SYLLABUS FOR C & C++

Programming in 'C'

CHAPTER - 1 Introduction of Programming Languages

1.1 Types of Languages
1.2 Evolution of 'C' Language
1.3 Structure of a 'C' Program
1.4 'C' Program development life cycle
1.5 Executing and Debugging a 'C' Program

CHAPTER – 2 'C' Tokens

2.1 Keywords and Identifiers
2.2 Operators
2.3 Constants
2.4 Variables
2.5 Data Types
2.6 Precedence of Operators
2.7 Scope and Lifetime of Variables

CHAPTER – 3 Control Statement and Expressions

3.1 Decision Making using if statement

3.2 Types of if …else block
3.3 Switch case Block
3.4 Arithmetic Expressions
3.5 Evaluation of Expressions
3.6 GOTO statement

CHAPTER – 4 Looping

4.1 Concept of Loop
4.2 For loop 4.3 While loop
4.4 Do while loop
4.5 Jumping in Loop
4.6 break and continue statement

CHAPTER – 5 Arrays and String

5.1 Introduction of Array
5.2 One - D Array
5.3 Two - D Array
5.4 Multidimensional Array
5.5 Dynamic Arrays
5.6 Implementing String Variables
5.7 String handling Functions

CHAPTER – 6 Functions

6.1 Concept of Function
6.2 User defined Function

6.3 System Defined Function
6.4 Types of parameter passing in function

CHAPTER – 7 Pointers

7.1 Need of Pointers
7.2 Types of Pointers
7.3 Pointer Expression
7.4 Arrays of Pointers
7.5 Pointers and Functions

CHAPTER - 8 Structure and Unions

8.1 Need of Structure
8.2 Implementing Structure Variable
8.3 Arrays of Structure
8.4 Structure within Structure
8.5 Introduction of Unions
8.6 Difference between Structure and Unions

CHAPTER – 9 File Handling using 'C'

9.1 Opening and Closing File
9.2 Input / Output operations on File
9.3 Random Access to Files
9.4 Command Line Arguments

CHAPTER - 10 Dynamic Memory Allocation

10.1 Concept of Dynamic Allocation
10.2 Implementing Malloc and Calloc Functions
10.3 Releasing the free space

CHAPTER - 11 Storage Classes and Preprocessor

11.1 Introduction of Storage Class
11.2 Types of Storage Classes
11.3 Introduction of Pre-processor
11.4 Macro Substitution
11.5 File Inclusion Programming in 'C++'

CHAPTER - 12 Introduction to Object Oriented Programming

12.1 Concept of OOP
12.2 Features of OOP
12.3 Introduction of 'C++'
12.4 Structure of 'C++' program
12.5 Executing and Debugging a 'C++' Program

CHAPTER - 13 'C++' Tokens and Type Casting

13.1 Keywords and Identifiers
13.2 Operators
13.3 Constants

13.4 Variables
13.5 Data Types
13.6 Precedence of Operators
13.7 Scope and Lifetime of Variables

CHAPTER – 14 Classes & Objects

14.1 Classes & Object Specifier
14.2 Defining data members and member functions
14.3 Array of objects
14.4 Managing console I/O
14.5 'C++' stream classes
14.6 Formatted and unformatted console I/O
14.7 Usage of manipulators

CHAPTER – 15 Function in 'C++'

15.1 Call by reference, Return by reference
15.2 Function overloading and default arguments
15.3 Inline function
15.4 Static class members
15.5 Friend functions
15.6 Virtual Functions

CHAPTER - 16 Constructors and Destructor

16.1 Concept of Constructor
16.2 Types of Constructors

16.3 Memory allocation (new and delete)
16.4 Usage of destructor

CHAPTER - 17 Operator Overloading

17.1 Overloading Unary and Binary operators
17.2 Overloading using friend function

CHAPTER – 18 Inheritance
18.1 Types of inheritance
18.2 Virtual base classes and abstract base classes
18.3 Constructor and destructor in derived class

CHAPTER - 19 Working with files

19.1 File operations
19.2 File pointer and their manipulation
19.3 File updation with random access

CHAPTER – 20 Exception Handling

20.1 Various Exception Handling classes
20.2 Implementing try and catch block
20.3 Use of throw keyword