

DEPARTMENT OF COMPUTER ENGINEERING

SEM: III (R19)

Course Code:	CSC301		Course Name	ENGINEERING MATHEMATICS-III		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1,2	1	1.6,2.6	1.6.1,2.6.3	3	1	Apply the concept of Laplace transforms and use to solve real integrals in engineering problems
2,3	1	2.5,3.5	2.5.2,3.5.6	3,5	2	Identify the concept of inverse laplace transform and compare to various functions and its applications
3,4	2	3.5,4.5	3.5.6,4.5.1	3,6	3	Develop and determine Fourier series for real life problems and applications.
1,2	1	1.6,2.8	1.6.1,2.8.1	3,4	4	Apply the properties of Complex analysis and select the application to orthogonal trajectories.
2,5	1	2.6,5.4	2.6.3,5.4.2	3	5	Use the concept of statistical techniques to solve problems in data science,machine learning and AI.
1,2,12	2	1.2,2.8,12.5	1.2.2,2.8.1,12.5.2	3	6	Apply the concept of probability,expectation to determine the spread of data and probability distribution.
Course Code:	CSC302		Course Name	Discrete Structure and Graph Theory		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
2	1	2.5	2.5.3	3	1	Apply clear thinking for problem solving using laws of logic and mathematical induction.
1	1	1.2	1.2.1	3	2	Apply the knowledge of Discrete Structure to solve complex relations and functions to find appropriate solution
2	1	2.7	2.7.1	4	3	Analyze complex relations and design Hasse diagram and Lattice
1	1	1.2	1.2.2	3	4	Apply formulate and analyze permutation and combination using principle of mathematics.
1	1	1.7	1.7.1	3	5	Apply the knowledge of mathematics to solve algebraic structure and detecting and correcting code in the transmitted data.
3	1	3.6	3.6.1	3	6	Apply concepts of graph theory in solving real world problems.
Course Code:	CSC303		Course Name	DATA STRUCTURE		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
2	-	2.6.1	2.6.1	1	1	Identify functionalities of Data structure of a computer-based system to solve a engineering problem
3	-	3.6.2	3.6.2	1	2	Able to produce a variety of potential design solutions suited to meet functional requirements for implementation of stack and queue
5	-	5.4.1	5.4.1	1	3	Identify different Linked list techniques for engineering activities
4	-	4.4.3	4.4.3	1	4	Able to choose appropriate tree traversal method to conduct the experiment.
5	-	5.4.2	5.4.2	6	5	Adapt graph traversal techniques to solve engineering problems
1	1	1.7.1	1.7.1	3	6	Apply theory and principles searching techniques of computer science and engineering to solve an engineering problem

Course Code:	CSC305		Course Name	COMPUTER GRAPHICS		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	_	1.3	1.3.1	1	1	Describe the basic concepts of Computer Graphics.
2	_	2.1	2.1.3	2	2	Demonstrate various algorithms for basic graphics primitives.
1	_	1.1	1.1.1	3	3	Apply 2-D geometric transformations on graphical objects Matrix multiplication.
4	_	4.2	4.2.1	3	4	Use various Clipping algorithms on graphical objects
2	_	2.3	2.3.2	4	5	Explore 3-D geometric transformations, curve representation techniques and projections methods
3	_	3.1	3.1.1	2	6	Explain visible surface detection techniques and Animation.
Course Code:	CSL301		Course Name	DATA STRUCTURE LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
3	_	3.6	3.6.2	1	1	Able to produce a variety of potential design solutions suited to meet functional requirements for implementation of stack
3	_	3.6	3.6.2	6	2	Design potential solutions suited to meet functional requirements for implementation of queue
5	_	5.4	5.4.1	3	3	illustrate and apply different Linked list techniques for engineering activities
4	_	4.5	4.4.3	1	4	Able to choose appropriate tree traversal method to conduct the experiment.
5	_	5.4	5.4.2	6	5	Adapt graph traversal techniques to solve engineering problems
1	1	1	1.7.1	3	6	Apply theory and principles searching techniques of computer science and engineering to solve an engineering problem
Course Code:	CSL302		Course Name	Digital Logic & Computer Organization and Architecture Lab		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
2,3	1	2.8 3.6	2.8.1 3.6.1	2,5	1	Understand the basics implementation of gates.
4	2	4.4	4.4.2	5,6	2	Implement arithmetic operations using Multiplexer/demultiplexer.
3,5	1	3.6 5.4	3.6.2 5.4.1	2, 3	3	Understand and learn about basics of counters .
2,5	2	2.8 5.4	2.8.1 5.4.2	3, 5	4	Implement arithmetic operations using various algorithms.
4	1	4.4	4.4.3	2, 6	5	Understand and implement the processor designing.
5	1	5.4	5.4.1	3,5	6	Implement the operation of memory and caches.
Course Code:	CSL303		Course Name	COMPUTER GRAPHICS LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	-	1.3	1.3.1	2	1	Implement various algorithms for basic graphics primitives
2	-	2.1	2.1.3	2	2	Implement various filled area primitive algorithms
1	-	1.1	1.1.1	3	3	Apply transformation on graphical objects
4	-	4.2	4.2.1	3	4	Apply clipping algorithms on graphical objects
2	-	2.3	2.3.2	4	5	Perform curve and fractal generation methods.
3	-	3.1	3.1.1	6	6	Develop a Graphical application/Animation based on learned concept

Course Code:	CSL304		Course Name	OOPM LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	1	1.6	1.6.1	2	1	Understanding fundamental programming constructs
3	1,2	3.6	3.6.2	4	2	Illustrate the concept of packages, classes and objects.
5	2	5.4	5.4.2	3	3	To extend the concept of strings, arrays and vectors.
3	-	3.6	3.6.1	4	4	To implement the concept of inheritance and interfaces
4	1,2	4.5	4.5.1	2	5	Deep understanding of handling exceptions and threads in JAVA Programming
4	2	4.4	4.4.3	3	6	Illustrating GUI based application.
Course Code:	CSM301		Course Name	MINI PROJECT		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1,2	1	1.7 2.5	1.7.1 2.5.2	2 3	1	Understand problems and use knowledge and skills to interpret societal/research problems in a group
9	2	9.5	9.5.2 9.5.4	6	2	Build interpersonal skills to work as member of a group or leader
5,7	1	5.5 7.3	5.5.1 7.3.1	4,6	3	Design the proper inference through theoretical/experimental/simulation and illustrate the impact of solution in social, environmental context for sustainable
8	1	8.4	8.4.1 8.4.2	3	4	Apply standard norms of engineering practices
10	1	10.4 10.5	10.4.1 10.4.2	6	5	Develop in written and oral communication
11,12	2	11.6 12.5	11.6.2 12.5.2	3	6	Apply project management principles and capabilities of self-learning in a group for a lifelong learning

SEM: IV (R 19)

SEM: IV (R 19)						
Course Code:	CSC401		Course Name	ENGINEERING MATHEMATICS-IV		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1,2	1	1.7,2.8	1.7.1,2.8.1	3	1	Apply the concept of eigen values and eigen vectors in engineering problems
2,4	1	2.8,4.5	2.8.1,4.5.1	3,5	2	Use the concepts of Complex integration for evaluating integrals ,computing residues and evaluate various contour integrals.
1,5	1	1.7,5.4	1.7.1,5.4.2	3	3	Apply the concept of Z-transformation and inverse in engineering problem.
1,2,12	1	1.7,2.8,12.5	1.7.1,2.8.4,12.5.2	3,2	4	Illustrate understanding the concept of probability distribution and sampling theory to engineering problem.
1,4	1	1.7,4.5	1.7.1,4.5.1	3	5	Apply the concept of Linear programming problems to optimization.
2,4	1	2.6,4.5	2.6.3,4.5.1	3	6	Solve Non linear programming problem for optimization of engineering problem.
Course Code:	CSC402		Course Name	Analysis of Algorithms		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1,4	1	1.2, 4.6	1.2.1 4.6.1	2,3,4	1	Analyze the running time and space complexity of algorithms.
2	1	2.5	2.5.2	2, 3,4	2	Describe, apply and analyze the complexity of divide and conquer strategy.
2	1	3.7	3.7.1 3.7.2	2, 3,4	3	Describe, apply and analyze the complexity of greedy strategy.
2	1	1.2	1.2.2	2, 3, 4	4	Describe, apply and analyze the complexity of dynamic programming strategy.
2,3	-	2.8, 3.6	2.8.1 3.6.2	2, 3	5	Explain and apply backtracking, branch and bound.
2,5	-	2.6, 5.4	2.6.5 5.4.1	2, 3	6	Explain and apply string matching techniques.
Course Code:	CSC403		Course Name	Database Management System		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
2	1	2.6	2.6.3	4, 2	1	Identify and analyze the roles and responsibilities of different types of user and investigate the different architecture to find appropriate solution.
4	1	4.5	4.5.1	6, 2	2	Understand and Design data modeling using ER and Extended ER features to meet the specified needs.
3	1	3.6	3.6.2	3,6	3	Investigate and apply different relational algebra operators to find appropriate solution leading to valid conclusion.
5	1	5.4	5.4.2	6	4	Investigate and formulate SQL queries to find appropriate solution to complex problems.
4	1	4.6	4.6.4	4, 3	5	Analyze and apply different normalization techniques to process and meet the specified needs with appropriate solution
5	1	5.5	5.5.1	2	6	Identify the strength and limitation of tools for concept of transaction, concurrency and recovery
Course Code:	CSC404		Course Name	OPERATING SYSTEM		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
2	1	2.1	2.1.2	2	1	Understand the objectives, functions and structure of Operating system.
2	1	2.1 2.2	2.1.2 2.2.4	4	2	Analyse the concept of process management and evaluate performance of process scheduling algorithms
2	1	2.6	2.6.3 2.6.4	3	3	Understand and apply the concepts of synchronization and deadlocks.
2	1	2.6	2.6.2	4	4	Evaluate performance of memory allocation and replacement policies
2	1	2.7	2.7.2	2	5	Understand the concepts of file management.
1	1	1.7	1.7.1	3	6	Apply concepts of I/O management and analyze techniques of disk scheduling

Course Code:	CSC405		Course Name	MICRO PROCESSOR		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	1	1.3	1.3.1	3	1	Apply basic engineering fundamentals to describe the architecture of 8086 processor .
2	1	2.4	2.4.1 2.4.2	3,4	2	Apply the instructions of 8086 to implement the assembly language program .Analyse and interpret the result of ALP using integrated tool.
3	2	3.4	3.4.1	3	3	Able to refine architecture design into detailed design using processor, memory chip or different peripheral ICs within existing constraints
3	1	3.1	3.1.5	3	4	Explore and synthesize 80386 system requirements from larger social and professional concerns
3	1	3.3	3.3.5	3	5	Able to perform systematic evaluation of degree of microprocessor from 8086 to Pentium to which several design concepts meet the criteria.
1	1	1.3	1.3.1	3	6	Apply basic engineering fundamentals to describe the hyperthreading technology in higher processors
Course Code:	CSL401		Course Name	Analysis of Algorithms LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
2,4	1	2.8 , 4.6	2.8.2 4.6.1	4	1	Analyze the complexities of various problems in different domains.
2,1,4	1	2.1, 1.7, 4.6	2.5.2, 1.7.1, 2.8.2	2, 3,4	2	Describe, apply and analyze the running time of the basic algorithms for those classic problems in various domains using divide and conquer strategy.
2,1	1	2.1, 1.7	2.5.2, 1.7.1	2,3,4	3	Define and apply the efficient algorithms for the effective problem solving with the help of different strategies like greedy method.
1	1	1.7	1.7.1	3	4	Apply dynamic programming strategy to solve different problems effectively.
2,1	1	2.1, 1.7	2.5.3, 1.7.1	2,3	5	Recognize and apply backtracking, branch and bound and to deal with some hard problems.
2,4	1	1.7, 4.6	1.7.1, 4.6.1	3 4	6	Apply and analyze the string matching algorithms to find the pattern.
Course Code:	CSL402		Course Name	DATABASE MANAGEMENT SYSTEM LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
3	1	3.5	3.5.1	4	1	Identify and investigate the real life problem to find appropriate solution and design and draw ER and EER diagram with software tool
4	2	4.6	4.6.3	6	2	Design, Create and update database and tables with different DDL and DML statements
5	2	5.6	5.6.1	3	3	Apply appropriate integrity constraints and provide security to data.
4	2	4.4	4.4.2	4	4	Investigate and formulate SQL queries to find appropriate solution to complex problems.
4	1	4.5	4.5.1	4,3	5	Identify and apply triggers and procedures for specific module to meet the specified needs with appropriate solution to safety standards and societal
5	2	5.6	5.6.2	3	3	Use PL / SQL Constructs.
Course Code:	CSL403		Course Name	OPERATING SYSTEM LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	1	1.7	1.7.1	2	1	Demonstrate basic operating system commands, shell scripts, system calls and API wrt Linux.
2	1	2.5	2.5.2	5	2	Determine various process scheduling algorithms.
2	1	2.5	2.5.2	4	3	Analyze the concept of synchronization and deadlocks.
2	1	2.5	2.5.2	5	4	Determine various memory management techniques and evaluate their performance.
2	1	2.6	2.6.2, 2.6.3	4	5	Identify the concept of virtual memory.
1,2	1	1.7, 2.5	1.7.1, 2.5.2	2,4	6	Demonstrate and analyze concept of file management and I/O management techniques.

Course Code:	CSL404		Course Name	MICRO PROCESSING LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	1	1.7	1.7.1	3	1	Explain basic engineering fundamentals to describe the architecture of 8086 processor .
3,5	2	3.8, 5.4	3.8.2, 5.4.1, 5.4.2	3,4	2	Explain the instructions of 8086 to implement the assembly language program. Identify and interpret the result of ALP using integrated tool.
3	2	3.6	3.6.2	6	3	Design 8086 based system using Memory and peripheral chip.
2	1	2.5	2.5.2	5	4	Appraise the architecture of 80386 DX processor.
4	1	4.6	4.6.1	5	5	Determine the degree of microprocessor from 8086 to Pentium to which several design concepts meet the criteria.
1	1	1.7	1.7.1	2	6	Explain the hyperthreading technology in higher processors
Course Code:	CSL405		Course Name	PYTHON PROGRAMING LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	1	1.6	1.6.1	2	1	Understand basic concepts in python
3	1,2	3.6	3.6.2	3	2	Exploring contents of files, directories and text processing with python
4	2	4.5	4.5.1	6	3	Develop program for data structure using built in functions in python.
5	1	5.4	5.4.2	3	4	To explore django web framework for developing python-based web application.
3	1	3.6	3.6.1	3	5	Able to explore design alternatives
1	2	1.6	1.6.1	2	6	Understand the concept of numpy and pandas
Course Code:	CSM401		Course Name	MINI PROJECT		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1,2	1	1.7 , 2. 5	1.7.1 2.5.2	2,3	1	Understand problems and use knowledge and skills to interpret societal/research problems in a group
9	2	9.5	9.5.2 9.5.4	6	2	Build interpersonal skills to work as member of a group or leader
5,7	1	5.5,7,3	5.5.1 7.3.1	4,6	3	Design the proper inference through theoretical/experimental/simulation and illustrate the impact of solution in social, environmental context for sustainable
8	1	8.4	8.4.1 8.4.2	3	4	Apply standard norms of engineering practices
10	1	10.4, 10.5	10.4.1 10.4.2	6	5	Develop in written and oral communication
11,12	2	11.6, 2.5	11.6.2 12.5.2	3	6	Apply project management principles and capabilities of self-learning in a group for a lifelong learning

SEM:V (R-16)

SEM:V (R-16)						
Course Code:	CSC501		Course Name	Microprocessor		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	1	1.3	1.3.1	3	1	Apply basic engineering fundamentals to describe the architecture of 8086 processor .
2	1	2.4	2.4.1, 2.4.2	3,4	2	Apply the instructions of 8086 to implement the assembly language program . Analyse and interpret the result of ALP using integrated tool.
1,3	2	1.3, 3.4	1.3.1, 3.4.2	3	3	Apply engineering fundamentals to describe DOS and BIOS interrupts. Apply knowledge to implement DOS and BIOS interrupt and to integrate modules with
3	2	3.4	3.4.1	3	4	Able to refine architecture design into detailed design using processor, memory chip or different peripheral ICs within existing constraints
3	1	3.1	3.1.5	3	5	Explore and synthesize 80386 system requirements from larger social and professional concerns.
3	1	3.3	3.3.5	3	6	Able to perform systematic evaluation of degree of microprocessor from 8086 to Pentium to which several design concepts meet the criteria
Course Code:	CSC502		Course Name	DBMS		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
2	1	2.6	2.6.3	4,2	1	Identify and analyze the roles and responsibilities of different types of user and investigate the different architecture to find appropriate solution.
4	1	4.5	4.5.1	6,2	2	Understand and Design data modeling using ER and Extended ER features to meet the specified needs.
3	1	3.6	3.6.2	3,6	3	Investigate and apply different relational algebra operators to find appropriate solution leading to valid conclusion.
5	1	5.4	5.4.2	6	4	Investigate and formulate SQL queries to find appropriate solution to complex problems.
4	1	4.6	4.6.4	4,3	5	Analyze and apply different normalization techniques to process and meet the specified needs with appropriate solution
5	1	5.5	5.5.1	2	6	Identify the strength and limitation of tools for concept of transaction, concurrency and recovery.
Course Code:	CSC503		Course Name	COMPUTER NETWORK		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1,2	-	1.3, 2.2	1.3.1, 2.2.4	2,3,4	1	Apply the knowledge of fundamentals of data communication to identify the differences between ISO - OSI model, TCP/IP model and connection oriented
1,2	-	1.4, 2.2, 2.4	1.4.1, 2.2.2, 2.4.3	2,3,5	2	Apply the knowledge of data communication fundamentals to identify & analyze different types of media i.e. guided, unguided used at physical layer.
2,3	1	2.2, 2.4, 3.2	2.2.4, 2.4.3, 3.2.2	2,3,6	3	Apply the knowledge of different protocols used at data link layer to investigate appropriate protocol for system. Identify and analyze the differences in protocols.
2,5,6	-	2.3, 5.2	2.3.1, 5.2.1, 6.2.1	2,3,7	4	Select and apply appropriate concepts of subnetting / supernetting of IP addressing. Analyze various routing algorithms and protocols at network layer.
2,3	-	2.3, 3.2, 3.3	2.3.1, 3.2.2, 3.3.1	2,3,8	5	Classify and compare transport layer protocols. Relate connection management with real time communication. Investigate congestion and apply appropriate
2,6	-	2.1, 2.2, 6.1	2.1.2, 2.2.2, 6.1.1	3,4	6	Identify the protocols used at application layer. Analyze the protocols in terms of organization need, its impact.
Course Code:	CSC504		Course Name	TCS		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	-	1.3	1.3.1	4	1	Identify the central concepts in theory of computation and analyse differentiate between deterministic and nondeterministic automata, apply formulate
2	-	2.4	2.4.1	4	2	Investigate the equivalence of languages described by finite automata and regular expressions.
5	-	5.1	5.1.2	6	3	Create and apply regular, context free grammars while recognizing the strings and tokens.
2	-	2.4	2.4.2	6	4	Design pushdown automata model to recognize the language.
2	-	2.4	2.4.2	6	5	Develop an understanding of computation through Turing Machine
1	-	1.3	1.3.1	2	6	Acquire fundamental understanding of decidability and undecidability and apply the knowledge to solve computer engineering problem.

Course Code:	CSDLO5011		Course Name	Multimedia System		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	1	1.6	1.6.1	2,3	1	Understand basics of multimedia and multimedia system architecture and apply the knowledge in engineering profession
7	1	7.3	7.3.2	2	2	Understand the impact of multimedia components on society and environment for sustainable development
5	1	5.5	5.5.2	2	3	Understand file formats for different multimedia components
2	2	2.1, 2.8	2.5.2, 2.8.1	2,3,4,6	4	Identify, formulate and analyse different compression techniques and apply them solve complex computer engineering problems
1	1	1.7	1.7.1	3	5	Apply the knowledge of multimedia communication techniques to improve the quality of service
2	2	2.1, 2.8	2.5.2, 2.8.1	2,3,4,6	6	Identify, formulate and analyse different security techniques and apply these techniques of information security in multimedia environments
Course Code:	CSDLO5012		Course Name	AOS		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
2	1	2.5	2.5.1, 2.5.2	1	1	State design issues of Advanced Operating Systems
3	1	3.7, 3.8	3.7.1, 3.8.1	2	2	Express design aspects and data structures used for file subsystem, memory subsystem and process subsystem of Unix OS
3	1	3.8	3.8.1	3,4	3	Explain different architectures used in Multiprocessor OS and analyze the design and data structures used in Multiprocessor operating systems
2	1	2.6	2.6.5	4	4	Differentiate between threads and processes and compare different processor scheduling algorithms used in Multiprocessor OS
2	1	2.6, 2.8	2.6.5, 2.8.2	4	5	Classify and compare Real Time OS and analyze various real time scheduling algorithms
3	1	3.8	3.8.1, 3.8.3	6	6	Explore architectures and design issues of Mobile OS, Virtual OS, Cloud OS
Course Code:	CSDLO5013		Course Name	ADVANCED ALGORITHM		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	_	1.2	1.2.1	2,3	1	Describe and Apply the analysis techniques for algorithms.
1	_	1.2	1.2.2	2	2	Recognize the role of probability and randomization in the analysis of algorithm.
2	1	2.1	2.5.2	4	3	Identify appropriate data structure and design techniques for different problems.
4	1	4.6	4.6.1	3,4	4	Analyze various network flow algorithms.
3	1	3.7	3.7.1, 3.7.2	2,4	5	Illustrate and select the appropriate algorithm to be applied for the various application like geometric modeling, robotics, networking, etc.
2	1	2.6	2.6.5	4	6	Differentiate polynomial and non deterministic polynomial algorithms.
Course Code:	CSL501		Course Name	MP LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	1	1.7	1.7.1	3	1	Explain basic engineering fundamentals to describe the architecture of 8086 processor .
3,5	2	3.8, 5.4	3.8.2, 5.4.1, 5.4.2	3,4	2	Explain the instructions of 8086 to implement the assembly language program. Identify and interpret the result of ALP using integrated tool.
1,3	2	1.3, 3.4	1.3.1, 3.4.2	3	3	Apply engineering fundamentals to describe DOS and BIOS interrupts. Apply knowledge to implement DOS and BIOS interrupt and to integrate modules with
3	2	3.6	3.6.2	6	4	Design 8086 based system using Memory and peripheral chip.
2	1	2.5	2.5.2	5	5	Appraise the architecture of 80386 DX processor.
4	1	4.6	4.6.1	5	6	Determine the degree of microprocessor from 8086 to Pentium to which several design concepts meet the criteria.

Course Code:	CSL502		Course Name	CN LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1,2	_	1.3, 2.4	1.3.1, 2.4.2	3,4,6	1	Apply the knowledge to design a network and configure it for IP addressing, subnetting. Analyze its results.
1,2	_	1.3, 2.2	1.3.1, 2.2.2	2,3	2	Identify different network commands in Linux. Apply it to find solution for different network problems.
1	1	1.3, 1.4	1.3.1, 1.4.1	3	3	Apply knowledge to understand the operation of TCP/IP layers using Wireshark.
5	_	5.2, 5.3	5.2.1, 5.3.1	3,4	4	Select and apply different error detection and correction, flow control, congestion control algorithm. Analyze the results and derive conclusion.
1,2	2	1.3, 2.4	1.3.1, 2.4.2	3,4,6	5	Apply the knowledge to design network system using TCP, UDP. Analyze the difference in working.
1,2	_	1.3, 2.4	1.3.1, 2.4.2	3,4	6	Apply appropriate technique for routing in different network system and analyze the results.
Course Code:	CSI503		Course Name	DBMS LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
3	1	3.5	3.5.1	4	1	Identify and investigate the real life problem to find appropriate solution and design and draw ER and EER diagram with software tool
4	2	4.6	4.6.3	6	2	Design, Create and update database and tables with different DDL and DML statements
5	2	5.6	5.6.1	3	3	Apply appropriate integrity constraints and provide security to data.
4	2	4.4	4.4.2	4	4	Investigate and formulate SQL queries to find appropriate solution to complex problems.
4	1	4.5	4.5.1	4,3	5	Identify and apply triggers and procedures for specific module to meet the specified needs with appropriate solution to safety standards and societal
5	2	5.6	5.6.2	6	6	Design a software system effectively as a member and leader in a team for a common goal of database processing and controlling consequences of concurrent
Course Code:	CSL504		Course Name	WEB DESIGN LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	_	1.1	1.1.2	3	1	Use the concept of web technology for solving the problem of web application.
4	_	4.5	4.5.1	6	2	Design & develop static web pages using HTML5 and CSS3
4	_	4.5	4.5.1	3,6	3	Apply the concept of client side validation and design dynamic web pages using JavaScript and JQuery.
5	_	5.4	5.4.2	6	4	Create Interactive web pages using PHP, AJAX with database connectivity using MySQL to solve the problem of web application
4	_	4.5	4.5.1	3,6	5	Apply the concept of XML, DTD & XSL and design dynamic web pages using XML and XSLT
3	_	3.6	3.6.2	6	6	Create web application using appropriate web technologies and web development framework suited to meet user requirement
Course Code:	CSL504		Course Name	BCE LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
3	_	3.5	3.5.1, 3.5.2	6	1	Design a technical document using precise language, suitable vocabulary and apt style
3	_	3.5	5.4.1	6	2	Develop writing skills of a cover letter and a CV/resume/SOP
4	_	4.5	4.5.1	6	3	Develop interpersonal skills to progress professionally by building strong relationships with peers
4	_	4.5	4.5.1	6	4	Develop effective presentation skills and an impressive body language
1	_	1.5	1.5.1	3	5	Apply codes of personal integrity, values, aptitudes and skills
1	_	1.5	1.5.1	2	6	Demonstrate awareness of contemporary issues, knowledge of professional and ethical responsibilities

SEM:VI (R16)

SEM:VI (R16)						
Course Code:	CSC601		Course Name	SOFTWARE ENGINEERING		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	1	1.7	1.7.1	2,3	1	Understand and demonstrate basic knowledge in software engineering
2, 3	1	2.5, 3.5	2.5.1, 3.5.2	2,4	2	Identify requirements, analyze and prepare models
4	2	4.4, 4.5	4.4.4, 4.5.1	3,6	3	Plan,schedule and track the progress of the projects
3	2	3.8	3.8.1	3,6	4	Design and develop the software projects
5	1	5.5, 5.6	5.5.2, 5.6.1, 5.6.2	2	5	Identify risks, manage the change to assure quality in software projects
5	2	5.4, 5.5	5.4.2, 5.5.1	5	6	Apply testing principles on software project and understand the maintainance concepts
Course Code:	CSC602		Course Name	SPCC		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
2		2.2	2.2.2	2,4	1	Identify and analyze the relevance of different system programs.
1,2	1	1.4, 2.3	1.4.1, 2.3.1	2,3	2	Describe the various data structures and demonstrate its use in passes of assembler design.
2	_	2.2, 2.3	2.2.2, 2.3.1	2	3	Identify the need for different features and designing of macros.
2	_	2.2	2.2.2, 2.2.4	2,4	4	Distinguish different loaders and linkers and discuss their contribution in developing efficient user applications.
1,2,4	2	1.3, 2.2, 2.3, 4.2	1.3.1,2.2.2, 2.3.2,4.2.1	2,3,6	5	Identify and discuss phases of compiler. Construct and demonstrate use of different parsers for given context free grammars.
2,6	_	2.2, 2.3, 6.1	2.2.2,2.3.1, 6.1.1	2,5	6	Identify and justify the need synthesis phase to produce object code optimized in terms of high execution speed and less memory usage.
Course Code:	CSC603		Course Name	DWM		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	_	1.7	1.7.1	4	1	Understand data warehouse with dimensional modelling and analyze different OLAP operations.
1	_	1.7	1.7.1	2	2	Understand data mining principles and use data preprocessing and data exploration.
2	_	2.5	2.5.2	4	3	Classify and evaluate appropriate data mining algorithm
4	_	4.6	4.6.1	4	4	Compare and evaluate different data mining techniques like classification, prediction, clustering.
5	_	5.4	5.4.1	3	5	Identify and apply associate rule mining technique for real time applications.
4	_	4.6	4.6.1	3	6	Understand and apply the concept of web mining
Course Code:	CSC604		Course Name	CSS		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	_	1.1	1.1.1	3	1	Apply the knowledge of modular arithmetic and number theory to solve problems related to security.
2	_	2.6	2.6.4	4	2	Compare and Contrast different encryption and decryption methods to select best methods
2	_	2.8	2.8.2	4	3	Analyze the performance of different message digest algorithm and interpret the integrity of messages by varying the size of messages.
2	_	2.6	2.6.4	4	4	Compare and Contrast alternative methods of digital signature to select best methods
2	_	2.8	2.8.4	4	5	Analyze and interpret the performance of firewalls and security protocols like SSL, IPSec using contemporary tools.
1	_	1.4	1.4.1	3	6	Apply the concepts of system security to solve problems related to security.

Course Code:	CSDLO601		Course Name	MACHINE LEARNING		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	1	1.7	1.7.1	3	1	Apply theory and principles of computer science and engineering to identify the applications and steps in developing ML application.
1,2	1	1.6 1.7 2.5	1.6.1 1.7.1 2.5.2	3	2	Apply engineering fundamentals to define Neural Network and to identify various NN architecture
2	1	2.6	2.6.4	3	3	Compare and constrast alternative solution to select best methods
1	1	1.2	1.2.1 1.2.2	3	4	Apply the knowledge of discrete structures, Linear Algebra, Statistics , Numerical technique to solve problem
1	1	1.2 1.7	1.2.1 1.7.1	3	5	Apply the concepts of probability,Statistics for solving Machine Learning problems
1	1	1.2	1.2.1 1.2.2	3	6	Apply the knowledge of discrete structures, Linear Algebra, Statistics , Numerical technique to solve problem
Course Code:	CSL601		Course Name	SE LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
2	1	2.7	2.7.2	4	1	Identify traditional and agile process Models.
3	2	3.7	3.7.1	6	2	Develop Software Requirement Specification (SRS) document and Data Flow Diagram(DFD).
4	1	4.6	4.6.1	3	3	Calculate tracking and scheduling of the project.
3	1	3.6	3.6.1, 3.6.3	2	4	Explain and Classify the design of Software Project using basic Principles and concepts.
4,5	2	4.5, 5.6	4.5.1, 5.6.1	3,6	5	Prepare Risk Mitigation plan and Construct Version Control.
5	1	5.4	5.4.2	5	6	Test the Software by using various Testing Approaches.
Course Code:	CSL602		Course Name	SYSTEM SOFTWARE LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
2	1	2.2	2.2.2	2,3	1	Generate machine code by using various databases generated in pass one of two pass assembler.
1,2	1	1.4, 2.3	1.4.1, 2.3.1	6	2	Construct different databases of single pass macro processor.
2	_	2.2, 2.3	2.2.2, 2.3.1	2	3	Identify and validate different tokens for given high level language code.
2	2	2.2	2.2.4	6	4	Parse the given input string by constructing Top down /Bottom up parser.
1,2,4	_	1.3, 2.3, 4.2	1.3.1 2.3.2	3	5	Implement synthesis phase of compiler with code optimization techniques.
2,6	_	2.2, 2.3, 6.1	2.2.2 2.3.1, 6.1.1	2,5	6	Explore various tools like LEX and YACC.
Course Code:	CSL603		Course Name	DWM LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	_	1.7	1.7.1	6	1	Design data warehouse and perform various OLAP operations
1	_	1.7	1.7.1	4	2	Implement classification mining algorithms.
2	_	2.5	2.5.2	4	3	Classify and evaluate appropriate data mining algorithm
4	_	4.6	4.6.1	4	4	Demonstrate prediction and Implement clustering algorithms on a given set of data sample using data mining tools
5	_	5.4	5.4.1	3	5	Implement Association Rule Mining algorithm
4	_	4.6	4.6.1	3	6	Implement spatial and web mining algorithms

Course Code:	CSL604		Course Name	SYSTEM SECURITY LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	_	1.1	1.1.1	3	1	Apply the knowledge of symmetric cryptography to implement simple cipher to solve security related problems.
3	_	3.8	3.8.2	3	2	Implement public key algorithms like RSA & EL Gammal
2	_	2.8	2.8.2	4	3	Analyze & interpret the results of hashing algorithms.
4	_	4.6	4.6.1	3	4	Use appropriate reconnaissnce tools to gather information about network& other tools for analysing packets in network.
2	_	2.8	2..8..2	4	5	Analyze & interpret the results of firewall and .intrusion detection system
2	_	2.1	2.1.2	3	6	Identify various attacks like buffer overflow , & web application attacks to solve problems of security.
Course Code:	CSP605		Course Name	MINI PROJECT		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
2,3	_	2.1,3,5	2.1.2,3,5.1	3	1	Define problem statement with objective & scope & identify methodologies/algorithms to solve problem
3	_	3.8	3.8.3	4	2	Verify & validate results, functionalities & design of project
7	_	7.3	7.3.1,7.3.2	3	3	Identify impact of engineering products & understand relationship between the technical, socio-economics & enviornmental dimensions of sustainabilities.
9,11.	_	9.4,11.6	9.4.2, 11.6.2	3	4	Use project management tools to schedule an engineering project, so it is completed on time & on budget & implement norms of practice.
10	_	10.4, 10.6	10.4.2, 10.6.2	3.4	5	Produce clear, well structured & well supported written engineering document & use variety of media effectively to convey a message in a document or
9	_	9.5	9.5.1	6	6	Demonstrate effective communication, problem-solving , conflict resolution & leadership skill

SEM: VII (R16)

SEM: VII (R16)						
Course Code:	CSC701		Course Name	DSIP		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	_	1.2	1.2.1	3,4	1	Classify and analyze discrete time signals and systems
2	_	2.1	2.5.3	3	2	Use DFT properties for the computation of DFT
2	_	2.8	2.8.1	3	3	Solve Fast Fourier Transform of signals
1	_	1.2	1.2.1	2	4	Discuss the fundamental concepts of digital image.
3	_	3.6	3.6.1	3	5	Use the enhancement techniques to explore alternative methods in Spatial domain.
2	_	2.6	2.6.5	4	6	Differentiate between the advantages and disadvantages of different edge detection techniques
Course Code:	CSC702		Course Name	MCC		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
2,4	_	2.3, 6.2	2.3.1, 6.2.1	2,4	1	Identify fundamentals or basic concepts and principles in mobile communication & computing. Analyze the techniques available and understand its impact.
1,2,6	1	1.4, 2.2, 6.2	1.4.1, 2.2.2, 6.2.1	2,3,4	2	Realize all generation of mobile computing i.e. GSM, GPRS, UMTS, UTRAN. Apply the knowledge to analyze its performance, its impact on society.
1,3,5	_	1.4, 3.3, 5.2	1.4.1, 3.3.1, 5.2.1	3, 4	3	Apply appropriate techniques for communication or routing in mobile computing. Analyze it to realize fundamentals or different concepts related to it.
2	1	2.2, 2.3, 2.4	2.2.2, 2.3.1, 2.4.3	2, 4	4	Identify the difference between WLAN, HIPERLAN1, HIPERLAN2 (802.11a, 802.11b etc.). Analyze it in terms of protocols, bandwidth used etc.
4,5,6	2	4.1, 5.2, 6.1	4.1.1, 5.2.1, 6.1.1	3, 4	5	Realize the impact of mobility on communication. Select and apply appropriate techniques for mobility management.
1,3	_	1.4, 3.2, 3.3	1.4.1, 3.2.1, 3.3.1	3	6	Apply the knowledge to understand Long Term Evolution (LTE) architecture, its interfaces, different types.
Course Code:	CSC703		Course Name	AI & SC		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
2	1	2.1	2.5.2	2	1	Identify the various characteristics of Artificial Intelligence and Soft Computing techniques.
4	1	4.5	4.5.1	3,2	2	Identify and apply an appropriate problem-solving method for an agent to find a sequence of actions to reach the goal state.
3	1	3.6	3.6.2	4	3	Analyze the strength and weakness of AI approaches to knowledge representation, reasoning and planning.
5	1	5.4	5.4.1	6,2	4	Identify the applications which can use fuzzy logic. Design fuzzy controller system
5	1	5.4	5.4.2	6	5	Design supervised and unsupervised ANN for real world applications.
5	1	5.5	5.5.1	6,3	6	Apply Hybrid approach for expert system design.
Course Code:	CSDLO7031		Course Name	ASSDF		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	_	1.4	1.4.1	3	1	Apply the theory of access control policies & control mechanism for solving the problem of security
2	_	2.1	2.1.2	3	2	Identify the malicious, nonmalicious & Targeted code & Use the concept of OS, file security to solve the problem of security
2	_	2.4	2.4.2	4	3	Analyze & counter threats to web application using contemporary tool
3	_	3.6	3.6.1	4	4	Explore different measures to secure wireless protocols, WLAN, VPN networks & mobile devices & use the different protection mechanism of networks to solve
8	_	8.4	8.4.2	3	5	Examine and apply legal & ethical issues associated with cyber crime to known case studies
4	_	4.6	4.6.1	3,4	6	Apply appropriate procedures, tools and techniques to acquire and duplicate data from compromised systems and analyze it

Course Code:	ILO7016		Course Name	CSL		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	1	1.3	1.3.1	3	1	Apply theory and principles of computer science and engineering to identify different types of cyber crime and its effect on outside world.
1	1	1.3	1.3.1	3	2	Apply engineering fundamentals to identify various security challenges in mobile device for different types of attack and Distinguish different aspects of cyber law
4	2	4.3	4.3.1	3	3	Use of different tools and methods in Cyber Security.
6	1	6.2	6.2.1	2	4	Interpret legislation ,regulation,codes and standands relevant to cyberlaw and explain IT act 2000 and its latest amendments
6	1	6.2	6.2.1	2	5	Interpret legislation ,regulation,codes and standands relevant to cyberlaw and explain IT act 2000 and its latest amendments
3	1	3.1	3.1.3	1	6	Able to choose appropriate information security standards during software design and development
Course Code:	ILO7013		Course Name	MIS		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
7	_	7.1	7.1.2	4	1	Identify the impact information systems have on an organization and society and explain how information systems transform Business.
2	_	2.2	2.2.2, 2.2.3 2.2.4	4	2	Compare and contrast the principal tools and technologies for accessing information from databases to improve business performance and decision
2	_	2.2	2.2.3, 2.2.4	4	3	Classify and compare threats to information resources and security controls used to protect the same in an organization.
11	_	11.2	11.2.1	1	4	Recognize innovative ways to use social computing for market research and business.
4	_	4.3	4.3.2	4	5	Analyze the impact of networks on a business.
3,7	_	3.3, 7.1	3.3.1, 7.1.1	3	6	Explain the significance of system development life cycle and importance of enterprise-wide knowledge management and its value for business.
Course Code:	CSL701		Course Name	DSIP LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	_	2.8	2.8.1	2	1	Illustrate and implement the concept sampling and reconstruction of signal.
2	_	2.1, 2.8	2.5.3, 2.8.1	2,3	2	Demonstrate and apply operations like Convolution, Correlation, DFT on DT signals
2	_	2.8	2.8.1	3	3	Apply Fast Fourier Transform on DT signals
1	_	1.2	1.2.1	2,3	4	Illustrate and apply the fundamental concepts of digital image.
3	_	3.6	3.6.1	3	5	Apply enhancement techniques for digital Image Processing
2	_	2.6, 2.8	2.6.4, 2.8.1	3,4	6	Apply and Classify the digital image processing techniques for edge detection.
Course Code:	CSL702		Course Name	MADL LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
4,6	_	4.2, 6.2	4.2.1, 6.2.1	2,3	1	Apply the knowledge of MAC layer techniques to implement CDMA and understand its impact.
2,4,5,6	1	2.1, 4.2, 5.1, 6.2	2.1.3,4.2.1, 5.1.2,6.2.1	2,3,4,5,6	2	Understand GSM. Design a security system using A3/A5/A8 algorithm, Handoff system. Analyze the difference in simple system and handoff system working.
1,4,6	_	1.3, 4.2, 6.2	1.3.1, 4.2.1, 6.2.1	2, 3	3	Understand Java, J2ME. Apply the knowledge to design a system which calculates income tax/EMI.
1,3,5	1	1.3, 3.2, 5.1	1.3.1, 3.2.2, 5.1.2	3	4	Apply the knowledge of mobility. Investigate problems because of mobility. Apply appropriate technique to design mobile node discovery.
4,6	_	4.2, 6.2	4.2.1, 6.2.1	6	5	Understand Android SDK. Design a software system or application which makes use of database, gives alert message upon receiving message.
2,5	_	2.1, 5.1	2.1.3, 5.1.2	3, 6	6	Select and apply appropriate technique to find route from source to destination, Design a system and analyze the results.

Course Code:	CSL703		Course Name	AISC LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
5	1	5.4	5.4.1	4	1	Identify the problem and formulate it.
4	1	4.4	4.4.3	2	2	Understand the basic techniques to build intelligent systems
4	1	4.5	4.5.1	6	3	Create knowledge base and apply appropriate search techniques used in problem solving
4	1	4.6	4.6.1	4,3	4	Identify and analyse Algorithm to solve the problem
5	2	5.4	5.4.1	6	5	Design fuzzy controller system.
5	2	5.4	5.4.2	6	6	Design the supervised/unsupervised learning algorithm.
Course Code:	CSL704		Course Name	COMPUTATIONAL LAB(ASDF)		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
2	_	2.8	2.8.2	4	1	Analyze & interpret code & program vulnerabilities using open source tools.
2	_	2.8	2.8.2	4	2	Analyze & interpret network vulnerabilities using open source tools.
4	_	4.6	4.6.1	3,4	3	Use appropriate tools to detect web application & browsers vulnerabilities & analyze it
3	_	3.6	3.6.1	3,4	4	Explore different tools to secure wireless network, routers & mobile devices & perform penetration testing & analyze it
3	_	3.8	3.8.2	3	5	Implement AAA using RDIIOUS & TACACS
4	_	4.6	4.6.1	3,4	6	Use appropriate forensic tools to collect, duplicate & analyze data
Course Code:	CSP705		Course Name	MAJOR PROJECT		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
6,7	2	6.1, 7.1, 7.2	6.1.1, 7.1.1, 7.2.1	2,3	1	Identify societal, health and legal issues and apply practical knowledge within the chosen area of technology for project development.
8,11	1	8.2, 11.2, 11.3	8.2.2, 11.2.1, 11.3.1	2,4,6	2	Identify, analyze and formulate problem within programming projects in a comprehensive and systematic approach .
5	1	5.1, 5.2	5.1.2, 5.2.1	6	3	Design and develop Engineering solutions to complex problem utilizing a systematic approach .
9,10	1,2	9.3, 10.2, 10.3	9.3.1, 10.2.1, 10.3.1	5	4	Work effectively as an individual or in a team in development of technical projects.
10,12	1,2	10.2, 10.3, 12.2	10.2.1, 10.3.1, 12.2.1	5	5	Communicate effectively with profession by presenting project related activities .
10	_	10.2, 10.3	10.2.1, 10.3.1	3	6	Demonstrate knowledge, skills and attitude of a professional engineers and community at large .

SEM:VIII(R16)

SEM:VIII(R16)						
Course Code:	CSC801		Course Name	HMI		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	_	1.4	1.4.1	3	1	Apply User Interface (UI) design principles to solve a problem HMI
2	_	2.6	2.6.5	4	2	Compare & contrast alternative processes of design & software to select best process.
3	_	3.8	3.8.2	3	3	Implement & Integrate graphical user interface with modern software tools.
4	_	4.5	4.5.1	6	4	Design screen by using different components & develop interface using different interaction techniques.
4	_	4.5	4.5.1	6	5	Design & develop mobile interface based on mobile element & tools.
2	_	2.6	2.6.5	4	6	Compare & contrast interaction styles for communication to select best styles .
Course Code:	CSC802		Course Name	DC		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1	_	1.3, 1.4	1.3.1, 1.4.1	2,3	1	Recognize fundamentals of Distributed system. Apply or demonstrate knowledge of the basic elements and concepts related to distributed system technologies.
2,3	1	2.2, 3.2, 3.3	2.2.2,2.2.4, 3.2.1,3.3.1	2,3,4	2	Investigate, identify and analyze the middleware technologies that support distributed applications such as RPC, RMI and Object based middleware.
2	_	2.1, 2.3, 2.4	2.1.2,2.3.1, 2.4.4	2, 3 , 4	3	Apply knowledge of synchronization and mutual exclusion to identify and analyze the various techniques used for clock synchronization and mutual
1,2	1	2.1, 2.2	2.1.2,2.2.4	2, 4	4	Elaborate the concepts of Resource and Process management and synchronization algorithms. Analyze different algorithms of it.
2,6	_	2.1, 2.2, 6.1	2.1.2, 2.2.3,6.1.1	2, 3	5	Identify use of consistency, replication and demonstrate the use of Consistency and Replication Management.
1,2,5	_	1.4, 2.2, 5.2	1.4.1,2.2.2, 5.2.1	3, 4	6	Apply the knowledge of Distributed File System to analyze various file systems like NFS, AFS and the experience in building large-scale distributed applications
Course Code:	CSDLO801		Course Name	NLP		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
12, 2	_	12.5,2.6	12.5.2, 2.6.3	4	1	Identify and Illustrate Processing of natural language to cope with change in A world of technology.
2, 5	_	2.5,5.4	2.5.2 5.4.1	1	2	Describe and Recognize appropriate techniques for word level analysis in natural language processing
4	1	4.5	4.5.1	5	3	Design and Develop the concept of main language level :Morphology, syntax, semantic, pragmatic For a software system to meet specified needs with social
2, 5	_	2.7,5.5	2.7.1, 5.5.1	4	4	Identify engineering problem and Select model for semantic analysis.
5, 2	_	5.4,2.5	5.4.2, 2.5.2	3	5	Discover difficult issues of society and Use the various language models in world of NLP.
9, 10, 3	2	9.4, 10.6, 3.8	9.4.1,10.6.2 , 3.8.2	6	6	Design & Invent NLP mini projects in groups.
Course Code:	ILO801		Course Name	EVM		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
7	_	7.1	7.1.2	1	1	To Understand and identify environmental issues relevant to India and global concerns
7	_	7.2	7.2.1	2	2	To Study the needs for sustainable development
7	_	7.1	7.1.1	1	3	To Learn concepts of ecology
7	_	7.2	7.2.2	2	4	To Understand the Scope and implementation of Environment Management in corporates
7	_	7.1	7.1.1	3	5	To Learn Total Quality Environmental Management and its certification process
7	_	7.2	7.2.2	2	6	To Familiarize environment related legislations

Course Code:	CSL801		Course Name	HMI LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
2	2	2.6	2.6.3	6	1	Design user centric interfaces.
6	2	6.3	6.3.1	6	2	Develop innovative and user friendly interfaces.
5	2	5.5	5.5.1	3	3	Use HMI in their day-to-day activities
5	2	5.6	5.6.2	4	4	Analyze existing interface designs, and improve them.
6	2	6.3	6.3.1	4	5	Illustrate application for social and technical task.
2	1	2.6	2.6.5	4	6	Distinguish input and output devices .
Course Code:	CSL802		Course Name	DC LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
1,4	_	1.3, 4.2	1.3.1, 4.2.1	2,3,4	1	Develop, test and debug RPC/RMI based client-server programs.
5	_	5.1, 5.2	5.1.1, 5.2.1	2, 3, 4	2	Implement the main underlying components of distributed systems such as IPC.
5	_	5.1, 5.2	5.1.1, 5.2.1	2, 3, 4	3	Implement the main underlying components of distributed systems such as name resolution.(DNS, ns lookup).
2,5	1	2.2, 2.3, 5.2	2.2.4, 2.3.2, 5.2.1	2, 4	4	Implement various techniques of synchronization.
4	_	4.2	4.2.1	3, 6	5	Design and implement application programs on distributed systems.
1,2	_	1.4, 2.2	1.4.1 2.2.2	2	6	Explore the concepts of distributed file systems.
Course Code:	CSL803		Course Name	CC LAB		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
4,6	_	4.2, 6.2	4.2.1 6.2.1	2,3	1	Apply the knowledge of MAC layer techniques to implement CDMA and understand its impact.
2,4,5,6	1	2.1, 4.2, 5.1, 6.2	2.1.3 4.2.1	2,3,4,5,6	2	Understand GSM. Design a security system using A3/A5/A8 algorithm, Handoff system. Analyze the difference in simple system and handoff system working.
1,4,6	_	1.3, 4.2, 6.2	1.3.1 4.2.1	2,3	3	Understand Java, J2ME. Apply the knowledge to design a system which calculates income tax/EMI.
1,3,5	1	1.3, 3.2, 5.1	1.3.1 3.2.2	3	4	Apply the knowledge of mobility. Investigate problems because of mobility. Apply appropriate technique to design mobile node discovery.
4,6	_	4.2, 6.2	4.2.1 6.2.1	6	5	Understand Android SDK. Design a software system or application which makes use of database, gives alert message upon receiving
2,5	_	2.1, 5.1	2.1.3 5.1.2	3,6	6	Select and apply appropriate technique to find route from source to destination, Design a system and analyze the results.
Course Code:	CSL804		Course Name	COMPUTATIONAL LAB-II(NLP)		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
12, 2	_	12.5,2.6	12.5.2, 2.6.3	4	1	Identify and Illustrate Processing of natural language to cope with change in A world of technology.
2, 5	_	2.5,5.4	2.5.2, 5.4.1	1	2	Describe and Recognize appropriate techniques for word level analysis in natural language processing
4	1	4.5	4.5.1	5	3	Design and Develop the concept of main language level :Morphology, syntax, semantic, pragmatic For a software system to meet specified needs with social
2, 5	_	2.7,5.5	2.7.1, 5.5.1	4	4	Identify engineering problem and Select model for semantic analysis.
5, 2	_	5.4,2.5	5.4.2, 2.5.2	3	5	Discover difficult issues of society and Use the various language models in world of NLP.
9, 10, 3	2	9.4,10.6,3.8	9.4.1,10.6.2 3.8.2	6	6	Design & Invent NLP mini projects in groups.

Course Code:	CSP805		Course Name	MAJOR PROJECT		
PO	PSO	Competancy	PI	Bloom's Level	CO	Description
6,7	2	6.1, 7.1, 7.2	6.1.1,7.1.1, 7.2.1	2,3	1	Identify societal, health and legal issues and apply practical knowledge within the chosen area of technology for project development.
8,11	1	8.2, 11.2, 11.3	8.2.2,11.2.1, 11.3.1	2,4,6	2	Identify, analyze and formulate problem within programming projects in a comprehensive and systematic approach
5	1	5.1,5.2	5.1.2,5.2.1	6	3	Design and develop Engineering solutions to complex problem utilizing a systematic approach
9,10	-	9.3, 10.2, 10.3	9.3.1,10.2.1, 10.3.1	5	4	Work effectively as an individual or in a team in development of technical projects
10,12	1,2	10.2, 10.3, 12.2	10.2.1,10.3.1, 12.2.1	5	5	Communicate effectively with profession by presenting project related activities
10	-	10.2, 10.3	10.2.1, 10.3.1	3	6	Demonstrate knowledge, skills and attitude of a professional engineers and community at large