



Annexure – V

Syllabus of CCCP

Objective:

This course is designed to impart software development training programme IT aspirants. After completing the course the incumbent is able to do the software development using object oriented methodologies and various programming languages. This course is more practical oriented. After completion of course the candidates will be able to get employment as Software Developer and Programmer in IT industries. It consists of following four modules:

1. Introduction & C Fundamentals

Types of Programming Language, Introduction to C, C character set, Identifiers and keywords, Data types, Constants, Variable and Arrays, Declarations, Expressions, Statements, Symbolic constants

2. Operators and expressions

Arithmetic operators, Unary operators, Relational and logical operators, Assignment operators, Conditional operators, Library function.

3. Data Input and Output

Single character Input- get char function, Single character Output- put char function, Entering Input Data-Scanf function, Writing Output Data- printf function, Get and puts function.

4. Control statements

While statement, Do-while statement, For statement, Nested loops, If-else statement, Switch statement, Break statement, Continue statement, Comma statement, Go to statement.

5. Functions

Introduction (Brief overview), Defining function, Accessing a function, Passing arguments to a function, Specifying argument data types, Function prototypes, Recursion

6. Program Structure

Storage Classes, Automatic variables, Static variables, Multiple file programs

7. Arrays

Defining an Array, Processing an Array, Passing Arrays to a function, Multidimensional Arrays, Arrays and Strings.

8. Pointers

Fundamentals, Pointer declarations, Passing pointer to a function, Pointers and one-dimensional Arrays, Operations on pointers, Pointers and multidimensional Arrays, Arrays of pointers, Passing function to other function.

9. Structures and Unions

Defining a structure, Processing a structure, User-defined data type (typedef), Structures and Pointers, Passing structure to a function, Self referential structure, Unions, Enumerations.

10. File Handling

Opening and closing data file, Creating data file, Processing data file, Unformatted data files



11. Principles of object oriented Programming

Procedure oriented programming approach, Object-oriented Programming paradigm, Concepts of object oriented Programming, Benefits of OOP.

12. Introduction to C++

Introduction to C++, Applications of C++, A Simple C++ Program, Structure of C++ Program, Creating source file, Compiling and linking

13. Functions in C++

Main functions, Function prototyping, Call by reference, Return by reference, Inline factors, Default arguments, Const arguments, Function overloading, Friend and virtual functions.

14. Classes and objects

C structure, Specifying a class, Defining member functions, C++ Program with class, Making an outside function Inline, Nesting of member functions, Private member functions, Arrays within a class, Memory allocation for objects, Static data members, Static member functions, Arrays of objects, Objects as function argument, Friend functions, Returning objects, Const member functions, Pointers to members, Local classes

15. Constructors and Destructors

Constructors, Parameterized constructors, Multiple Constructors in a class, Constructors with Defaults arguments, Dynamic Initialization of objects, Copy Constructors, Dynamic Constructors, Constructing two-dimensional Arrays, Const objects, Destructors

16. Tokens, Expressions and Control structures

Tokens, Keywords, Identifies and constants, Basic data types, User defined data types, Derived data types, Symbolic constants, Type compatibility, Declaration of variables, Dynamic Initialization of variables, Reference variables, Operator in C++, Scope resolution operator, Member dereferencing operators, Memory management operators, Manipulators, Type cast operator, Expressions and their types, Special assignment expressions, Implicit conversions, Operator overloading (overview), Operator procedure, Control structures.

17. Templates

Class templates, Class templates with multiple parameters, Function templates, Function templates with multiple parameters, Overloading of templates functions, Member function templates, Non-type template argument.

18. Exception Handling

Basics of Exception Handling, Exception handling Mechanism, Throwing Mechanism, Catching Mechanism, Rethrowing an Exception, Specifying Exception.

19. Manipulating Strings

Creating string objects, Manipulating string objects, Relational operations, String characteristics, Accessing characters in String, Comparing and swapping.