



Course Name: Programming in C

Number of Credits: 4

Level: 3

Learning Objective(s):

An insight of procedural programming using C language where students would learn how to write a well-structured, self-documenting, and maintainable code using C.

Pre-requisites:

Logic development and programming concepts

Pedagogy:

- Lectures
- Hands-on lab sessions

Course Outline:

Sr. No.	Topics	Hrs
1	Introduction Features of C Structure of C program- functions, statements, tokens, C compiler (gcc)-Preprocessing, compilation and linking	03
2	The Data Data types Constants – literal, symbolic and named , enumerations variables(Identifiers), type modifiers typedef	04
3	Standard library functions Header files Basic input-output - printf, scanf, conversion specifiers math functions	04
4	Operators and Expressions Unary,Binary,ternary Arithmetic,bitwise Operator Precedence, associativity lvalue and rvalue	04
5	User defined functions Function arguments – passing values local and global variables return statement, return values	03

6	Structured Programming - Decision making : Relational operators If statement, if .. else statement Logical operators switch case statements. Ternary operator	05
7	Structured programming - iterations: loops - for , while , do-while nested loops recursion	05
	Advanced Pre-processor features function macros stringizing Conditional pre-processing and compilation	2
8	Pointers indirection and de-referencing constant pointers and pointer constants Functions – call by references	04
9	Arrays characteristics implementation – Pointers Single and multi-dimensional arrays Standard library functions – string handling, memory management passing arrays to functions, returning arrays from functions	08
10	Structured types structures – structure, union Pointers to the structures -functions, arrays	08
11	Files Concept of file File pointer File processing high level and low level file handling Formatted and Un-formatted I/O	10
	Total	60

Text:

1. Spirit of C by Moolish Cooper
2. The C book by Denis Ritchie
3. ANSI C by Kernigham and Ritchie

Evaluation:

1. Assignments
2. Hands on lab work
3. Written examination