FUNDAMENTALS OF PROGRAMMING (THEORY) CS-100

Pre-requisite: none
Credit Hours   01
Contact Hours   12

RECOMMENDED BOOKS

- Object-Oriented Programming in C++, by Robert Lafore, 4th edition.

REFERENCE BOOKS

- Schaum's Outlines Programming with C++, by John R. Hubbard, 2nd edition.
- Schaum's Outlines Programming with C, by Byron S. Gottfried, 2nd edition.
- C++ How to Program, by Dietel&Dietel, 5th edition.
- Let Us C, by Yashavant P. Kanetkar, 5th edition.

OBJECTIVE OF COURSE

This course has been designed for students who have no prior programming experience. The course introduces the fundamental concepts of procedural programming. The main aim is to introduce data types, control structures, functions, arrays, files, and the mechanics of running, testing, and debugging. The Fundamental programming concepts: Syntax and semantics of a higher-level language; variables, types, expressions, and assignment.

S.NO	CLO/PLOS MAPPING	DOMAIN	PLO
01	**Design codes** to solve simple problems.	C5, C3	01
02	**State codes** in the Processing programming environment.	C1	03
03	**Be able to correct**, Evaluate Processing programs.	C6	02
04	**Be able to identify** how Processing programs work.	C2	05

COURSE CONTENTS

C++ Programming Basics
- Basic Programming Construction
- Input/output, Directives and comments
- Integer and Character variables
- Floating Points types, Bool and Conversion Type

- Arithmetic Operators

Loops and Decisions
- Relation Operator
- Loops
- Decisions
- Logical operators
- Other Control statements

Structures
- Structures
- Enumerations

Functions
- Simple Functions
- Passing Arguments to Functions
- Returning Values from Functions
- Reference Arguments
- Overloading Functions
- Recursion
- Returning by reference

Arrays and Strings
- Arrays Fundamentals
- Passing Arrays to functions
- C-Strings
- Copying Strings the Hard way
- Copying Strings the Easy way

Pointers and File Handling
- The Address-of Operator &
- Pointers and Arrays
- Pointers and Functions
- Pointers and Strings
- File handling