

Module Title:	Computer Programming -1
Module ID:	CSC 112
Prerequisite:	None
Level:	1
Credit Hours:	3 (2+2+1)

Module Description:

Data types, variables, assignment, general structure of a program; Input/Output; Arithmetic expression; Introduction to Classes and Objects; Relational operators; Boolean expression, logical operators; conditional Statements: If. Else, Switch; Loop: for, while, do .. while; Methods: Constructor, getter/setter, Method overloading; Array; Exception handling.

Module Aims:

- Construct error-free C++ programs.
- Divide a problem into its logical components.
- Understand the basic structured programming concepts.
- Design and code small to medium sized problems from the start using C/C++ constructs, such as input/output statements, if-then-else statements, while and for loops, functions
- Employ some of the available data structures in C++ such as built-in data types, arrays and pointers to solve programming problems.
- Use the required developments tools to write, compile, trace and debug C++ programs.

Learning Outcomes:

- Identify the basic components of a computer system.
- Design an algorithm to solve a given problem using the top-down design approach.
- Know the difference between call-by-value and call-by-reference parameters.
- Understand the notion of procedural abstraction.
- Understand and use the three basic programming structures: sequence, selection, repetition.
- Use arrays, strings and pointers to manipulate data.

List of Topics	No. of Weeks	Contact Hours
Chapter 1 Introduction to computers and basic programming concepts and constructs writing simple C programs main parts of C programs main function variables built-in data type	2	6
Chapter 2 Using cout and cin Variable Definitions	2	6
Chapter 3 The if Statement The if/else Statement The if/else if Statement switch Statement	2	6
Chapter 4 The while Loop The do while Loop The for Loop	3	9
Chapter 5 Functions and Arguments Value-Returning Functions	2	6
Chapter 6 Accessing Array Elements with a Loop Passing an Array to a Function	2	6
Chapter 7 The Binary Search The Selection Sort	2	6

Textbook:

C++: How To Program, Deitel and Deitel, 5th edition, Prentice Hall, 2005.