyze
		Evaluate the financial performance of the business unit.	Evaluate
OE601CE	DM	Demonstrate the concepts of Disaster Management, Role of NDMA in Disaster Management	Understand
		Identify different types of disasters, Mitigation measures of each disaster, case studies of disasters	Understand
		Explain the disaster management cycle and disaster response,use of technology in disaster mitigation	Understand
		Illustrate the acts and policies of disaster management in India	Understand
		Explain the concepts of communication and public awareness along with case studies.	Understand
		Demonstrate the concepts of Disaster Management, Role of NDMA in Disaster Management	Understand
OE601AI&DS	AI	Introduction to Artificial Intelligence, its applications and Problem solving techniques. Also the knowledge representation methods, Planning, Expert systems and their algorithms in AI	Understand
		Analyzing different searching algorithms and game playing programs to solve given problems.	Analyze
		Apply basic principles of AI in solutions that require	Apply

		Microcontroller	
		Simplify and design system using memory chips and peripheral chips for 8-bit 8085 microprocessor.	Create
PE504EE	EV	Understand the basics of electric and hybrid electric vehicles, their architecture, technologies and fundamental	Understand
		Know about different energy storage technologies used for hybrid electric vehicles and their control.	Understand
		Choose a suitable drive scheme for developing an electric hybrid vehicle depending on resources	Create
		Design the components and their sizing and the power electronics devices used in hybrid electric vehicle	Create
		Understand the maintenance of the electrical vehicle.	Understand
HS103CM	FA	Understand the basic concepts of financial accounting classify preparation of various books of accounts	Understand
		Analyze& interpret financial statements.	Analyze
		Interpret knowledge about the functioning & working of various financial institutions.	Understand
		Apply traditional & modern techniques of capital budgeting in long term investments, to test whether to invest in a particular project or not.	Apply
		Analyze the liquidity, solvency & profitability of financial statements.	Analyze
		Evaluate the financial performance of the business unit.	Evaluate
OE601CE	DM	Demonstrate the concepts of Disaster Management, Role of NDMA in Disaster Management	Understand
		Identify different types of disasters, Mitigation measures of each disaster, case studies of disasters	Understand
		Explain the disaster management cycle and disaster response,use of technology in disaster mitigation	Understand
		Illustrate the acts and policies of disaster management in India	Understand
		Explain the concepts of communication and public awareness along with case studies.	Understand
		Demonstrate the concepts of Disaster Management, Role of NDMA in Disaster Management	Understand
OE601AI&DS	AI	Introduction to Artificial Intelligence, its applications and Problem solving techniques. Also the knowledge representation methods, Planning, Expert systems and their algorithms in AI	Understand
		Analyzing different searching algorithms and game playing programs to solve given problems.	Analyze
		Apply basic principles of AI in solutions that require	Apply

		Demonstrate awareness and a fundamental understanding of various applications of AI techniques in intelligent agents, expert systems, probability, artificial neural networks and other machine learning models.	Evaluate
		To explore the understanding of agent based AI Planning ,logical based agents and Expert systems	Create
PC462EE	MPMC LAB	Adapt the knowledge of Architecture of 8086 and 8051, writing assembly language programming for different applications.	Create
		Explain types of microcontrollers and their applications.	Understand
		Develop a write programs to run on 8086 microprocessor based systems.	Apply
		Define the techniques for faster execution of instructions, improve speed of operations and enhance performance of microprocessors.	Remember
		Interpret the difference between Microprocessors and Microcontrollers.	Evaluate
		Simplify and design system using memory chips and peripheral chips for 16-bit 8086 microprocessor.	Create
PC463EE	DSP LAB	Develop code to generate basic waves	Apply
		Develop code perform basic operations on them	Apply
		Develop code to obtain linear and circular convolution	Apply
		Develop code to obtain DFT and FFT.	Apply
		Develop code to design FIR filters.	Apply
		Develop code to design IIR filters	Apply

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Course Outcomes

AY: 2022-23

VII Semester

Course Code	Course Name	Course Outcomes	Taxonomy
PC428EE	CED	Develop Control Circuits for remote control and interlocking of electric drives	Create
		Explain the concept of protection of motors using various protecting equipments	Understand
		Develop control circuits for starting and braking of induction motors	Create
		Develop control circuits for starting and braking of synchronous motors	Create
		Develop control circuits for starting and braking of DC motors	Create
		Develop driver circuits for stepper motor	Create
PC429EE	SGP	Understand the need for protection and explain the working principles of different relays	Understand
		Understand the operation of Solid State relays and their applications in modern power systems	Understand
		Classify relays based on construction, operation, application etc., and Analyze their characteristics to choose their usage in power systems.	Apply
		Analyze the characteristics of differential relays and also their applications in power system networks	Analyze
		Understand the operation of different types of circuit breakers and their performance, based on which selection of circuit breaker can be made for a particular application	Understand
		Understand the advantages of GIS substations and Protection methods against Over Voltage	Understand
PC430EE	PEA	Know the reactive power compensation	Understand
		Learn the series and shunt compensation in Power Transmission system.	Understand
		Know the application of FACTS devices in Power Transmission system.	Understand
		Study and apply the power transmission schemes – HVDC Transmission	Apply
		Implement the control circuits based on the Controlling parameters of HVDC system	Analyze

		Understand the operation of Differential protection of transformer	Understand
PC466EE	ES LAB	Compose (Write) MATLAB code using some basic commands.	Create
		Develop MATLAB code for analyzing power system network by obtaining line parameters, Z, Y matrices, and Economics of power systems	Apply
		Simulate the concepts of Electrical Circuits, to design a led, lag, led and lag compensator and obtain the characteristics by Control Systems and interpret data.	Create
		Demonstrate (Determine) the knowledge of programming environment, compiling, debugging, linking and executing variety of programs in MATLAB.	Evaluate
		Demonstrate ability to develop Simulink models for various electrical systems.	Apply
		Validate simulated results from programs/Simulink models with theoretical calculations.	Apply
PW701EE	SI	Select the task or realize a prespecified target, with limited scope, rather than taking up a complex task and leave it.	Remember
		Outline the alternate viable solutions for a given problem and evaluate these alternatives with reference to pre-specified criteria.	Understand
		Choose the selected solution and document the same.	Apply
		Examine with industrial experts to familiarize the work culture and ethics of the industry.	Analyse
		Determine and enhance the confidence while communicating with industry engineers.	Evaluate
		Design/develop a small and simple product in hardware or software.	Create
PW702EE	PW-I	Rephrase the basic concepts of electrical engineering and discover the implementation	Analyse
		Develop the design and analysis of a particular problem in project	Apply
		Formulate the programming and interpret the project	Create
		Develop the hardware	Create
		Perceive the practical knowledge within the chosen area of technology for project development	Evaluate
		Evaluate different solutions based on economic and technical feasibility	Create

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Course Outcomes

AY: 2022-23

VIII Semester

Course Code	Course Name	Course Outcomes	Taxonomy
PE515EE	PSOC	Solve load flow by appropriate modelling of the given power system and formulation of Ybus.	Apply
		Evaluate generation mix for economic operation with and without transmission losses.	Apply
		Explain load frequency control and estimate the frequency deviation through modelling.	Understand
		Analyse and describe different types of power system stability and establish SSSL.	Analyze
		Identify various methods of voltage control and study the reactive power compensation.	Apply
PE514EE	SGT	Assess the role of automation and digitization in Transmission and Distribution	Understand
		Describe the principles and requirements of the next generation future power network (or smart grid), using the latest trends in SCADA for power systems.	Apply
		Apply advanced knowledge of electrical power system operations and control	Apply
		Analyze the challenges and opportunities due to increased penetration of renewable energy sources.	Analyze
		Investigate operation and the importance of data acquisition devices and their location for Voltage and Frequency control	Analyze
OE603CE	RSE	Demonstrate about road accidents and its study objectives. Prepare accident investigation reports and database based on data collected.	Understand
		Apply design principles for roadway geometrics improvement with various types of traffic safety appurtenances/tools	Apply
		Explain the road safety design operations, counter measures & characteristics to manage traffic including incident management	Understand
		Illustrate the concept of Road Safety Auditing its principles, procedures and code of good practice and checklists	Understand
		Explain about design and working principles of road signs and traffic signals	Understand

		traffic incidents.	
PC463EE	DSP LAB	Develop code to generate basic waves	Apply
		Develop code perform basic operations on them	Apply
		Develop code to obtain linear and circular convolution	Apply
		Develop code to obtain DFT and FFT.	Apply
		Develop code to design FIR filters.	Apply
		Develop code to design IIR filters	Apply
PW703EE	PW-II	Rephrase the basic concepts of electrical engineering and discover the implementation	Analyse
		Develop the design and analysis of a particular problem in project	Apply
		Formulate the programming and interpret the project	Create
		Develop the hardware	Create
		Perceive the practical knowledge within the chosen area of technology for project development	Evaluate
		Evaluate different solutions based on economic and technical feasibility	Create

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METHODIST
COLLEGE OF ENGINEERING & TECHNOLOGY
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Accredited by NAAC with A+ and NBA
Affiliated to Osmania University & Approved by AICTE

CO'S & CO-PO MAPPING SEM-I 2022-23

DEPARTMENT OF HUMANITIES & SCIENCES

S.No	CODE	COURSE TITLE		COURSE OUTCOME	Taxonomy	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
1	[illegible]	ENGINEERING MATHEMATICS	CO1	Find the rank of matrix and its use to find solution of linear equations eigen value problem. Quadratic forms.	Understand	3	3	-	-	2	-	-	1	1	1	-	-	-	-	-
			CO2	Explain the concepts of derivatives using mean value theorems and their generalization. Concepts of curvature, evolutes, involutes, envelopes of family of curves.	Apply	3	3	-	-	-	-	-	1	1	1	-	-	-	-	-
			CO3	Find Partial derivatives of functions of two variables using concept of limits and continuity and study the concepts of maximum and minimum of functions of two variables.	Remember	3	3	2	-	-	-	-	1	1	1	-	-	-	-	-
			CO4	Identify the key concepts, theories and mathematical fundamentals to derive mathematical relations involved in evaluation of double integrals and triple integrals and solving Engineering problems.	Analyze	3	3	-	-	-	-	-	1	1	1	-	-	-	-	-
			CO5	Evaluate gradient of a scalar field, divergence, curl of a vector field to find the values of line, surface and volume integrals and establish their relation using Green, Gauss and Stokes theorems.	Analyze	3	3	-	-	-	-	-	1	1	1	-	-	-	-	-
				Average		3	3	2	-	2	-	-	1	1	1	-	-	-	-	-
2	[illegible]	APPLIED PHYSICS	CO1	Classify solids based on their energy band structures, identify semiconductors for engineering applications	Understand	3	-	-	-	-	-	-	1	1	2	-	-	-	-	-
			CO2	Classify magnetic and dielectric materials	Apply	3	2	-	-	-	-	-	1	1	1	-	-	-	-	-
			CO3	Explain the fundamental concepts on superconductivity and Quantum behavior of matter waves	Understand	3	2	-	-	-	-	-	1	1	1	-	-	-	-	-
			CO4	Explain the lasing action in lasers, propagation of light in optical fibers and compare their applications in different fields	Apply	3	1	-	-	-	-	-	1	1	1	-	-	-	-	-
			CO5	Knowledge about preparation of thin film and Nano material; this helps the students to prepare new materials	Analyze	3	3	-	-	-	-	-	1	1	1	-	-	-	-	-
				Average		3	2	-	-	-	-	-	1	1	1	-	-	-	-	-
3		PROGRAMMING FOR PROBLEM SOLVING	CO1	Formulate simple algorithms for arithmetic and logical problems. Translate the algorithms to programs	Understanding	3	-	1		3				1			3	3	3	1
			CO2	Test and execute the programs and correct syntax and logical errors	Applying	3	2			3				2			2	1	3	1
			CO3	Implement conditional branching, iteration and recursion	Evaluating	3	3	2	1	3				1			2	3	3	1
			CO4	Decompose a problem into functions and synthesize a complete program using divide and conquer approach	Analyzing	3	2	1	1	3				1			2	3	3	2
			CO5	Construct recursive programs and use structures to formulate algorithms and programs	Creating	3	3	3	2	3				1			2	3	3	3
				Average		2.8	2.2	1.2	[illegible]	3				1.2			2	2.6	3	1
4		ELEMENTS OF ELECTRICAL & ELECTRONICS ENGINEERING	CO1	Understand the concepts of electrical circuits and Analyze complex electrical circuits with the help of different network theorems	Understanding & Analyzing	2	1	2						2				1	1	
			CO2	Understand the basic concepts of Electrical DC Machines	Understanding	3	1	2										1	2	
			CO3	Understand the basic concepts of transformers and three phase induction motors	Understanding	3	2	1										2	2	
			CO4	Analyze the rectifiers and regulators circuits	Analyzing	3	3	2						2	1			3	1	
			CO5	Analyze the performance of BJTs, FETs on the basis of their operation and working	Analyzing	3	3	2						2	1			2	2	
				Average		2.8	2.2	1.8						2	1			1.8	1.8	
5	[illegible]	ENVIRONMENTAL SCIENCES	CO1	Describe the various types of natural resources	Understand	-	-	-	-	-	3	3	-	-	-	-	3	-	-	-
			CO2	Differentiate between various biotic and abiotic components of ecosystem	Understand	-	-	-	-	-	1	2	-	-	-	-	1	-	-	-
			CO3	Define the values, threats of biodiversity, the methods of conservation, endangered and endemic species of India	Remember	-	-	-	-	3	1	3	-	-	-	-	1	-	-	-
			CO4	Illustrate causes effects, control measures of various types of environmental pollutions	Analyze	-	-	-	-	1	3	1	3	-	-	-	2	-	-	-
			CO5	Explain the methods of water conservation, causes, effects of climate change, global warming, acid rain and ozone layer depletion, population explosion	Understand	-	-	-	-	-	-	3	1	-	-	-	1	-	-	-

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				Average						3	2	3	2.5				3			
6	[illegible]	APPLIED PHYSICS LAB	CO1	Develop analytical/experimental skills and impart prerequisite hands on experience for engineering laboratories	Create	3														
			CO2	Understand the need for precise measurement practices for data recording	Understand	3		3												
			CO3	Understand the principle, concept, working and applications of relevant technologies and comparison of results with theoretical calculations	Apply	3		3												
			CO4	Analyze the techniques and skills associated with modern scientific tools such as lasers and fiber optics	Analyze	3														
			CO5	Acquire knowledge in communication skills through working in groups in performing the laboratory experiments and by interpreting the results	Evaluate	3									2					
				Average		3		3							2					
7		PROGRAMMING FOR PROBLEM SOLVING LAB	CO1	Choose appropriate data type for implementing programs in C language	Create	3	2	3	2	3				2			2	2	3	1
			CO2	Design and implement modular programs involving input output operations, decision making and looping constructs	Understand	3	2	3	1	2				3			1	3	3	2
			CO3	Apply the concept of arrays, pointers for implementing programs and string handling	Create	2	2	2	1	2				1			2	3	2	1
			CO4	Design and implement programs to store data in structures and files	Understand	3	3	1	1	1				2			3	2	2	1
			CO5	Develop confidence for self education and ability for life long learning need for computer languages	Apply	3	2	2	2	3				1			2	3	3	1
				Average		2.8	2.4	1.8	1.4	1.5				1.6			2	1.6	2.8	1.6
8		ELEMENTS OF ELECTRICAL & ELECTRONICS ENGINEERING LAB	CO1	Explain common electrical components and their ratings	Understanding	3	3	3	1					2				2		2
			CO2	Analyse performance of DC and AC electrical circuits	Analyzing	3	2	1						3				2		
			CO3	Analyze performance of electrical machines	Analyzing	3	3	2	2					3				2		2
			CO4	Design diode circuit and understand application of Zener diode	Understanding	3	3	2	2					2				2		2
			CO5	Analyse characteristics of BJTs and FETs	Analyzing	3	3	2	2					3				2		2
				Average		2.8	2.8	1.8	1.75					2.6			-	2	-	2
9	[illegible]	ENGG. GRAPHICS & DESIGN LAB	CO1	Use appropriate instruments and apply the engineering conventions to draw engineering objects in paper on a drawing sheet	Applying	3				3									3	
			CO2	**Make use of** Drawing Sheets to draft engineering curves like conics, involutes & cycloids	Applying	3				3									3	
			CO3	**Make use of** Drawing Sheets to draft projections of lines, planes, solids and determine unknown lengths & angles	Applying	3				3									3	
			CO4	**Make use of** AutoCAD software to draft sections of solids and development of surfaces	Applying	3				3									3	
			CO5	Convert isometric views to orthographic & vice versa	Applying	3				3									3	
				Average		3	-	-	-	3	-	-	-	-	-	-	-	-	3	-
10	[illegible]	CHEMISTRY	CO1	Apply concept of electrode potential in identifying feasibility of electrochemical reaction; illustrate electro analytical techniques and working of batteries	Analyzing	3								3	3					
			CO2	Identify the mechanism of corrosion of materials on basis of electrochemical approach and devise corrosion control methods. Estimate the physical & chemical parameters of quality of water and explain	Understanding	3				2			3	3						
			CO3	Explain the influence of chemical structure on properties of materials and their choice of engineering applications	Understanding	2				2			3	3						
			CO4	Classify chemical fuels and grade them through qualitative analysis	Understanding	3							2	3						
			CO5	Apply the concept of green chemistry to modify engineering processes and materials. Understand the synthesis of drugs	Applying		3						3	3						
				Average																

11	[illegible]	ENGLISH	CO1	Read, understand, interpret and comprehend a variety of written texts and analyse different ways of life through reading prose and poetry, each symbolizing a particular virtue that [illegible]	Understand										[illegible]		[illegible]			
			CO2	Remember and recognize the significance of vocabulary (roots and affixes, homonyms, one-word substitution etc.) and use language accurately for effective communication in distinctive scenarios	Understand										[illegible]		[illegible]			
			CO3	Apply elementary grammatical concepts (tenses, articles, prepositions, etc.) to spoken and written English in informal and formal ambience	Apply										[illegible]		[illegible]			
			CO4	Develop creativity in writing skills by forming sentences, expanding on the given clues, composing précis & Paragraphs & Essays	Apply										[illegible]		[illegible]			
			CO5	Compile information of assorted aspects of English Writing for framing Letters for varied purposes, reporting diverse events and drafting SOPs	Apply								[illegible]		[illegible]		[illegible]			
				Average									[illegible]		[illegible]		[illegible]			
12		EM-I	CO1	Define and classify force/force systems, free body diagram, truss, Centroid and moment of inertia	Understand	[illegible]	[illegible]											[illegible]		
			CO2	Apply the laws of mechanics/Lami's theorem, concepts of force systems and static equilibrium for solving for unknown forces with and without friction for single and connected bodies	Apply	[illegible]	[illegible]	[illegible]										[illegible]		
			CO3	Analyse plane trusses for unknown support reactions and member forces with help of analytical method	Analyze	[illegible]	[illegible]	[illegible]										[illegible]		
			CO4	Determine the Centroid and the moment of inertia for elementary, composite figures and solid bodies	Create	[illegible]	[illegible]	[illegible]	[illegible]									[illegible]		
			CO5	Construct free body diagram for the given force system/connected bodies	Create	[illegible]	[illegible]											[illegible]		
				Average		1.4	[illegible]	[illegible]	[illegible]									[illegible]		
13	[illegible]	EM	CO1	Apply the concepts of force systems and static equilibrium for solving the unknown forces	Apply	[illegible]	[illegible]	[illegible]							[illegible]		[illegible]			
			CO2	Solve for unknown forces in problems involving friction between contacting bodies	Evaluate	[illegible]	[illegible]	[illegible]							[illegible]		[illegible]			
			CO3	Determine the centroids and moments of inertia for lines, areas and volumes	Evaluate	[illegible]	[illegible]	[illegible]							[illegible]		[illegible]			
			CO4	Solve for unknown parameters in problems related to kinematics and kinetics of particles and rigid bodies	Evaluate	[illegible]	[illegible]	[illegible]							[illegible]		[illegible]			
			CO5	Apply the principles of work & energy and law of conservation of momentum solving for unknown kinematic and dynamic parameters of rigid bodies in motion and in vibration	Apply	[illegible]	[illegible]	[illegible]							[illegible]		[illegible]			
				Average																
14		EME	CO1	Remember and recognize the various energy sources and environmental issues like global warming and ozone depletion	Understand	[illegible]	[illegible]	[illegible]		[illegible]		[illegible]					[illegible]			
			CO2	Explain - The basic concepts of Thermodynamics, modes of heat transfer, and working mechanisms of Lathe, Milling and Grinding machines	Understand	[illegible]	[illegible]	[illegible]									[illegible]			
			CO3	Establish - The concept of parallel flow and counter flow heat exchangers and develop the idea about welding, brazing and soldering	Apply	[illegible]	[illegible]	[illegible]		[illegible]							[illegible]			
			CO4	Explain - The concept of welding, various elements involved in machines and their design	Understand	[illegible]	[illegible]	[illegible]		[illegible]							[illegible]			
			CO5	Explain - The concept of various casting processes and metal forming processes	Understand	[illegible]	[illegible]	[illegible]		[illegible]							[illegible]			
				Average		[illegible]	1.8	2	-	2.7	-	3	-			-	2.4	-	-	-
15	[illegible]	CHEMISTRY LAB	CO1	Able to identify and determine the composition of liquid samples like FAS	Apply	[illegible]	[illegible]	-	-	-	-	[illegible]	[illegible]	[illegible]	-	-	[illegible]	-	-	-
			CO2	Able to identify parameters of water and find out hardness, chloride and alkalinity	Apply	[illegible]	[illegible]	-	-	-	-	[illegible]	[illegible]	[illegible]	-	-	[illegible]	-	-	-
			CO3	Able to operate instruments to estimate HCl, CH_3COOH, FAS	Remember	[illegible]	[illegible]	-	-	-	-	[illegible]	[illegible]	[illegible]	-	-	[illegible]	-	-	-
			CO4	Able to synthesize polystyrene and polymer materials	Understand	[illegible]	[illegible]	-	-	-	-	[illegible]	[illegible]	[illegible]	-	-	[illegible]	-	-	-
			CO5	Able to verify Beer-Lambert's law and estimate Manganese	Remember	[illegible]	[illegible]	-	-	-	-	[illegible]	[illegible]	[illegible]	-	-	[illegible]	-	-	-
				Average																
			CO1	Enhance Pronunciation & articulation Skills, ensuring good knowledge of Phonetics to pronounce words on the lines of R.P.	Understand										[illegible]		[illegible]			
			CO2	Speak the Language coherently with a lesser MTI, applying right Word Stress and Intonation	Apply										[illegible]		[illegible]			

Faculty Signature

Head of the Department
Department of H & S
[illegible] College of Engg. & Tech.

METHODIST
COLLEGE OF ENGINEERING & TECHNOLOGY
(An UGC AUTONOMOUS INSTITUTION)
Accredited by NAAC with A+ and NBA
Affiliated to Osmania University & Approved by AICTE
Estd : 2008

CO'S & CO-PO MAPPING , SEM-I 2022-23

DEPARTMENT OF HUMANITIES & SCIENCES

S No	Code	Course Title	CO No.	Course Outcome	Taxonomy	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
1	BS202HS	ENGINEERING MATHEMATICS II	CO1	To define Sequence and series, list the properties of Beta, Gamma, Error Functions, properties of Laplace and Inverse Laplace Transforms.	Remember/ Understand	1	-	-	-	-	-	-	-	-	-	-	-			
			CO2	To apply various tests for convergence of given series. Apply Solution of first Order Differential Equations to find the Orthogonal Trajectories. Explain the relation between Gamma and Beta function, Finding L.T of functions.	Apply	3	-	-	-	-	-	-	-	1	1	-	-			
			CO3	To solve D.E of first, second and higher order. Also solving D.E with constant coefficients using Laplace Transforms	Apply	3	-	-	-	-	-	-	-	1	1	-	-			
			CO4	To examine the convergence of a given sequence and D.E of first order. Determine the current in LR, LC & LCR Circuits	Apply	3	-	-	-	-	-	-	-	1	1	-	-			
			CO5	To Classify Ordinary and Singular Points of a given D.E. Evaluate integrals using special functions and Laplace Transforms	Analyse	3	-	-	-	-	-	-	-	1	1	-	-			
				Average		3		-		-	-	-	-	1.2	1.5	-	-			
2	[illegible]	APPLIED PHYSICS	CO1	Explain the basic concepts, definitions, comprehend the fundamental physics ideas in engineering	Understanding	3	-	-	-	-	-	-	-	2	2	-	-			
			CO2	Apply the basic knowledge of physics in Band theory, Planck's theory, PN junction diode, Hall effect, and Thermistor	Applying	3	-	-	-	-	-	-	-	1	1	-	-			
			CO3	Analyse and classify the materials into Dielectric, Magnetic Materials and Superconducting materials	Understanding & Applying	3	-	-	-	-	-	-	-	2	2	-	-			
			CO4	Make use of knowledge of materials to study the Characteristics and properties of Laser, Fibre optics and find its applications	Applying	3	-	-	-	-	-	-	-	-	-	-	-			
			CO5	Understanding the nature of materials based on their dimensions and studying preparation of materials and its applications	Understanding & Analysing	3	-	-	-	-	-	-	-	1	1	-	-			
				Average		3	-	-	-	-	-	-	-	1.5	1.5		-			
3	ES201CS	PROGRAMMING FOR PROBLEM SOLVING	CO1	Explain features and structure of C type conversion, operators, storage classes, recursion, pointers for handling operations	Understand	3														
			CO2	Write components of computer system, flowchart for algorithms and types of files	Apply	1		3												
			CO3	Apply the knowledge of coding for the problem solving and compilation.	Apply	3	3	3	3											
			CO4	Apply the knowledge of conditional branching, loops, arrays and strings to pass functions call by value, call by reference with dynamic memory allocation concept.	Apply	3											3			
			CO5	Write searching and sorting algorithms with help of arrays and about command line arguments, structures and unions.	Apply	3											3			
				Average																
4	ES202EE	ELEMENTS OF ELECTRICAL & ELECTRONICS ENGINEERING	CO1	Explain & illustrate the concepts of Electrical Circuits, operation & Armature circuit equations in DC Machines, AC Machines, diodes, oscillators & filters and Transistors.	Understanding	3								1	2			3	3	
			CO2	Apply & identify the concepts of series – parallel circuits, DC & AC Machines & Losses and efficiency, CRO & CRT and BJT & FET	Applying	3								2	3			3	3	
			CO3	Construct the DC & AC Machines, CRO & CRT and BJT & FET	Applying	3								1	2			3	2	
			CO4	Analyze electrical circuits with Network theorems, Nodal & Mesh Analysis, Production of RMF in 3 phase induction motors and distinguish the speed control methods in DC Motors.	Analyzing		3											1	3	
			CO5	Compare types and EMF Equations DC Machines, Half & Full wave Rectifiers and Configurations of Transistors (CB, CE, CC)	Analyzing		3											3	3	
				Average		3	3							2	3			3	3	

5	MC201CE	ENVIRONMENTAL SCIENCES	CO1	Describe the various types of natural resources.	Understanding	-	-	-	-	-	1	1	-	-	-	-	1	-	-	-
			CO2	Differentiate between various biotic and abiotic components of ecosystem.	Understanding	-	-	-	-	-	1	2	-	-	-	-	2	-	-	-
			CO3	Define the values, threats of biodiversity, the methods of conservation, endangered and endemic species of India.	Remembering	-	-	-	-	1	1	1	-	-	-	-	1	-	-	-
			CO4	Illustrate causes, effects, control measures of various types of environmental pollutions.	Analysing	-	-	-	-	1	1	1	1	-	-	-	1	-	-	-
			CO5	Explain the methods of water conservation, causes, effects of climate change & global warming.	Understanding	-	-	-	-	-	-	1	2	-	-	-	1	-	-	-
				Average						1	1	1	1.5				1			
6	AS202PH	APPLIED PHYSICS LAB	CO1	Develop analytical/experimental skills and impart prerequisite hands on experience for engineering laboratories.	Understanding	3	3	3	-	-	-	-	2	3	-		3			
			CO2	Understand the need for precise measurement practices for data recording.	Understanding	3	3	3	-	-	-	-	2	3	-	-	3			
			CO3	Understand the principle, concept, working and applications of relevant technologies and comparison of results with theoretical calculations.	Understanding & Analysing	2	2	3	-	-	-	-	2	3	-	-	2			
			CO4	Analyze the techniques and skills associated with modern scientific tools such as lasers and fiber optics.	Understanding & Applying	3	3	3	-	-	-	-	2	3	-	-	3			
			CO5	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results.	Understanding & Analysing	1	1	2	-	-	-	-	1	2	-	-	2			
				Average		2	2	2	-	-	-	-	2	2.8	-	-	3			
7	HS201CS	PROGRAMMING FOR PROBLEM SOLVING LAB	CO1	Choose appropriate data type for implementing programs in C language.	Create	3	3	2	2	1				2			2	2	2	1
			CO2	Design and implement modular programs involving input output operations, decision making and looping constructs.	Understand	3	3	2	1	2				2			1	3	2	2
			CO3	Apply the concept of arrays, pointers for implementing programs and string handling.	Create	2	3	3	1	2				1			2	3	1	1
			CO4	Design and implement programs to store data in structures and files.	Understand	3	3	1	1	3				2			3	2	2	2
			CO5	Develop confidence for self education and ability for life long learning need for computer languages.	Apply	3	2	2	2	3				1			2	3	2	1
				Average		2.8	2.4	1.8	1.4	2.6				1.6			2	2.8	2.3	1.6
8	ES203EE	ELEMENTS OF ELECTRICAL & ELECTRONICS ENGINEERING LAB	CO1	Explain common electrical components and their ratings.	Understand	3								3	1					
			CO2	Analyze performance of DC and AC electrical circuits.	Analyze		3							3	3					
			CO3	Analyze performance of electrical machines.	Analyze		3							3	3			2		2
			CO4	Design diode circuit and understand application of Zener diode.	Create			3						3	3			2		2
			CO5	Analyze characteristics of BJTs and FET's.	Analyze		3							3	3			2		3
				Average		3	3	3						3	3		-	2	-	2
9	ES252CE	ENGG GRAPHICS & DESIGN LAB	CO1	Use appropriate instruments and apply the engineering conventions to draw engineering objects to scale on a drawing sheet (PO1, PO5)	Applying	3				3								-	3	-
			CO2	**Make** use of Drawing Sheets to draft engineering curves like conics, involutes & cycloids. (PO1, PO5)	Applying	3				3								-	3	-
			CO3	**Make** use of Drawing Sheets to draft projections of lines, planes, solids and determine unknown lengths & angles in lines. (PO1, PO5)	Applying	3				3								-	3	-
			CO4	**Make use** of AutoCAD software to draft sections of solids and development of surfaces. (PO1, PO5)	Applying	3				3								-	3	-
			CO5	Convert isometric views to orthographic & vice versa. (PO1,PO5)	Applying	3				3								-	3	-
				Average		3	-	-	-	3	-	-	-	-	-	-	-	-	3	-

S.No	Course Code	Course Name	CO	Course Outcome Statement	Level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
10	B[illegible]HS	CHEMISTRY	CO1	Apply concept of electrode potential in identifying feasibility of electrochemical reaction; illustrate electro analytical techniques and working of batteries.	Understanding	3								3	2					
			CO2	Review corrosion control methods and Estimate the physical & chemical parameters of quality of water and explain the process of water treatment.	Applying	3				2			3	3						
			CO3	Explain the influence of chemical structure on properties of materials and their choice in engineering applications.	Evaluating	3				3			3	3						
			CO4	Classify chemical fuels and grade them through qualitative analysis.	Understanding	3							3	3						
			CO5	Relate the concept of green chemistry to modify engineering processes and materials.	Understanding		3						3	3						
				Average																
11	H[illegible]HS	ENGLISH	CO1	[illegible]	Understand										3		3			
			CO2	[illegible]	Understand										2		3			
			CO3	[illegible]	Apply										3		3			
			CO4	[illegible] Paragraph & Essays	Apply										3		3			
			CO5	[illegible]	Apply								3		3		3			
				Average									3		3		3			
12	E[illegible]CS	EM-I	CO1	Define kinematics, kinetics, work-power-energy, virtual work, impulse momentum and classify vibrations.	Understand	3	2	2										3		
			CO2	Apply the laws of dynamics, virtual work and D'Alembert's principle along with the necessary mathematics to solve problems	Apply	3	3	3	3	2	1			3				3		
			CO3	Analyse the connected bodies by differentiating the dynamic problems with static problems and deduce Work energy equation for translation	Analyse	3	2	2	3									3		
			CO4	Analyse and solve problems of kinematics and kinetics	Analyse	3	3	2	2					2				3		
			CO5	Apply the principles of simple harmonic motion to analyze real-world systems, such as springs, pendulums, and waves	Apply	3	3	1										3		
				Average		3.0	2.6	2.4	2.3	2.0	1.0			2.5				3.0		
13	E[illegible]CS	DS	CO1	Analyze the complexities of recursive and Non recursive algorithms.	Analyze	3	2											3	3	
			CO2	Apply the concepts of dynamic memory allocation for reducing the time and space complexity of algorithms.	Apply	3			2								2	3	2	
			CO3	Apply ADT concepts such as arrays, stacks and queues for solving infix to post fix, prefix evaluation.	Evaluate	3			3									3	2	
			CO4	Design and implement the Non linear data structures trees to optimize the solution.	Create	2	3											3	3	
			CO5	Implement linear, binary, hashing searching techniques and sorting techniques	Apply			3	3	2							1	3	3	
				Average																
14	B[illegible]HS	ENGINEERING PHYSICS	CO1	Explain the basic concepts, definitions, comprehend the fundamental physics ideas of waves and oscillations in engineering	Understanding	3	-	-	-	-	-	-	-	2	2					
			CO2	Apply the basic knowledge of physics in crystal structures and its imperfections, powder x-ray diffraction studies	Applying	3	-	-	-	-	-	-	-	3	1					
			CO3	Analyse and classify the materials into Dielectric, Magnetic Materials, ultrasonics, acoustics and Superconducting materials	Understanding & Applying	3	-	-	-	-	-	-	-	2	2					
			CO4	Make use of knowledge of materials to study the Characteristics and properties of Laser, fibre optics and find its applications	Applying	3	-	-	-	-	-	-	-	-	-					
			CO5	Understanding the nature of materials based on their dimensions and its application towards Laser, Ultrasonics and Acoustics	Understanding & Analyzing	3	-	-	-	-	-	-	-	3	1					
				Average		3	-	-	-	-	-	-	-	2.5	1.5					-

15	MS252HS	CHEMESTRY LAB	CO1	Able to identify and determine the composition of liquid samples like FAS	Apply	3	2	-	-	-	-	1	3	3	-	-	3	-	-	-
			CO2	Able to identify parameters of water and find out hardness, chloride and alkalinity	Apply	3	1	-	-	-	-	1	3	3	-	-	3	-	-	-
			CO3	Able to operate instruments to estimate HCL, CH3COOH, FAS	Remember	3	3	-	-	-	-	1	3	3	-	-	3	-	-	-
			CO4	Apply to synthesis drug and polymer materials	Understand	3	2	-	-	-	-	1	3	3	-	-	3	-	-	-
			CO5	Able to verify beers lamberts law and estimate manganese (Mg)	Remember	3	2	-	-	-	-	2	3	3	-	-	3	-	-	-
				Average																
16	HS251HS	ENGLISH LAB	CO1	Enhance Pronunciation & articulation Skills, acquiring good knowledge of Phonetics to pronounce words on the basis of R.P.	Understand										3		3			
			CO2	Speak the Language coherently, with a lesser MTI, applying right Word Stress and Intonation	Apply										3		3			
			CO3	Employ Language and Body Language intelligibly with a good sense of both Verbal and Non-Verbal cues during Public Speaking activities like Intros, JAM s & Role-plays	Apply									3	3		3			
			CO4	Engage in Group Discussions efficiently by taking effective part	Apply								3	3	3		3			
			CO5	Prepare and Produce Decent Presentations, Develop the confidence to present well in the Competitive Platforms and to face … well in the interviews	Apply								3	3	3		3			
				Average									3	3	3		3			
17	ES252ME	ENGINEERING WORKSHOP PRACTICE	CO1	Explain the usage of different tools and processes in various trades with safety measures	Understand	2									1				2	
			CO2	Apply the skills developed to execute various experiments in workshop practice as well as everyday life problems	Apply	3								3	3				3	
			CO3	Demonstrate the various trades such as machining, injection moulding, mould making casting and basic electronics instruments	Understand	3	3							3	3				3	
			CO4	Illustrate the advanced machining processes like CNC / rapid prototyping 3D printing	Understand	2	2			2				3	3				3	
			CO5	Apply the basic knowledge of computer to assemble or disassemble various components computer	Apply	3	2			3				3	2				3	
				Average		2.4	2			2.5				3	3				2.8	
18	ES252CS	DS LAB	CO1	Understand and implement the abstract data type and reusability of a particular data structure	Remembering	1	2	1									1			1
			CO2	Implement linear data structures such as stacks, queues using array and linked list	Understanding	1	2	2									1	1		
			CO3	Understand and implements non-linear data structures such as trees, graphs	Evaluating		2	2	1								1	1		
			CO4	Implement various kinds of searching, sorting and traversal techniques and know when to choose which technique	Creating		2	3	1								1	1		
			CO5	Understanding and implementing hashing techniques	Analysing		2	2	1								1	1		1
				Average		1	2	1.8	1								1	1		1
19	BS252HS	ENGINEERING PHYSICS LAB	CO1	Develop analytical/experimental skills and impart prerequisite hands on experience for engineering laboratories	Understanding	3	3	2	-	-	-	-	3	3	-		3			
			CO2	Understand the need for precise measurement practices for data recording	Understanding	3	2	2	-	-	-	-	2	3	-	-	3			
			CO3	Understand the principle, concept, working and applications of relevant technologies and comparison of results with theoretical calculations	Understanding & Analyzing	3	2	2	-	-	-	-	3	3	-	-	3			
			CO4	Analyze the techniques and skills associated with modern scientific tools such as lasers and fiber optics	Understanding & Analyzing	3	3	2	-	-	-	-	3	3	-	-	3			
			CO5	Develop basic communication skills through working in groups in performing the laboratory experiments and by interpreting the results	Understanding & Analyzing	1	1	2	-	-	-	-	2	2	-	-	2			
						2	2	2	-	-	-	-	2	2.8	-	-	2			

20	[illegible]	BEEE	CO1	Explain & outline of the concepts of Electrical Circuits, Network Theorems, [illegible], Rectifiers and Transistors	Understanding	3								2	2			3	3	
			CO2	Apply Kirchhoff's Laws and Source transformation Technique in a given Electrical Circuits	Applying	3												3	3	
			CO3	Compare BJT, UJT and MOSFET Operating characteristics	Applying	3												3	3	
			CO4	Analyze electrical circuits with Network theorems, Nodal & Mesh Analysis, Star to Delta or Delta to Star Transformation	Analyzing		3											3	2	
			CO5	Compare Half & Full wave Rectifiers and Configuration of Transistors (CB, CE, CC)	Analyzing		3											3	3	
				Average		3	3							2	2			3	3	
21	MC204ME	PME	CO1	Apply knowledge of various energy sources (fossil fuels, renewables) to assess environmental impacts, demonstrating proficiency in addressing global warming and ozone depletion concerns																
			CO2	Understanding the first and second laws, as well as applying the steady flow energy equation for open systems																
			CO3	Applying classification and performance parameters, on internal combustion engines and gas turbines, distinguishing between cycles and calculating efficiencies																
			CO4	of Reynolds number, analyze performance curves, and make informed judgments about pump and turbine efficiencies																
			CO5	understanding of welding, casting, and metal forming processes, demonstrating the ability to choose appropriate techniques for specific applications																
				Average																
22	ES205ME	PME LAB	CO1	Determine the Coefficient of Discharge of Venturimeter and Orifice meter	Analyzing															
			CO2	Evaluate the performance of Centrifugal, and Reciprocating pumps	Evaluating															
			CO3	Evaluate the performance of Pelton, Francis, Kaplan Turbines	Evaluating															
			CO4	Evaluate the performance of four stroke SI and CI Engine	Evaluating															
			CO5	Understand the design of patterns, mould making procedures and casting process	Understand															

Faculty Signature

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DEPARTMENT OF MECHANICAL ENGINEERING

III SEMESTER - BE COURSE OUTCOMES FOR A.Y :2022-2023

S.NO	CODE	COURSE NAME	CO NO.	COURSE OUTCOMES	Taxonomy Level
1	6PC301ME	Thermodynamics	CO1	Define Thermodynamics concept of Zeroth law of thermodynamics, Temperature Scales and Thermodynamics Equilibrium, partial pressures and partial volumes.	Remember
			CO2	Evaluate Heat and work interactions and calculate work done during flow processes.	Evaluate
			CO3	Determine of entropy change during various thermodynamic processes.	Evaluate
			CO4	Make use of steam Tables and Mollier diagram for properties of steam.	Apply
			CO5	Determine efficiency of power cycles.	Evaluate
			CO6	Solve the problems on heat engine, heat pump and refrigerator.	Apply
2	6PC302 ME	Strength of Materials	CO1	Understand the basic principles of stress and strain and their relationship with material properties.	Understand
			CO2	Analyze the behaviour of structural members under combined loading conditions and the use of Mohr's circle for stress analysis.	Analyze
			CO3	Able to draw shear force and bending moment diagrams for different types of loads and beam configurations and calculate the maximum bending stress in a beam and its location.	Apply
			CO4	Analyze the shear stresses in circular and non-circular shafts under Torsional loading	Analyze
			CO5	Calculate the deflection of beams using different methods, such as integration, Macaulay's method	Apply
			CO6	Design springs and cylindrical structures to meet specified strength and deformation requirements	Create
3	6PC303 ME	Metallurgy and Material Science	CO1	Explain the structure of materials at various levels and testing their mechanical properties.	Understand
			CO2	Describe fatigue, creep failure and experimentally determine fatigue, creep strength, also list different types of fracture.	Understand
			CO3	Explain phase diagrams and identify various phases, composition by analyzing the phase diagrams.	Analyze
			CO4	Classify different types of plain carbon steels, cast irons and explain their applications.	Analyze
			CO5	Explain various heat treatment techniques, effects of the alloying elements on the properties of steel and select various alloying elements for a particular engineering application.	Apply
			CO6	Explain the properties, of non-ferrous metals, ceramics, polymers, composites and choose a particular material for	Apply
		dving	CO1	Formulate simple algorithms for arithmetic and logical problem;Translate the algorithms to programs.	Understand

4	6ES301 CS	Programming For Problem So	CO2	Test and execute the programs and correct syntax and logical errors.	Apply
			CO3	Implement conditional branching, iteration and recursion.	Evaluate
			CO4	Decompose a problem into functions and synthesize a complete program using divide andconquer approach Use arrays, pointers, structures and file management to solve real world problems.	Analyz
			CO5	Construct recursive programs and use structures to formulate algorithms and programs.	Create
			CO6	Apply programming to solve problems using pointer and understand linked list and file handling programs.	Understand Apply
5	6BS303 HS	Numerical Methods and Partial Differential Equations	CO1	Find the solution of algebraic and transcendental equations using numerical methods	Apply
			CO2	Apply numerical techniques to solve ordinary differential equations and definite integrals	Understand
			CO3	Apply numerical methods to interpolate values and fit different curves from given data.	Evaluate
			CO4	Find solution of first order linear and non linear partial differential equations..	Create
			CO5	Apply the solutions of partial differential equations to physical problems.	Analyse
6	6HS303 HS	Human Values and Professional Ethics	CO1	Understand the significance of value inputs in a classroom and start applying them in their life and profession	Understand
			CO2	Assess their own ethical values and the social context of problems	Evaluate
			CO3	Distinguish between values and skills, happiness and accumulation of physical facilities, the Self and the Body, Intention and Competence of an individual, etc.	Analyse
			CO4	Understand the role of a human being in ensuring harmony in society and nature.	Understand
			CO5	Distinguish between ethical and unethical practices, and start working out the strategy to actualize a harmonious environment wherever they work.	Analyse
7	6PC351 ME	Metallurgy & Material Testing Lab	CO1	Apply the procedure for preparing the sample for metallographic observation.	Apply
			CO2	Identify different materials by examining the phases in their microstructure.	Apply
			CO3	Analyze the effects of various heat treatment by studying the grain structure	Analyze
			CO4	Determine the tensile, compressive and impact strength for various materials	Evaluate
			CO5	Measure hardness, shear strength and check their suitability for a given design requirement.	Evaluate
			CO6	Determine the shear force,bending moment and Youngs modulus of different beams under various loading	Evaluate
8	6PC352 ME	omputer Aided Machine Drawing	CO1	Develop the skills in draftingvarious machine components using AutoCad software.	Understand
			CO2	Interpret the conventions & symbols used in technical drawings into their physical meanings & vice versa	Understand
			CO3	Construct orthographic views of simple machine components.	Apply
			CO4	Demonstrate the working knowledge in solidworks to model, assemble and generate orthographic views.	Understand
			CO5	Develop 3D models, assemble and generate drawings of components using Solidworks.	Evaluate

		C	CO6	Observe 3D interactive CAD models and determine the steps used in modelling them.	Evaluate
9	GES351 CS	Programming For Problem Solving Lab	CO1	Choose appropriate data type for implementing programs in C language	Understand
			CO2	Design and implement modular programs involving input output operations, decision making and looping constructs	Apply
			CO3	Apply derived data types and implement programs to store data in structures and files	Evaluate
			CO4	Develop confidence for self-education and ability towards lifelong learning need of computer languages	Analyze
10	GMC351 ME	Solid Edge Certification Course	CO1	Model 3D mechanical parts using synchronous and ordered modelling techniques in solid edge.	Apply
			CO2	Assemble. find interference & analyse motion of complex machinery using solid edge.	Apply
			CO3	Modify geometries imported in neutral formats like IGES. STEP & Parasolid as per requirements.	Apply
			CO4	Carry out simulations to analyse & optimise parts & assemblies using solid edge.	Analyze
			CO5	Understand development of production drawings & tools to produce rendered images of products.	Understand

Dept. Assessment Coordinator

Head of the Department

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DEPARTMENT OF MECHANICAL ENGINEERING

V SEMESTER - BE COURSE OUTCOMES FOR A.Y :2022-2023

S.NO	CODE	COURSE NAME	CO NO.	COURSE OUTCOMES	Taxonomy Level
1	PC408 ME	Hydraulic Machines	CO1	Classify and Explain the Hydraulic Machines,impact of jet on different vanes.	Understand
			CO2	Interpret the knowledge of reciprocating pumps analyze its performance.	Apply
			CO3	Design, estimate the unit quantities and specific parameter of centrifugal pumps.	Evaluate
			CO4	Design & analyze performance characteristics of Pelton wheel. Kaplan turbine and Francis turbine.	Analyze
			CO5	Interpret and Explain Industrial Hydraulics and Hydraulic systems.	Understand
			CO6	Demonstrate physical significance of Hydraulic turbines and surge tanks, draft tubes.	Understand
2	PC409 ME	Design of Machine Elements	CO1	Evaluate and Determine the stresses using. concepts of Theories of failure, and to select proper material for machine components.	Evaluate
			CO2	Evaluate the Failure stress of machine components using fatigue theories of failure.	Evaluate
			CO3	Evaluate size of the machine components for torque transmission, bending and axial loads.	Evaluate
			CO4	Analyze the fasteners required for a given application and predicting its efficiency.	Analyze
			CO5	Analyze type of joints, power screws.	Analyze
			CO6	Differential and compound screws and predicting its efficiency.	Analyze
3	PC410 ME	Dynamics of Machines	CO1	Understand the gyroscopic effects in ships, aero planes and road vehicles.	Understand
			CO2	Analyze and design centrifugal governors& Flywheels.	Analyze
			CO3	Analyze balancing problems in rotating machinery.	Analyze
			CO4	Analyze balancing problems in reciprocating machinery.	Analyze
			CO5	Understand free and forced vibrations of single degree freedom systems.	Understand
			CO6	Understand Torsional vibrations of single degree freedom systems.	Understand
4	PC411 ME	Metrology and Instrumentation	CO1	Explain the concepts of limits , fits and tolerances and their applications,gauges (plug, ring & snap), end bars, linear & angular measurements byVernier, Micrometers, Sine bar, Autocollimators.	Evaluate
			CO2	Explain the concepts of comparators along with their types, Optical projectors,and Microscopes for measuring flatness, roundness & coordinate geometrics.	Evaluate
			CO3	Explains the importance of surface roughness & its measurement, gear toothconcepts with measurement, & testing of machine tools like lathe, drill &milling.	Evaluate
			CO4	Illustrate the basic measuring system, static and dynamic characteristics of instruments.	Understand
			CO5	Explain the concepts and various working principles of measure pressure,different transducers for measurement of displacement, strain and torsion .	Evaluate
			CO6	Explain the concept of various pressure measuring and temperature measuring instrumentation	Evaluate

5	PC412 ME	Heat Transfer	CO1	Describe heat conduction problems in rectangular, cylindrical and spherical coordinates.	Understand
			CO2	Analyze heat transfer through the fins and familiarize with the time dependent heat transfer.	Analyze
			CO3	Estimate the convective heat transfer coefficient in Free and Forced convection.	Evaluate
			CO4	Determine the radiation heat transfer by calculating the emissivities and shape factors.	Evaluate
			CO5	Determine the LMTD and NTU in heat exchangers	Evaluate
			CO6	Explain the mechanisms involved in boiling and condensation.	Understand
6	PE512 ME	Automobile Engeering	CO1	Explain the different parts and constructional details of the automobile engines.	Understand
			CO2	Discuss the working of various systems like engine lubricating system and cooling system, types of ignition system and different batteries used in automobile.	Understand
			CO3	Explain the working principle of steering and suspension systems and constructional details of wheels and tyres of automobile.	Understand
			CO4	Establish the constructional and working principle of braking system and its importance in Automobile engines.	Apply
			CO5	Discuss the transmissions of power from the engine to wheels through the clutch plates and differential gear box.	Understand
			CO6	Discuss the environmental implications of automobile emissions and strong base for understanding future developments in the automobile industry.	Understand
7	PE513 ME	Industrial Engineering	CO1	Apply the knowledge of scientific management in industrial environment.	Apply
			CO2	Demonstrate the importance of production. planning & control in manufacturing industry	Understand
			CO3	Estimate the appropriate inventory control models and financial management practice are applied in industries.	Evaluate
			CO4	Analyses the quality control charts and sampling plan in production unit.	Analyse
			CO5	Apply the concept of decision making theory and uncertainty risk in work place.	Apply
			CO6	Develop industrial engineering concepts in industrial environment.	Create
8	PC455 ME	TE Lab -2	CO1	Analyze the effective thermal resistance in composite slabs and thermal conductivity of metal bar.	Analyze
			CO2	Evaluate heat transfer coefficient in Free & Forced convection.	Evaluate
			CO3	Evaluate the effectiveness and efficiency of parallel flow and counter flow heat exchanger.	Evaluate
			CO4	Analyze the COP of the Refrigeration test Rig and pressure distribution of specimen in wind tunnel.	Analyze
			CO5	Analyze the overall efficiency of axial flow fan & Centrifugal blower.	Analyze
			CO6	Evaluate the surface emissivity of a test plate& Stefan Boltzmann constant.	Evaluate
9	PC456 ME	Dynamics of Machines Lab	CO1	Analyze the performance and draw the characteristic curves for different types of governors.	Analyze
			CO2	Evaluate the effect of gyroscopic couple at different speeds.	Evaluate
			CO3	Evaluate kinematic and dynamic behavior of different types of cams.	Evaluate
			CO4	Evaluate static and dynamic balancing of rotating masses.	Evaluate
			CO5	Analyze natural frequencies of various beams with different constraints.	Analyze
			CO6	Determine the critical speed for shafts of various diameter.	Evaluate

10	PC457 ME	Fluid Mechanics and Hydraulic Machinery Lab	CO1	Determine the impact of jet on different types of vanes	Evaluate
			CO2	Determine the efficiencies of various pumps and draw the characteristic curves.	Evaluate
			CO3	Determine the efficiencies of various turbines and draw the characteristic curves.	Evaluate
			CO4	Evaluate the coefficient of discharge of various flow meters and draw the characteristic curves.	Evaluate
			CO5	Explain the principle of Hydraulic Circuit	Understand
			CO6	Explain Pneumatic Circuits by studying the models.	Understand

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DEPARTMENT OF MECHANICAL ENGINEERING

VII SEMESTER - BE COURSE OUTCOMES FOR A.Y :2022-2023

S.NO	CODE	COURSE NAME	CO NO.	COURSE OUTCOMES	Taxonomy Level
1	PC701 ME	OPERATIONS RESEARCH	CO1	To prepare the students to have the knowledge of Linear Programming Problem in operations Research at the end students would be able to understand the concept and develop the models for different applications.	Apply
			CO2	Make students understand the concept Replacement models at the end students would able to explain various features and applications of replacement models in real time scenario.	Understand
			CO3	Prepare the students to understand theory of Game in operations research at the end students would able to explain application of Game theory in decision making for a conflict	Evaluate
			CO4	Prepare the students to have the knowledge of Sequencing model at the end student would able to develop optimum model for job scheduling.	Apply
			CO5	Prepare students to understand Queuing theory concepts and various optimization techniques at the end students would able to develop models for waiting line cases.	Apply
2	PC702 ME	Rerigeration and Air Conditioning	CO1	Relate methods of refrigeration and importance of refrigerant selection	Apply
			CO2	Design Air refrigeration and VCR system with methods o improve perfromance	Understand
			CO3	Compare VAS with VCR system, steam jet refrigeration and Thernoelectric refrigeration	Evaluate
			CO4	Identify various air conditioning processes on Psychrometric Chart	Analyse
			CO5	Design Air Conditioning System with use of psychrometric chart	Apply
			CO6	Explain the types of air conditioning systems, components and applications	Create
3	PE711 ME	Industrial Engineering	CO1	Apply the knowledge of scientific management in industrial environment.	Apply
			CO2	Demonstrate the importance of production, planning & control in manufacturing industry	Understand
			CO3	Estimate the appropriate inventory control models and financial management practice are applied in industries.	Evaluate
			CO4	Analyses the quality control charts and sampling plan in production unit.	Analyse
			CO5	Apply the concept of decision making theory and uncertainty risk in work place.	Apply
			CO6	Develop industrial engineering concepts in industrial environment.	Create
4	PE721 ME	Additive Manufacturing Technology	CO1	Describe the fundamentals of additive manufacturing, classify and explain advantages and disadvantages of AM process.	Understand
			CO2	Describe the operating principles, capabilities and limitations of liquid and solid based additive manufacturing systems.	Understand
			CO3	Explain the operating principles, specifications, advantages and disadvantages of powder based additive manufacturing systems.	Understand
			CO4	Selection of correct CAD data formats and software's and AM software skills in additive manufacturing technology.	Analyze
			CO5	Applying the capabilities of additive manufacturing in different industrial sectors.	Apply
			CO6	Exploring the different applications of AMT and applying it in various fields through AM software's.	Apply

5	OE701 CE	GBT- Green Building Technology	CO1	Define green buildings and sustainable development.	Understand
			CO2	Apply the criteria for site selection as per the green building rating systems.	Understand
			CO3	Explain the typical features of green buildings.	Understand
			CO4	Identify the methods to reduce water consumption in buildings.	Understand
			CO5	Explain how rainwater harvesting can be used to conserve water.	Understand
			CO6	Identify the different types of waste generated in construction.	Understand
6	OE701 EE	Non Conventional Energy Sources	CO1	List and Compare the various forms of non conventional energy resources and analyze the different Fuel cells with applications of fuel cells.	Analyze
			CO2	Explain the solar energy applications and calculations of solar energy .	Analyze
			CO3	Analyzing how wind energy can be tapped from the nature and its calculations.	Analyze
			CO4	Illustrate the concepts of Geothermal ,Wave, Tidal energy & OTEC.	Understand
			CO5	Outline the Biogas & Biomass, its mechanism of production of energy and its applications.	Understand
7	PW702 ME	Project Work - I	CO1	Adapt the attitude of writing reviews on the literature	Create
			CO2	Develop practical & professional skills	Apply
			CO3	Apply the tools and technicals of documentations	Apply
			CO4	Make use of the Team work	Apply
			CO5	Develop to the industrial practice and Research Practices	Apply
			CO6	Develop skill to work with Innovative and entrepreneurial ideas	Apply

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DEPARTMENT OF MECHANICAL ENGINEERING

IV SEMESTER - BE COURSE OUTCOMES FOR A.Y :2022-2023

S No	Code	Course Name	Faculty Name	CO No.	Course Outcomes	Taxonomy Level
1	6ES403CS	Python Programming	Dr. Fakhruddin H.N	CO1	How to be able to introduce core programming basics	Remembering
				CO2	Design program with functions using Python programming language.	Creating
				CO3	Summarize a range of Object-Oriented Programming.	Understanding
				CO4	Organize in-depth data and information processing techniques.	Applying
				CO5	Match the high-performance programs designed to strengthen the practical expertise	Remembering
2	6PC404ME	Applied Thermodynamics	Mr. Y.M.M Reddy	CO1	Understand the principles and types of air compressors, internal combustion engines, combustion in IC engines, steam boilers, steam power plants and nozzles	Understanding
				CO2	Demonstrate the safe operation and maintenance of air compressors, IC engines, steam power plants, boilers and nozzles	Applying
				CO3	Apply the principles of thermodynamics and fluid mechanics to analyze the thermodynamic cycles of IC engines and evaluate	Applying
				CO4	Apply knowledge of IC engine design and operation to perform basic maintenance and repair tasks safely and effectively	Applying
				CO5	Analyze and evaluate the performance of different types of air compressors, types of steam boilers, nozzles, IC engines and factors affecting combustion in IC engines	Analyzing
3	6PC405ME	Manufacturing Processes	Dr. A. Rajasekhar	CO1	Describe the basic principle and working of various types of basic manufacturing processes.	Understanding
				CO2	Discuss the materials, equipment and tooling used in various manufacturing processes.	Understanding
				CO3	State the advantages and limitations of various manufacturing processes.	Remembering
				CO4	Select appropriate manufacturing process based on the type of industrial use/application.	Understanding
				CO5	Demonstrate the knowledge in identifying the possible defects, their causes and remedies of various manufacturing processes.	Applying
4	6PC406ME	Fluid Mechanics & Hydraulic Machines	Dr. M. Uday Kumar	CO1	Explain the concepts of properties of fluids , Types of flows, flow through pipes, Hydraulic Turbines and pumps	Understanding
				CO2	Interpret the knowledge of pressure measurement devices, stream lines and pathlines, shear stress and pressure gradient relationship, pelton, Francis, Kaplan turbines,centrifugal and reciprocating pumps	Evaluating
				CO3	Analyze the pressure gauges and Manometrs, continuity, stream and velocity functions, total energy lines,.velocity triangles of turbines and pumps	Analyzing
				CO4	Develop the equations of motion, Darcy-Weisbach equation, workdone and efficiencies of turbines and pupms	Applying
				CO5	Estimate the coefficient of discharge of flow meters, friction factors, drag and lift coefficients,efficiencies, unit quantities and specific speed of hydraulic turbines and pumps	Applying

5	6PC407ME	Kinematics of Machines	Mr. Srikanth R	CO1	Identify links & joints, determine mobility & explain motion of a connected system of links	Applying
				CO2	Analyse motion of planar mechanisms & their equivalent chains.	Analyzing
				CO3	Identify & explain the applications of commonly used mechanisms.	Applying
				CO4	Solve problems involving velocity & acceleration of planar mechanisms with given dimensions at specified positions.	Applying
				CO5	design gear trains for specified speed ratios and cams & followers for specified motion profiles	Applying
6	6MC402HS	Essence of Indian Traditional Knowledge	Ms. Deepthi	CO1	Understand the concepts of indian culture and traditions and their importance.	Understanding
				CO2	Distinguish Indian languages and literature.	Understanding
				CO3	Learn the philosophy of ancient,medieval and modern India.	Understanding and Applying
				CO4	Acquire the information about the fine arts of India.	Understanding and Applying
				CO5	Know the contribution of scientists of different eras,interpret the concepts and the importance to protect intellectual property of the nation.	Understanding
7	6ES453CS	Python Programming Lab	Dr. Fakhruddin H.N	CO1	Develop solutions to simple computational problems using Python programs	Applying
				CO2	Solve problems using conditionals and loops in Python	Applying
				CO3	Develop Python programs by defining functions and calling them.	Applying
				CO4	Make use of Python lists, tuples and dictionaries for representing compound data.	Applying
				CO5	Develop Python programs for GUI applications	Applying
8	6PC453ME	Applied Thermodynamics La	Mr. Y.M.M Reddy	CO1	Determine volumetric efficiency and isothermal efficiency of a two stage reciprocating air compressor.	Evaluating
				CO2	Construct port timing diagram of two stroke engine, valve timing diagram of four stroke engine	Applying
				CO3	Evaluate the performance of internal combustion engines	Evaluating
				CO4	Develop heat balance sheet of internal combustion engine	Creating
				CO5	Determine the properties of (flash point, fire point, viscosity, etc---) given lubricating oil	Evaluating
9	6PC454ME	Manufacturing Processes Lab	Mrs.Shazia Anwar	CO1	Explain the design of patterns, mould making procedures and testing the sand properties.	Understanding
				CO2	Apply the various joining techniques to fabricate different geometries.	Applying
				CO3	Demonstrate the blanking and piercing operations for simple components..	Remembering
				CO4	Classify the Applications of plastics and manufacture a simple component by using plastic injection moulding processes..	Applying
				CO5	Evaluate the mechanical properties of welded joints.	Applying

10	6PC455ME	Fluid Mechanics & Hydraulic Machines Lab	Dr. M. Uday Kumar	CO1	Determine the Coefficient of Discharge of Venturimeter and Orifice meter	Analyzing
				CO2	Evaluate the performance of Centrifugal, Reciprocating, Gear, Self priming pumps	Evaluating
				CO3	Evaluate the performance of Pelton ,Francis ,Kaplan Turbines	Evaluating
				CO4	Determine the coefficient of Jet on Vanes	Applying
				CO5	Explain the principles of Hydraulicand Pneumatic circuits and models	Understanding

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VI SEMESTER - BE COURSE OUTCOMES FOR A.Y :2022-2023

S No	Code	Course Name	Faculty Name	CO No.	Course Outcomes	Taxonomy Level
1	PC 413 ME	Machine Design	Dr. M Prasad	CO1	State the function of springs, gears, Bearings, IC Engine parts and theory of bending of members with initial curvature	Remembering
				CO2	Summarize the Materials for springs, Gears, Bearings, IC Engine components , Rope and Chain drives	Understanding
				CO3	Select Various types of Springs ,Bearing, Gear drives and, drive systems for specific applicatinns	Applying
				CO4	Analyze Helical coil springs , leaf springs Gear and Chain drives, IC Engine components for mechanical systems	Analyzing
				CO5	Determine the design procedure for Helical coil springs , leaf springs Gear and Chain drives, IC Engine components for various mechanical systems	Evaluating
2	PC 414 ME	Metal Cutting and Machine Tools	Dr. Prabhuraj	CO1	Explain cutting tool material, chip formation, source of heat distribution, cutting fluids, tool wear in metal cutting operation	Understanding
				CO2	Demonstrate the working principle of machine tool, grinding machine,abrasive, bonds used for grinding and selection of grinding wheel, threading applicationand jig and fixtures in work place.	Understanding
				CO3	Analyse the Tool Geometry and Nomenclature of single point cutting tool by ASA & ORS systems and Geometry of drilling, milling cutters for Optimum Cutting Speeds for maximum production rate and minimum cost in manufacturing industry. analyse the Gear shaping, Gear hobbing, Gear shaving and grinding in manufcturing industry.	Analyzing
				CO4	Make use of knowledge of Mechanics of metal cutting, Merchant 's analysis, Shear angle, Solutions of Merchant and Lee & Shafer in industry,Tool life & Machinability, Machinability index.	Applying
				CO5	Apply the knowledge of Drilling, Milling and Boring, Indexing methods , Quick return mechanisms in shaping industry,Broaching, Lapping, Honing, Polishing, Buffing, Super	Applying
3	PC 415 ME	Finite Element Analysis	Mr. G Bhaskar	CO1	Formulating the local stiffness matrix into global stiffness matrix, Summarise the basic elasticity equations, analyse the one dimensional elements using minimum potential energy equation.	Creating
				CO2	Analyse the truss element, frames and beam elements along with transformation of local to global matrices	Analyzing
				CO3	Analysę the two-dimensional by using CST in natural coordinate system, Axi-symmetric bodies and	Analyzing
				CO4	Analyse the two -dimensional four nodel iso-parametric element, the heat transfer in one & two dimensional under the steady and unsteady state conditions and torsional circular shafts.	Analyzing
				CO5	Formulate the mass & stiffness matrices of one dimensional beam elements eigen values and eigen vectors using Langarangian and Hemilton principles	Creating

4	PE 522 ME	Production and Operations Management	Mrs. I. Sowjanya	CO1	Understand the different types of production systems and their characteristics, as well as the factors that influence plant location and layout decisions.	Understanding
				CO2	Understand of the principles of work study, including method study and work measurement. Apply standard time calculations, select appropriate methods of rating, and use work sampling to	Understanding
				CO3	Apply various forecasting techniques to predict demand patterns using both qualitative and quantitative methods.	Applying
				CO4	Understand of Materials Requirement Planning (MRP), including its importance, inputs, outputs, and calculations and also gain knowledge of Manufacturing Resource Planning (MRP 2) and Enterprise Resource Planning (ERP)	Understanding
				CO5	Apply the principles of project management to develop network diagrams, differentiate between PERT and CPM, schedule activities using review technique	Applying
5	PE 533 ME	Power Plant Engg.	Dr. MD. Fakhruddin H.N	CO1	Demonstrate the working principle, steam power plant layout, types of coals, coal & ash handling system.	Understanding
				CO2	Illustrate feeding and burning of coal, comprehend the basic working principle of steam power plant and gas turbine power plant	Understanding
				CO3	Identify types of dams & spillways, working principle of hydro power plant, hydrology	Applying
				CO4	Explain the working principle of nuclear fission, types of power plants & reactors	Understanding
				CO5	solve the power plant economy factors, load factors, illustrate the methods to control of pollutants emitted by fossile fuel used in power plants and its safety aspects of power plant operation	Applying
6	OE 601 CE	Disaster Mitigation	Ms. P. Jyotsna	CO1	Explain the terms and concepts of disaster management	Remembering &
				CO2	Summurize the catergories of disasters and their characteristics	Understanding
				CO3	Discuss the framework and measures of pre-disaster , during disaster, post- disaster measures	Understanding
				CO4	Interpret the Indian Disaster Management acts and it's framework	Understanding
				CO5	Describe the application of various technologies to disaster management.	Understanding
7	OE61	Principles of Artificial Intelligence	Mrs. Shaziya Jabeen	CO1	Introduction to Artificial Intelligence, its applications and Problem solving techniques. Also the knowledge representation methods, Planning, Expert systems and their algorithms in AI	Understanding
				CO2	Analyzing different searching algorithms and game playing programs to solve given problems.	Analyzing
				CO3	Apply basic principles of AI in solutions that require problem solving, inference, perception, planning, knowledge representation, and learning.	Analyzing
				CO4	Demonstrate awareness and a fundamental understanding of various applications of AI techniques in intelligent agents, expert systems, probability, artificial neural networks and other machine learning models.	Evaluating
				CO5	To explore the understanding of agent based AI Planning ,logical based agents and Expert systems	Creating

8	PC 458 ME	Metrology and Machine Tools Lab	/ Dr. Mrs. I. Sowjanya Prabhuraj	CO1	Identify and use various instruments for external, internal and angular measurements	Applying
				CO2	Apply the principles of optical measurements in measuring the screw .	Applying
				CO3	Identify and use various types of force and temperature measurement instruments/tools.	Applying
				CO4	Apply the knowledge of metal cutting principles to perform various machine tool operations.	Applying
				CO5	Determine Shear angle, cutting forces, temperatures and tool life in metal cutting processes	Evaluating
9	PC 459 ME	Computer Aided Engineering Lab	Mr. G. Bhaskar	CO1	classify-different types of beams and truss element to perform static analysis	analyzing
				CO2	classify different types of meshing	analyzing
				CO3	analyze the stress and deformations of axi-symmetric bodies and connecting rod	analyzing
				CO4	predict natural frequencies in case of critical load condition.	Creating
				CO5	simulate coupled analysis using static structural and steady state thermal	analyzing
10	PW 701 ME	Summer Internship	Dr. A. Rajasekhar	CO1	Able to design a small and simple product in hardware or software.	Creating
				CO2	Understand complete the task or realize a pre specified target, with limited scope, rather than taking up a complex task and leave it.	Understanding
				CO3	Able to learn to find alternate viable solutions for a given problem and evaluate these alternatives with reference to pre specified criteria;	Evaluating
				CO4	Formulate the selected solution and document the same.	Creating
				CO5	Able to develop a small and simple product in hardware or software.	Creating

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DEPARTMENT OF MECHANICAL ENGINEERING

VIII SEMESTER - BE COURSE OUTCOMES FOR A.Y :2022-2023

S No	Code	Course Name	Faculty Name	CO No.	Course Outcomes	Taxonomy Level
1	PE 813 ME	Power Plant Engineering	G. Bhaskar	CO1	Demonstrate the working principle, steam power plant layout, types of coals, coal & ash handling system.	Understanding
				CO2	Illustrate feeding and burning of coal, comprehend the basic working principle of steam power plant and gas turbine power plant	Understanding
				CO3	Identify types of dams & spillways, working principle of hydro power plant, hydrology	Applying
				CO4	Explain the working principle of nuclear fission, types of power plants & reactors	Understanding
				CO5	solve the power plant economy factors, load factors, illustrate the methods to control of pollutants emitted by fossile fuel used in power plants and its safety aspects of power plant operation	Applying
2	PE823ME	Entrepreneurship Development	Dr. Prabhu Raj	CO1	Explain the Indian industrial environment, opportunities and challenges of women entrepreneur in enterprise, first-generation entrepreneur, project financing in india and Motivational aspects.	Understanding
				CO2	Identify the characteristics of entrepreneurs, importance of linkage among small- medium and heavy industry, collaborative interaction for technology development and Human aspects of project management	Applying
				CO3	Demonstrate the principle of project formulation, market demand, Financial, profitability analysis, Project Management during construction phase in organization and behavioral aspects of entrepreneurs.	Analyzing
				CO4	Evaluate the technical feasibility of a project management, conception and evaluation of ideas and their sources, CPM & PERT techniques and explain the tax assessment burden.	Evaluating
				CO5	Make use of Knowledge of Personality determinants, attributes, Leadership concepts and models, values and attitudes and motivation aspects and Time Management principles.	Applying
3	OE801CE	RSE- Road Safety Engineering	D. BHARATH NAIK	CO1	Explain scenario of road safety in world, accident characteristics, causes, investigation techniques, data collection, analysis and preventive measures	Understanding
				CO2	Explain Traffic Engineering studies, Characteristics, management measures and their influence on road safety	Understanding
				CO3	Explain road safety in planning, designing, equipments used for construction during construction, at construction site and devices used for protection	Understanding
				CO4	Explain Functioning and factors affecting the traffic Signals, road signs and pavement markings	Understanding
				CO5	Expalin road safety audit process, strategies and ITS	Understanding

4	PW703ME	Project Work- II	Dr. MD. FAKHRUDDIN H.N	CO1	Demonstrate the ability to synthesize the knowledge and skills acquired in the academic program to the real-world problems	Understanding
				CO2	Apply the knowledge and skills acquired in the academic program to the real-world problems	Applying
				CO3	Evaluate different solutions based on economic and technical feasibility	Evaluating
				CO4	Effectively plan a project and confidently perform all aspects of project management	Applying
				CO5	Demonstrate effective written and oral communication skills	Understanding

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Department of Electronics and Communication Engineering

Course Outcomes

AY: 2022-23

III Semester

SNO	Course Code	Course Name	CO No.	Course Outcomes	Taxonomy
1	5PC301EC	ELECTRONIC DEVICES	CO1	Understand the PN Diode V-I Characteristics and its applications.	Creating
			CO2	Identify the merits and demerits of various Rectifier circuits with Calculation of Ripple Factor and %Efficiency.	Understandin
			CO3	Discriminate the BJT Configurations to recognize appropriate Transistor Configuration for any given application.	Analyzing
			CO4	Design the the biasing circuits with good stability.	Understandin
			CO5	Analyze , Compare and design of BJT Amplifiers.	Rememberin
			CO6	Distinguish the working principles of BJT and FET.	Rememberin
2	5PC302EC	SIGNALS AND SYSTEMS	CO1	Differentiate various types of signals and systems in continuous and discrete time signals	Understandin
			CO2	Importance of frequency domain analysis and apply Fourier series for continuous time signals	Analyzing
			CO3	Apply the properties of Fourier transform for continuous time signals (TL:3)	Applying
			CO4	Relate Laplace transforms to solve differential equations and to determine the response of the CT- LTI Systems	Evaluating
			CO5	Apply Z-transforms for discrete time signals to solve Difference equations	Evaluating

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			CO6	Determine Linear Convolution and Correlation of discrete time signals with graphical representation	Evaluating
3	5PC303EC	NETWORK THEORY	CO1	Identify different parameters for two-port networks	Understand
			CO2	Explain symmetrical and asymmetrical networks and their electrical properties	Create
			CO3	Design concepts of different filters	Create
			CO4	Design different Types of Attenuator and Equalizers	Remember
			CO5	Explain concepts of Network synthesis like Hurwitz polynomials, Positive real functions	Remember
			CO6	Analyse LC, RC,RL Networks by synthesis	Remember
4	5PC304EC	SWITCHING THEORY AND LOGIC DESIGN	CO1	Explain the basic concepts related to number system and their conversion.	Create
			CO2	Analyze the Boolean logic equations and simplify using K-map and tabular method .	Analyze
			CO3	Analyze the different combinational circuits and implement them using IC's.	Understand
			CO4	Explain the operation of flip flops and converting one flip flop to another.	Apply
			CO5	Analyze the concepts of sequential circuits.	Understand
			CO6	Design the counter using different IC's.	Create
5	5ES303EC	PROBABILITY THEORY AND STOCHASTIC PROCESSES	CO1	Explain definitions of Probability, Axioms, Joint Probability, Conditional Probability, Total Probability, Bayes' Theorem, Independent Events, Random Variable, Conditions of a Random Variable.	Understand
			CO2	Apply the concepts, theorems to derive probability distribution & probability density functions. Expectations, Moments & characteristic functions of Random variable	Apply

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			CO3	Make use of Properties of distribution & density functions to solve Mean, Variance for - Binomial, Poisson, Uniform, Gaussian, Exponential, Rayleigh Distributions.	Apply
			CO4	Explain Multiple random variables i.e Joint density, Joint distribution, Central Limit Theorem, expected values of Multiple random variables.	Understand
			CO5	Explain concepts of Random process, and its properties. Variance, co variance, correlation & auto correaltion.Power & cross power density spectrum and its properties.	Understand
			CO6	Examine different types of Noises and response to a random signal	Evaluating
6	5HS302HS	MANAGERIAL ECONOMICS AND FINANCIAL ACCOUNTING	CO1	Understand the financial and Accounting aspects of a business	Analyse
			CO2	Evaluate financial Performance of the business unit	Evaluate
			CO3	Understand abouf the financial system and markets	Evaluate
			CO4	Evaluate the viability of projects by using Capital budgeting Techniques.	Understand
			CO5	Analyse the overall financial functioning of an Enterprise	Evaluate
			CO6	Understand and take decision on procurement of finances.	Analyze
7	5MC303HS	INDIAN CONSTITUTION	CO1	Know the background of the present constitution of India.	Evaluate
			CO2	Understand the working of the union, state and local levels.	Evaluate
			CO3	Gain consciousness on the fundamentals rights and duties.	Understand
			CO4	Be able to understand the functioning and distribution of financial resources between the	Understand

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				states	
			CO5	Be exposed to the reality of hierarchical Indian social structure and the ways the grievances deprived section can be addressed to raise human dignity in a democratic way.	Evaluate
			CO6	Be able to understand the functioning and distribution of financial resources between the centre and state.	Understand
8	5ES304EC	PYTHON PROGRAMMING	CO1	Explain basic principles of Python programming language.	Understand
			CO2	Create, run, and manipulate Python Programs using core data structures like Lists, Tuple, Set and Dictionaries.	Apply
			CO3	Understand and summarize different File handling operations.	Understand
			CO4	Handle exceptions in programming.	Apply
			CO5	Identify the commonly used operations involving file systems and regular expressions.	Understand
			CO6	Articulate the Object-Oriented Programming concepts such as encapsulation, inheritance and polymorphism as used in Python.	Apply
9	5PC351EC	ELECTRONIC DEVICES AND LOGIC DESIGN LAB	CO1	Understand characteristics of Diodes	Analyze
			CO2	Plot the characteristics of BJT in different configurations	Understand
			CO3	Record the parameters of BJT and FET amplifiers.	Creating
			CO4	Understand biasing techniques of BJT.	Remember
			CO5	Design and performance evaluation of full wave rectifiers	Understand
			CO6	Use the SPICE software for simulating electronic circuits	Evaluate
10	5PC352EC	NETWORK THEOREM LAB	CO1	Use the basic electronic components and design circuits.	Creating
			CO2	Verify various parameters of the circuits by applying theorems.	Analyzing
			CO3	Understand the making of PCB.	Applying
			CO4	Design various filters.	Evaluate

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			CO5	Determine voltages and currents in a resonant circuit	Evaluate
			CO6	Determine network parameters for given two port network	Understand
11	5ES353CS	PYTHON PROGRAMMING LABORATORY	CO1	Write, Test and Debug Python Programs.	Create
			CO2	Implement Conditionals for Python Programs	Apply
			CO3	Implement Loops for Python Programs	Apply
			CO4	Use functions and represent Compound data using Lists, Tuples and Dictionaries	Apply
			CO5	Read and write data from & to files in Python and develop Application using Pygame	Apply

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Department of Electronics and Communication Engineering

Course Outcomes

AY: 2022-23 **IV Semester**

S.no	Course Code	Course Name	CO No.	Course Outcomes	Taxonomy
1	5PC405EC	ANALOG ELECTRONIC CIRCUITS	CO1	design and Analyze various amplifiers using BJT	Analyzing
			CO2	Analyze the frequency response of BJT	Analyzing
			CO3	Understand the concept of negative feedback and effect of negative feedback.	Understandin
			CO4	Design of different types of oscillators	Designing
			CO5	Design of power amplifiers and calculate their efficiencies.	Designing
2	5PC406EC	AUTOMATIC CONTROL SYSTEMS	CO1	Explain the concepts of control systems, time& frequency domain specification, and also concepts of state space representation.	Understandin
			CO2	Apply the concepts of networks, block diagram reduction rules, Mason's gain formula for computing the transfer function of control systems and transfer function of sample data systems.	Applying
			CO3	Analyze the modelling of mechanical systems and stability using time domain techniques.	Analyzing
			CO4	Analyze the control system stability using frequency domain techniques.	Analyzing
			CO5	Analyze the Discrete control systems and the control system in state space representation.	Analyzing
			CO1	Perform mathematical operations on fixed and floating point digital data.	Understandin

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3	5PC407EC	COMPUTER ORGANISATION AND ARCHITECHTURE	CO2	Illustrate the operation of a digital computer.	Analyzing
			CO3	Understand I/O interfacing of a computer.	Analyzing
			CO4	Interface microprocessor with memory devices.	Applying
			CO5	Understand latest trends in microprocessors.	Evaluating
4	5PC408EC	ELECTROMAGNETIC THEORY AND TRANSMISSION LINES	CO1	Understand the different coordinate systems, concepts of electric, magnetic fields, Electromagnetic fields and transmission line parameters	Understandin
			CO2	Apply the principles of electrostatics to the solutions of problems relating to electric field and electric potential, boundary conditions and electric energy density.	Applying
			CO3	Apply the principles of magneto statics to the solutions of problems relating to magnetic field and magnetic potential, boundary conditions and magnetic energy density	Applying
			CO4	Analyze the EM wave propagation in different mediums and understand the concept of transmission lines & their applications.	Analyzing
			CO5	Analyze the SC,OC transmission lines and computing the impedance using smith chart.	Analyzing
5	5PC409EC	IC APPLICATIONS	CO1	Explain Differentiate IC and Discrete components, understand manufacturing process of IC and how monolithic components are being developed	Understandin
			CO2	Apply Learn about the basic concepts for the circuit configuration for the design of linear integrated circuits and & Develop skills to develop simple filter circuits and	Applying

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				various amplifiers and can solve problems related to it	
			CO3	Analyze To study the block diagrams of 555 timer and 565 phase locked loops ICs and use them to construct various applications.,	Analyzing
			CO4	Analyze the basic logic gates by using digital ic . Learn about various techniques to develop A/D and D/A convertors	Analyzing
			CO5	Analyze: The ability to understand, analyze and design various combinational and sequential circuits	Analyzing
6	5MC402HS	ESSENCE OF INDIAN TRADITIONAL KNOWLDEGE	CO1	To outline the history of civilization in Indian context since pre-Vedic times	Understanding
			CO2	To outline the various schools of Indian Philosophy	Understanding
			CO3	To demonstrate the diversity in Indian Thought , Languages , regional culture , dress, living style etc.	Understanding
			CO4	To Identify the various religious and social reform movements which took place in the past few centuries	Applying
			CO5	To classify the wealth of Indian Fine Arts and the diversity associated with it over the length and breadth of the country	Understanding
7	5HS403HS	HUMAN VALUES AND PROFESSIONAL ETHICS	CO1	Ensures students sustained happiness through identifying the essentials of human values	Understandin
			CO2	Ensures students sustained happiness thrugh identifying the essentials of professional ethics	Understandin and Analyzin
			CO3	It facilitates a correct understanding between profession and happiness	Understandin
			CO4	Understand practically the importance of trust, mutually satisfying human behaviour and enriching interaction with nature.	Understanding evaluating
			CO5	Ability to develop appropriate technologies and management patterns to create harmony in professional and personal life.	Analyzing

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8	5PC453EC	AEC LABORATORY	CO1	Calculate gain and bandwidth of BJT, FET.	Understandin
			CO2	Study Feedback amplifier circuits.	Remembering
			CO3	Study oscillator circuits.	Creating
			CO4	Demonstrate filter circuits.	Understandin
			CO5	Demonstrate power amplifier and OpAmp. Circuits	Understandin
9	5PC454EC	IC APPLICATIONS LABORATORY	CO1	Study and performance 0f various parameters of op-amp & Construct linear and non-linear applications circuits .	Applying
			CO2	Design and Analyze different filters & their frequency comparision. (theoritical & practical)	Creating
			CO3	Design different multivibrators and their comparision. (theoritical & practical) by using IC 555	Analyzing
			CO4	Design sequential circuit synchronous & asynchronous counters	Applying
			CO5	Verify Flip-Flop conversions and latches using gates ahd ICs.	Applying

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Department of Electronics and Communication Engineering

Course Outcomes

AY: 2022-23 (AICTE Model Curriculum) **V Semester**

S.no	Course Code	Course Name	CO No.	Course Outcomes	Taxonomy
1	PC408EC	Digital Signal Processing	CO1	Identify the importance of DSP in real time processing	Applying
			CO2	Compute DFT & apply its properties in problem solutions , also optimize the calculation using FFT algorithm	Applying
			CO3	Design, evaluate& construct FIR filters to satisfy desired frequency response by hand	Creating
			CO4	Design,evaluate& construct IIR filters on the basis of an analogue design by hand	Creating
			CO5	Compute & comprehend sampling rate conversions & their applications	Evaluating
			CO6	Understand the importance of DSP processor applications and also comprehend thearchitecture, addressing modes & instruction set of TMS processor	Applying
2	PC409EC	Microprocessor and Microcontroller	CO1	Explain the generalized architecture of microprocessors and microcontrollers. Learn about 8086 Microprocessor and 8051 Microcontroller- different types of addressing modes, instruction set and interrupts.	Understanding
			CO2	Build Interfacing diagram of memory, peripherals using 8086 Microprocessor and 8051 Microcontroller.	Applying
			CO3	Apply 8086 Microprocessor and 8051 Microcontroller instruction set for writing simple assembly language programs.	Applying
			CO4	Explain the algorithm and program for interfacing different peripherals to 8086 microprocessor and 8051 Microcontroller.	Analyzing
			CO5	Write an Assembly/C language program for interfacing different peripherals by using different software tools to 8086 microprocessor and 8051 Microcontroller.	Evaluating

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			CO6	Design Interfacing of real time applications like ADC, DAC, LCD and stepper motor with 8086 microprocessor and 8051 microcontroller.	Create
3	PC410EC	Analog Communication	CO1	Explain and analyze the various continuous modulation systems	Understanding
			CO2	Demonstrate and contrast the different Angle modulation schemes	Analyzing
			CO3	Illustrate and compare the pulse modulation systems	Applying
			CO4	Interpret with , differentiate types of transmitters and receivers used for particular application.	Understanding
			CO5	Identify the noises present in continuous wave modulation systems and analyze Signal to Noise ratio in each system.	Analyzing
			CO6	Students able to Discriminate the design skills to illustrate the different modulation systems and method to implement different communication systems.	Applying
4	PC411EC	Automatic Control Systems	CO1	Students will be able understand fundamentals of control systems & able to apply the rules of block diagram and signal flow graph to obtain overall transfer function	Understanding Applying
			CO2	Students will be able to construct Routh Array/Hurwitz determinant and thus analyze system stability in time domain and time response	Applying and analyzing
			CO3	Students will be able to construct Root locus Technique and thus analyze system stability in time domain	Applying and analyzing
			CO4	Students will be able to construct Bode plots and thus analyze system stability in frequency domain	Applying and analyzing
			CO5	Students will be able to understand the digital control system and its importance	Understanding
			CO6	Students will be able to understand state space representation and hence determine stability, controllability and Observability of a system in state space domain	Determining
5	PC412EC	Antennas and wave	CO1	Illustrate the basic principles of antennas and learn the antenna terminology.	Understanding

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		propagation	CO2	Design different types of wire antennas and make proficient in analytical skills for understanding practical antennas.	Applying
			CO3	Design different types of antennas for various frequency ranges and get updated with latest developments in the practical antennas.	Creating
			CO4	Apply the principles of antennas, to design antenna arrays and measure various parameters of antennas.	Analyzing
			CO5	Identify and understand the suitable modes of Radio Wave propagation used in current practice.	Evaluating
			CO6	Analyze the structure of atmosphere for the wave propagation	Analyzing
6	HS104ME	Industrial Administration and Financial Management	CO1	Illustrate the types of various business organizations, organization structures, functions of management and able to choose the proper plant layout.	Applying
			CO2	Explain the concept of Work Study and apply work measurement techniques for the calculation of standard time, and the concept of performance rating factors.	Applying
			CO3	Explain various concepts of Job evaluation, performance appraisal and wage payment system and able to apply these techniques.	Applying
			CO4	Demonstrate the concepts of Quality control, process control, material control and by use of control charts could evaluate whether the quality of a product or process in a plant.	Evaluating
			CO5	Demonstrate techniques like Linear Programming, Assignment and Project management & Material Management techniques and able to apply these techniques for optimum utilization of the resources.	Applying
			CO6	Illustrate the different terminology used in Financial Management and able to apply various capital budgeting techniques and break even analysis.	Applying
7	PC455EC	Microprocessor and Microcontroller Lab	CO1	Understand the architecture and its components of 8086 Microprocessor & 8051 Microcontrollers and develop algorithms for simple programs.	Understanding
			CO2	Apply the instruction set of 8086 Microprocessor & 8051 Microcontrollers and develop simple programs.	Applying

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			CO3	Explain the usage of Branching, string instructions and Assembler Directives of 8086 Microprocessor for String Manipulations.	Applying
			CO4	Design and Develop interfacing applications by input/output, serial communication devices using 8086 Microprocessor	Evaluating
			CO5	Design algorithms and different programs for SFRs using C cross compilers for 8051 Microcontroller	Analyzing
			CO6	Design and Develop interfacing application by input/output ports, serial communication devices using C cross compilers for 8051 Microcontroller	Creating
8	PC456EC	Systems and Signal Processing Lab	CO1	Analyze and process signals in the discrete domain	Applying
			CO2	Perform linear and circular convolution on various types of signals	Applying
			CO3	Analyze and Observe Magnitude and phase characteristics (Frequency response Characteristics) of digital IIR-Butterworth, Chebyshev filters.	Analyzing
			CO4	Analyze and Observe Magnitude and phase characteristics (Frequency response Characteristics) of digital FIR filter using window techniques.	Analyzing
			CO5	Design multi rate signal processing of signals through systems.	Evaluating
			CO6	Develop and Implement DSP algorithms in software using a computer language such as C with TMS320C6713 floating point Processor	Evaluating
9	PW701EC	Mini Project	CO1	Get Practical experience of software design and development, and coding practices within Industrial/R&D Environments.	Understanding
			CO2	Gain working practices within Industrial/R&D Environments	Applying
			CO3	To encourage students to work on innovative and entrepreneurial ideas.	Understanding
			CO4	Prepare reports and deliver effective presentation.	Applying

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			CO5	Demonstrate effective written and oral communication skills	Analyzing
			CO6	Design, implement and test the prototype/algorithm in order to solve the conceived problem.	Creating

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Course Outcomes

AY: 2022-23 (AICTE Model Curriculum) **VI Semester**

S.No.	Course Code	Course Name	CO No.	Course Outcomes	Taxonomy
1	PC413EC	Digital Communication	CO1	**Explain** the concepts of Receiver structure, Information theory, Codes for error control, Base band modulation schemes and Spread spectrum methods	Understanding
			CO2	**Apply** concepts of ISI and Eye Pattern for Base band digital data transmission., Information theory and assess information capacity of various channels	Applying
			CO3	**Distinguish** different types of Error control codes along with their encoding/decoding algorithms.	Analyzing
			CO4	**Analyze** the Performance of Baseband Modulation schemes based on Probability of error	Analyzing
			CO5	**Analyze** the performance of Spread Spectrum communication systems	Analyzing
2	PC414EC	VLSI Design	CO1	Understand various VLSI design styles, fabrication process of MOS, able to analyze the inverter characteristics, basic electrical properties and power dissipation of MOS transistor.	Analyzing
			CO2	Use Physical design rules to be followed for MOS designs, understand drawbacks of interconnects reliability issues and the effect of scaling on MOS devices.	Understanding

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			CO3	Analyze and implement various MOS subsystems at gate level and transistor level.	Analyzing
			CO4	Analyze the operation of various arithmetic circuits and their testability.	Analyzing
			CO5	Design sequential logic circuits using MOS transistors.	Applying
3	PC415EC	Data Communication and Computer Networks	CO1	Understand the working of various network topologies in circuit and packet switching	Understanding
			CO2	Implement HDLC protocol and significance of MAC protocols	Applying
			CO3	Understand the network routing protocols and associated algorithms	Understanding
			CO4	Understand the transport layer working with TCP and UDP.	Understanding
			CO5	Implement network scenario and obtain its performance evaluation.	Applying
4	PE – I (PE501EC)	Digital Image and Video Processing	CO1	Develop a foundation that can be used as the basis for higher study and research in the image and video processing.	Remembering
			CO2	Design various filters for processing of images without destroying fine details like edges and lines.	Analyzing
			CO3	Apply image processing techniques for processing and analysis of remotely sensed, images.	Applying
			CO4	Understand the requirement for various image and video compression algorithms.	Understanding
			CO5	Understand and analyze the performance of block matching algorithms in video coding standards.	Understanding
5	PE – II (PE508EC)	IoT System Design and Applications	CO1	**Explain** the concept and significance of IoT and Web Technology.	Understanding
			CO2	**Apply** the industrial structure of M2M to IoT transition of sample data systems.	Applying
			CO3	**Analyze** the design and evaluate IoT architecture and its reference model.	Analyzing

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			CO4	**Analyze** the applications of IoT in various industries, environment, agriculture, and health.	Analyzing
			CO5	**Analyze** the privacy, security, and governance issues related to IoT and suggest solutions to it.	Analyzing
6	OE – I (OE601CE)	Disaster Mitigation	CO1	**Relate** the terms and concepts related to disaster management.	Understanding
			CO2	**Demonstrate** the various categories of disasters and their specific characteristics.	Understanding
			CO3	**Outline** the emerging risks of disasters like climate change on urban areas.	Understanding
			CO4	**Explain** the pre-disaster, during disaster and post-disaster measures and framework.	Understanding
			CO5	**Explain** the disaster management acts and frameworks specific to India.	Understanding
7	PC458EC	Communication Systems Lab	CO1	Understand and simulate modulation and demodulation of AM and FM.	Applying
			CO2	Construct pre-emphasis and de-emphasis at the transmitter and receiver respectively.	Creating
			CO3	Understand and simulate the PAM, PWM&PPM circuits.	Applying
			CO4	Understand baseband transmission (i.e., PCM, DPCM, DM, and ADM) generation and detection.	Analyzing
			CO5	Understand and simulate digital modulation (i.e., ASK, FSK, BPSK) generation and detection.	Analyzing
8	PC459EC	Digital Integrated Circuits Lab	CO1	Write the Verilog HDL programs in gate level and data flow modeling.	Applying
			CO2	Implement combinational and sequential circuits using Verilog.	Creating
			CO3	Analyze digital circuits using VLSI CAD tools like Mentor Graphics / Cadence	Applying
			CO4	Design CMOS circuits like basic gates, adders at the transistor level	Analyzing
			CO5	Implement the layout of simple CMOS circuits like inverter and basic gates.	Analyzing
9	PC460EC	Data Communication and Computer	CO1	Understand the working of various network topologies and circuit and packet switching.	Applying

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		Networks Lab	CO2	Comprehend the role of data link layers and significance of MAC protocols.	Creating
			CO3	Understand the networking protocols and the internet protocols.	Applying
			CO4	Understand the transport layer working with TCP, UDP and ATM protocols.	Analyzing
			CO5	Comprehend the functionality of application layer and the importance of network security.	Analyzing
10	PW701EC	Summer Internship	CO1	Students can Able to select a Practical problem and find solution by using current technologies	Understanding
			CO2	Student can go through training for implementing the project.	Applying
			CO3	Students can Able to design/develop a small and simple product in hardware or software.	Creating
			CO4	Students can Able to complete the task or realize a pre-specified target, with limited scope.	Creating
			CO5	Students can Able to learn to find alternate viable solutions for a given problem and evaluate these alternatives with reference to pre-specified criteria	Applying

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Department of Electronics and Communication Engineering

Course Outcomes

AY: 2022-23 (AICTE Model Curriculum) **VII Semester**

S.no	Course Code	Course Title	CO No.	Course Outcome	TAXONOMY
1	PC701 EC	EMBEDDED SYSTEM	CO1	Explain the basic concepts of embedded systems, the selection procedure of Processors, characteristics, and design process in the embedded domain.	Understanding
			CO2	Differentiate architectural features of advanced controllers, instruction sets for programming embedded system design. Apply architectural features of ARM processor for embedded products.	Applying
			CO3	Make use of serial, parallel bus protocols for developing of embedded system products. Also Apply network enabled protocols.	Applying
			CO4	Analyze testing and hardware software co- design issues pertaining to design of an Embedded System. Examine all software development tools for embedded system.	Analyzing
			CO5	Assess the goal of embedded systems in real time design applications. Know about the RTOS based embedded system design concepts. Compare Testing methods and Debugging techniques.	Evaluating
			CO6	Design and develop embedded product in real time design applications by applying steps in design process for hardware and software of embedded product.	Creating
2	PC702EC	VLSI DESIGN	CO1	Understand various VLSI design styles, fabrication process of MOS, able to analyze the inverter characteristics, basic electrical properties and power dissipation of MOS transistor.	Analyzing
			CO2	Use Physical design rules to be followed for MOS designs, understand drawbacks of interconnects reliability issues and the effect of scaling on MOS devices.	Understanding
			CO3	Analyze and implement various MOS subsystems at gate level and transistor level.	Analyzing
			CO4	Analyze the operation of various arithmetic circuits and their testability.	Analyzing
			CO5	Design sequential logic circuits using MOS transistors.	Applying
			CO6	Understand the small signal model and characteristics of CMOS amplifiers.	Understanding

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3	PC703 EC	MICROWAVE TECHNIQUES	CO1	Describe the propagation characteristics of Guided waves in different modes	Understanding , Analyzing
			CO2	Evaluate different characteristics for Rectangular & Circular Waveguides &Cavity Resonators.	Applying, Analyzing
			CO3	Analyze microwave circuits using scattering parameters	Applying, Analyzing
			CO4	Design and analysis of microwave guides	Analyzing, Creating
			CO5	Understand the principle, operation and characteristics of microwave tubes and oscillators	Remembering, Analyzing
			CO6	Analyze the principle, operation and characteristics of microwave solid state devices including strip lines.	Analyzing, Evaluating
4	HS707ME	INDUSTRIAL ADMINISTRATION AND FINANCIAL MANAGEMENT	CO1	Illustrate the types of various business organizations, organization structures, functions of management and able to choose the proper plant layout.	Applying
			CO2	Explain the concept of Work Study and apply work measurement techniques for the calculation of standard time, and the concept of performance rating factors.	Applying
			CO3	Explain various concepts of Job evaluation, performance appraisal and wage payment system and able to apply these techniques.	Applying
			CO4	Demonstrate the concepts of Quality control, process control, material control and by use of control charts could evaluate whether the quality of a product or process in a plant.	Evaluating
			CO5	Demonstrate techniques like Linear Programming, Assignment and Project management & Material Management techniques and able to apply these techniques for optimum utilization of the resources.	Applying
			CO6	Illustrate the different terminology used in Financial Management and able to apply various capital budgeting techniques and break even analysis.	Applying
5	PE-II (PE721EC)	MOBILE AND CELLULAR COMMUNICATION	CO1	Understand the concept and implementation of frequency reuse and Handoff techniques	Understanding
			CO2	Analyze interference and capacity enhancement	Analyzing
			CO3	Appreciate the factors influencing outdoor and indoor propagation systems	Evaluating
			CO4	Analyze various multiple access protocols	Analyzing
			CO5	Visualize the system architectures and implementation of GSM and CDMA	Creating
			CO6	Understand the concepts in various Mobile Technologies	Understanding
6	OE-II (OE772CS)	Data Science Using R Programming	CO1	Apply linear algebra concepts such as distance, hyper planes, and eigen values in data science problems.	Applying
			CO2	Evaluate and interpret statistical models, including probability mass/density functions and hypothesis testing.	Analyzing

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			CO3	Construct simple and multiple linear regression models for predictive modelling.	Creating
			CO4	Install and configure R software for programming in data science.	Applying
			CO5	Measure and evaluate the performance of classification models.	Evaluating
			CO6	Implement K-Nearest Neighbours (KNN) and K-Means algorithms in R for data classification and clustering.	Applying
7	OE-III (OE781CE)	ROAD SAFETY ENGINEERING	CO1	Demonstrate about road accidents and its study objectives. Prepare accident investigation reports and database based on data collected.	Understanding
			CO2	Apply design principles for roadway geometrics improvement with various types of traffic safety appurtenances/tools	Applying
			CO3	Explain the road safety design operations, counter measures & characteristics to manage traffic including incident management	Understanding
			CO4	Illustrate the concept of Road Safety Auditing its principles, procedures and code of good practice and checklists	Understanding
			CO5	Explain about design and working principles of road signs and traffic signals	Understanding
			CO6	Describe applications of ITS in effectively managing the traffic incidents.	Understanding
8	PC 751 EC	MICROWAVE LAB	CO1	Analyze frequency, Wave length, SWR and Impedance for Reflex klystron Oscillator by using its equation	Analyzing
			CO2	Evaluate of mode characteristics of Reflex klystron and V-I Characteristics of Gunn diode.	Evaluating
			CO3	Analyze of the characteristics of Circulator, Isolator, Directional Coupler, Tees like (Magic tee, E & H plane tees) using the Scattering parameters.	Analyzing
			CO4	To analyze the radiation pattern of antenna	Analyzing
			CO5	Generate the Radiation pattern of different antennas like Yagi-Uda and Horn Antenna and measure the gain of the antennas.	Analyzing
			CO6	Familiarize with the EM simulation software	Creating
9	PC 752 EC	ELECTRONIC DESIGN AUTOMATION LAB	CO1	Explain different architecture of ARM processor, its components and Concept of RTOS	Understanding
			CO2	Develop algorithms for simple programs based on RTOS using embedded C for ARM Processors	Analyzing
			CO3	Design and Develop interfacing Real Time applications using in out pins, serial communication devices for ARM processors	Creating
			CO4	Understand Layout design Rules	Understanding
			CO5	Developing the Verilog code for existing digital designs	Applying

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			CO6	Design of Simple Gates using Layouts	Creating
10	PW 761 EC	PROJECT WORK-I	CO1	Decision making on interested topic and subject area in the wide spectrum of course	Analyzing
			CO2	Identify the applicability of modern software tools and technology	Analyze
			CO3	Deliver presentation based on the preparation	Creating
			CO4	Develop communication skills and stage performance	Creating
			CO5	Present the results from the work comprehensively through presentation.	Creating
			CO6	Correct him to improve presentation skills.	Evaluating

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Course Outcomes

AY: 2022-23 (AICTE Model Curriculum) **VIII Semester**

S.no	Course Code	Course Title	CO No.	Course Outcome	TAXONOMY
1	PE 824 EC	SATELLITE COMMUNICATIONS (PE-III)	CO1	Explain principle, working , operation of satellite.	Understanding
			CO2	Illustrate various effect on satellite communications and to understand types of antenna used.	Understanding
			CO3	Explain various components in satellite and satellite TV system.	Applying
			CO4	Analyze and design satellite communication link.	Applying
			CO5	Learn and design the application of satellite.	Analyzing
2	PE 832 EC	GLOBAL NAVIGATIONAL SATELLITE SYSTEMS (PE-IV)	CO1	Explain the concepts of fundamentals & Segments of GPS and its error &different types of dilution of precision.	Understanding
			CO2	Describe the Global & Indian regional satellites system and its features.	Understanding
			CO3	Apply the concepts time references on satellite & Calculate different error's in GPS and can design the system in GPS and can design the system with improved accuracy.	Applying
			CO4	Analyze the GPS errors and their modelling techniques.	Analyzing
			CO5	Design Analyze the different types of GNSS Architectures	Designing
3	PE 843 EC	RADAR SYSTEMS (PE-V)	CO1	Demonstrate and understand the factors detecting the radar using radar range equation.	Understanding
			CO2	Illustrate various types of radars and their variation displays in radars	Analyzing
			CO3	Explain different types of MTI radars and Non coherent MTI radar	Analyzing
			CO4	Illustrate on radar tracking methods and differences among them.	Remembering
			CO5	Explain search radars and various antennas used in radars.	Understanding, Analyzing
4	PW 961 EC	PROJECT WORK-II	CO1	Prepare abstract for given project by identifying the requirements and prospective solution	Analyzing
			CO2	collect latest information related to the project from various sources to analyse the project	Analyzing
			CO3	design the necessary module of the selected project as per	Creating

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				specifications	
			CO4	obtain and analyse the results of the designed module or circuit	Creating
			CO5	develop a prototype of the project by distribution of tasks among the team	Creating

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