Course Code: CSE1151
Course Title: Computer Programming
Course Credit: 3

Course Description: This course will begin with a brief description of basic programming languages and their classifications. The language of C programming will be taught in detail. The object oriented programming will also be introduced**.**

Objectives:
1. To introduce the students with different types of programming languages.
2. To use the control statements to write primary computer programs.
3. Handle arrays, pointers, and functions to write advanced programs.
4. Use structure, string operations and union along with other tool to solve real life problems using computer programming.
5. Use primary object oriented programming when needed.

Course Outcome (CO): Upon completion of the course, students will be able to:

CO No.	CO Statement	Domain and Level of Learning Taxonomy	Delivery Methods	Assessment Tools
CO1	Know basic program structure of a typical 'C' program, I/O statements, variables, constants, and operators	Cognitive: Level 1 (Remember)	☒ Lecture ☒ Tutorial ☐ Discussion ☒ Interaction ☐ Audio/Video	☒ Class Test ☒ Quiz ☒ Assignment ☒ Final Exam ☐ Project
CO2	Use control flow statements and blocks: if-else, switch and Break statement, Loop statements: for, while, do-while, break and continue.	Cognitive: Level 1 (Understand)	☒ Lecture ☒ Tutorial ☐ Discussion ☒ Interaction ☐ Audio/Video	☒ Class Test ☒ Quiz ☒ Assignment ☒ Final Exam ☐ Project
CO3	Solve problems using functions, arrays, structure, unions, string operations, and pointers.	Cognitive: Level 3 (Apply)	☒ Lecture ☒ Tutorial ☐ Discussion ☒ Interaction ☐ Audio/Video	☒ Class Test ☒ Quiz ☒ Assignment ☒ Final Exam ☐ Project
CO4	Use Object Oriented Programming to solve real life problems.	Cognitive: Level 6 (Create)	☒ Lecture ☒ Tutorial ☐ Discussion ☒ Interaction ☐ Audio/Video	☒ Class Test ☒ Quiz ☒ Assignment ☒ Final Exam ☐ Project

Sl. No.	Course content	CO mapping
	Section A	
1	**Introduction to C Programming:** Programming language and their classifications, variables and constants, operators-arithmetic and logical and bitwise, and expression.	CO1 CO2
2	**Control Statements:** Control flow statements and blocks: if-else, switch and break statement, loop statements- for, while, do-while, break and continue	CO2
3	**Array and Pointers:** Arrays-single dimensional and multi-dimensional, strings as array of characters, string library functions, solving problems using arrays, pointers and its application.	CO3
	Section B	
4	**Functions:** Library functions, user-defined functions, arguments passing among functions, variable scope, recursion.	CO3
5	**String Operations:** Declaring and initializing string variables, string I/O operations, problem solving using string operations and arrays.	CO3

6	**Structure and Union:** Declaring and processing of structure, arrays and structure, structure and pointers, union file: opening and closing a file, creating a file, processing a file, I/O file handling.	CO3
7	**Basic of Object oriented programming:** Introduction to C++, classes and objects; encapsulation, inheritance, constructors, and destructors, operator and function overloading, polymorphism.	CO4

Suggested Reading Lists/Essential Readings:

1. Byron S. Gottfried   : Theory and Problems of Programming with C
2. Herbert Schild   : Teach yourself C
3. Robert Lafore   : The Waite Group's C Programming using Turbo C++
4. H.M Deitel and P.J Deitel : C how to program
5. E. Balagurusamy   : Programming in ANSI C