

# **PROGRAMMING IN C**

**L T P C**

**3 0 0 3**

**COURSE CODE: CS1001**

**COURSE OBJECTIVES:**

To develop C programs using basic programming constructs

- To develop C programs using arrays and strings
- To develop applications in C using functions, pointers and structures
- To perform input/output and file handling

**C PROGRAMMING BASICS:**

**12**

Introduction to C programming: fundamentals - structure of a C program - compilation and linking processes - Constants, Variables, Data Types - Expressions using operators in C - Managing Input and Output operations - Decision Making and Branching - looping statements - solving simple scientific and statistical problems

**ARRAYS AND STRINGS:**

**10**

Arrays - Initialization - Declaration - One dimensional and Two dimensional arrays - Strings: String operations - String Arrays - Simple programs: sorting, searching, matrix operations

**FUNCTIONS AND POINTERS:**

**8**

Function: Definition of function - Declaration of function - Pass by value - Pass by reference - Recursion - Pointers: Definition - Initialization - Pointers arithmetic - Pointers and arrays

**STRUCTURES AND UNION:**

**8**

Introduction - need for Structure data type - Structure definition - Structure declaration - Structure within a structure - Union - Programs using Structures and Unions - Storage classes - Preprocessor directives - Simple programs: singly linked list, doubly linked list

**FILE HANDLING AND ADDITIONAL FEATURES IN C:**

**7**

Console input output functions - disk input output functions - data files - Additional Features in C: command line arguments, bit wise operators, enumerated data types, type-casting

**TOTAL PERIODS: 45**

**COURSE OUTCOMES:**

Upon completion of the course, the students will be able to

- Develop simple applications in C using basic constructs
- Design and implement applications using arrays and strings
- Develop and implement applications in C using functions and pointers
- Develop applications in C using structures

**TEXT BOOK:**

1. Kernighan, B.W and Ritchie, D. M, “The C Programming language”, 2nd edition, Pearson Education, 2006