

**DEPARTMENT OF  
ARTIFICIAL INTELLIGENCE MACHINE LEARNING**

**Course Outcomes**

Second Year: III SEM (REV- 2019 'C' Scheme)

<b>Course Code:</b>	<b>CSC 301</b>
<b>Course:</b>	<b>Applied Mathematics III</b>
<b>CO-1</b>	Understand the concept of Laplace transform and its application to solve the real integrals in engineering problems.
<b>CO-2</b>	Understand the concept of inverse Laplace transform of various functions and its applications in engineering problems.
<b>CO-3</b>	Expand the periodic function by using the Fourier series for real-life problems and complex engineering problems
<b>CO-4</b>	Understand complex variable theory, application of harmonic conjugate to get orthogonal trajectories and analytic functions.
<b>CO-5</b>	Apply the concept of Correlation and Regression to the engineering problems in data science, machine learning, and AI.
<b>CO-6</b>	Understand the concepts of probability and expectation for getting the spread of the data and distribution of probabilities.

<b>Course Code:</b>	<b>CSC 302</b>
<b>Course:</b>	<b>Discrete Structures and Graph Theory</b>
<b>CO-1</b>	Understand the notion of mathematical thinking, mathematical proofs and to apply them in problem solving.
<b>CO-2</b>	Ability to reason logically.
<b>CO-3</b>	Ability to understand relations, functions, Diagraph and Lattice.
<b>CO-4</b>	Ability to understand and apply concepts of graph theory in solving real world problems.
<b>CO-5</b>	Understand use of groups and codes in Encoding-Decoding
<b>CO-6</b>	Analyze a complex computing problem and apply principles of discrete mathematics to identify solutions.

<b>Course Code:</b>	<b>CSC 303</b>
<b>Course:</b>	<b>Data Structures</b>
<b>CO-1</b>	Students will be able to implement Linear and Non-Linear data structures.
<b>CO-2</b>	Students will be able to handle various operations like searching, insertion, deletion and traversals on various data structures.
<b>CO-3</b>	Students will be able to explain various data structures, related terminologies and its types.
<b>CO-4</b>	Students will be able to choose appropriate data structure and apply it to solve problems in various domains.
<b>CO-5</b>	Students will be able to analyze and implement appropriate searching techniques for a given problem.
<b>CO-6</b>	Students will be able to demonstrate the ability to analyze, design, apply and use data structures to solve engineering problems and evaluate their solutions.



<b>Course Code:</b>	CSC 304
<b>Course:</b>	Digital Logic and Computer Architecture
<b>CO-1</b>	To illustrate different number systems and basic structure of computer systems.
<b>CO-2</b>	To demonstrate the arithmetic algorithms.
<b>CO-3</b>	To articulate the basic concepts of digital components and processor organization.
<b>CO-4</b>	To indicate the generation of control signals of computers
<b>CO-5</b>	To demonstrate the memory organization.
<b>CO-6</b>	To describe the concepts of parallel processing and different Buses.

<b>Course Code:</b>	CSC 305
<b>Course:</b>	Computer Graphics
<b>CO-1</b>	Describe the basic concepts of Computer Graphics
<b>CO-2</b>	Demonstrate various algorithms for basic graphics primitives
<b>CO-3</b>	Apply 2-D geometric transformations on graphical objects.
<b>CO-4</b>	Use various Clipping algorithms on graphical objects
<b>CO-5</b>	Explore 3-D geometric transformations, curve representation techniques and projections methods
<b>CO-6</b>	Explain visible surface detection techniques and Animation.

<b>Course Code:</b>	CSL 301
<b>Course:</b>	Data Structures Lab
<b>CO-1</b>	Students will be able to implement various linear and nonlinear data structures.
<b>CO-2</b>	Students will be able to handle operations like insertion, deletion, searching and traversing on various data structures

<b>Course Code:</b>	CSL 302
<b>Course:</b>	Digital Logic and Computer Architecture Lab
<b>CO-1</b>	To discern the basics of digital components
<b>CO-2</b>	Design the basic building blocks of a computer: ALU, registers, CPU and memory
<b>CO-3</b>	To recognize the importance of digital systems in computer architecture
<b>CO-4</b>	To implement various algorithms for arithmetic operations.



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<b>Course Code:</b>	CSL 303
<b>Course:</b>	Computer Graphics Lab
<b>CO-1</b>	Implement various output and filled area primitive algorithms
<b>CO-2</b>	Apply transformation, projection and clipping algorithms on graphical objects.
<b>CO-3</b>	Implementation of curve and fractal generation.
<b>CO-4</b>	Develop a Graphical application/Animation based on learned concept

<b>Course Code:</b>	CSL 304
<b>Course:</b>	Skill Lab : Object Oriented Programming Methodology
<b>CO-1</b>	To apply fundamental programming constructs
<b>CO-2</b>	To illustrate the concept of packages, classes and objects.
<b>CO-3</b>	To elaborate the concept of strings, arrays and vectors.
<b>CO-4</b>	To implement the concept of inheritance and interfaces.
<b>CO-5</b>	To implement the concept of exception handling and multithreading
<b>CO-6</b>	To develop GUI based application

<b>Course Code:</b>	CSM 301
<b>Course:</b>	Mini Project -I A
<b>CO-1</b>	Identify problems based on societal /research needs.
<b>CO-2</b>	Apply Knowledge and skill to solve societal problems in a group.
<b>CO-3</b>	Develop interpersonal skills to work as member of a group or leader
<b>CO-4</b>	Draw the proper inferences from available results through theoretical/ experimental/simulations
<b>CO-5</b>	Analyze the impact of solutions in societal and environmental context for sustainable development.
<b>CO-6</b>	Use standard norms of engineering practices
<b>CO-7</b>	Excel in written and oral communication.
<b>CO-8</b>	Demonstrate capabilities of self-learning in a group, which leads to lifelong learning.
<b>CO-9</b>	Demonstrate project management principles during project work



Second Year: III SEM (REV- 2021-2022 'C' Scheme)

<b>Course Code:</b>	CSC 401
<b>Course:</b>	Engineering Mathematics – IV
<b>CO-1</b>	Apply the concepts of eigen values and eigen vectors in engineering problems
<b>CO-2</b>	Use the concepts of Complex Integration for evaluating integrals, computing residues & evaluate various contour integrals.
<b>CO-3</b>	Apply the concept of Z- transformation and its inverse in engineering problems
<b>CO-4</b>	Use the concept of probability distribution and sampling theory to engineering problems
<b>CO-5</b>	Apply the concept of Linear Programming Problems of optimization
<b>CO-6</b>	Solve Non-Linear Programming Problems for optimization of engineering problems

<b>Course Code:</b>	CSC 402
<b>Course:</b>	Analysis of Algorithms
<b>CO-1</b>	Analyze the running time and space complexity of algorithms .
<b>CO-2</b>	Describe, apply and analyze the complexity of divide and conquer strategy
<b>CO-3</b>	Describe, apply and analyze the complexity of greedy strategy.
<b>CO-4</b>	Describe, apply and analyze the complexity of dynamic programming strategy
<b>CO-5</b>	Explain and apply backtracking, branch and bound.
<b>CO-6</b>	Explain and apply string matching technique.

<b>Course Code:</b>	CSC 403
<b>Course:</b>	Database Management Systems
<b>CO-1</b>	Students should be able to explain the fundamentals of a database system
<b>CO-2</b>	Students should be able to design and draw ER and EER diagram for the real life problem.
<b>CO-3</b>	Students should be able to convert conceptual model to relational model and formulate relational algebra queries.
<b>CO-4</b>	Students should be able to design and querying database using SQL.
<b>CO-5</b>	Students should be able to analyze and apply concepts of normalization to relational database design.
<b>CO-6</b>	Students should be able to describe the concept of transaction, concurrency and recovery .



<b>Course Code:</b>	CSC 404
<b>Course:</b>	Operating Systems
<b>CO-1</b>	Understand the objectives, functions and structure of OS
<b>CO-2</b>	Analyze the concept of process management and evaluate performance of process scheduling algorithms.
<b>CO-3</b>	Understand and apply the concepts of synchronization and deadlocks
<b>CO-4</b>	Evaluate performance of Memory allocation and replacement policies
<b>CO-5</b>	Understand the concepts of file management.
<b>CO-6</b>	Apply concepts of I/O management and analyze techniques of disk scheduling

<b>Course Code:</b>	CSC 405
<b>Course:</b>	Microprocessor
<b>CO-1</b>	Describe core concepts of 8086 microprocessor
<b>CO-2</b>	Interpret the instructions of 8086 and write assembly and mixed language programs
<b>CO-3</b>	Identify the specifications of peripheral chip
<b>CO-4</b>	Design 8086 based system using memory and peripheral chips
<b>CO-5</b>	Appraise the architecture of advanced processors
<b>CO-6</b>	Understanding hyperthreading technology

<b>Course Code:</b>	CSL 401
<b>Course:</b>	Analysis of Algorithms Lab
<b>CO-1</b>	To introduce the methods of designing and analyzing algorithms
<b>CO-2</b>	Design and implement efficient algorithms for a specified application
<b>CO-3</b>	Strengthen the ability to identify and apply the suitable algorithm for the given real-world problem.
<b>CO-4</b>	Analyze worst-case running time of algorithms and understand fundamental algorithmic problems

<b>Course Code:</b>	CSL 402
<b>Course:</b>	Database Management Systems Lab
<b>CO-1</b>	Design ER /EER diagram and convert to relational model for the realworld application. 2
<b>CO-2</b>	Apply DDL, DML, DCL and TCL commands 3
<b>CO-3</b>	Write simple and complex queries 4
<b>CO-4</b>	Use PL / SQL Constructs



<b>Course Code:</b>	CSL 403
<b>Course:</b>	Operating System Lab
<b>CO-1</b>	To gain practical experience with designing and implementing concepts of operating systems such as system calls, CPU scheduling, process management, memory management, file systems and deadlock handling using C language in Linux environment.
<b>CO-2</b>	To familiarize students with the architecture of Linux OS .
<b>CO-3</b>	To provide necessary skills for developing and debugging programs in Linux environment
<b>CO-4</b>	To learn programmatically to implement simple operation system mechanisms

<b>Course Code:</b>	CSL 404
<b>Course:</b>	Microprocessor Lab
<b>CO-1</b>	Use appropriate instructions to program microprocessor to perform various tasks
<b>CO-2</b>	Develop the program in assembly language for intel 8086 processor
<b>CO-3</b>	Demonstrate the execution and debugging of assembly and mixedlanguage program

<b>Course Code:</b>	CSL 405
<b>Course:</b>	Skill Lab : Python Programming
<b>CO-1</b>	To understand basic concepts in python .
<b>CO-2</b>	To explore contents of files, directories and text processing with python
<b>CO-3</b>	To develop program for data structure using built in functions in python.
<b>CO-4</b>	To explore django web framework for developing python-based web application
<b>CO-5</b>	To understand Multithreading concepts using python.
<b>CO-6</b>	To explore numpy and pandas libraries

<b>Course Code:</b>	CSM 401
<b>Course:</b>	Mini Project I – B
<b>CO-1</b>	Identify problems based on societal /research needs.
<b>CO-2</b>	Apply Knowledge and skill to solve societal problems in a group.
<b>CO-3</b>	Develop interpersonal skills to work as member of a group or leader
<b>CO-4</b>	Draw the proper inferences from available results through theoretical/ experimental/simulations .
<b>CO-5</b>	Analyze the impact of solutions in societal and environmental context for sustainable development.
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