Paper Code : OOP:303

Paper Name : Object Oriented Programming with C++

Teaching Hours (Per Week)		**Examination Scheme**		
TH. (hours)	Pr. (hours)	Internal	External	Total
		Th. (marks)	Th. (marks)	100 (marks)
4		30	70	

Lectures = 68 Hours

"Object Oriented Programming(OOP) has become the preferred programming approach by software industries, as it offers a powerful way to cope with the complexity of real world problems. Among OOp languages OOP Languages available today, C++ is by far the most widely used Language."

Detailed Syllabus

UNIT I **5 Hrs**

Principles of Object Oriented Programming (OOP), Software Evaluation, A Look at Procedure-Oriented Programming, OOP Paradigm, Basic Concepts of OOP, Benefits of OPP, Application of OOP.

UNIT II **15 Hrs**

Introduction to C++

What is C++, A simple C++ Program, More C++ statements, Structure of C++ Program.

Tokens, Expression and controls Structures

Tokens , Keywords, Identifiers and Constants, C++ data types, Variables: Declaration, Dynamic initialization of variables, Reference variables, Operators in C++ : Scope resolution operator, Member deferencing Operators, Memory Management Operators, Manipulators, Type cast operators, Expressions and Control Structures.

Functions

The main() function, Function Prototyping, Call by reference, Return by reference, Inline function, Function Overloading.

UNIT III **24 Hrs**

Classes and Objects

Introduction, Specifying a Class, Defining member Functions, C++ Program with Class, Nesting of Member functions, Private member functions, Memory Allocation for Objects, Static Data members, Static Member Functions, Arrays within a Class, Arrays of Objects, Objects as Function Arguments, Friendly Functions, Returning Objects.

Pointers

Pointers : Declaration and initializing, Manipulation of pointers, pointers Expression and Pointer Arithmetic, Pointer with Arrays, Arrays of Pointers, Pointers to objects, this pointers, Arrays of Pointers to Objects

Constructors and Destructors

Constructors, Parameterized Constructors, Multiple Constructors in a class, Copy constructor, Destructors.

Operator overloading

Defining Operator Overloading, Overloading Unary Operators, Overloading Binary Operators, Type Conversions.

UNIT IV **14 Hrs**

Inheritance and Polymorphisms

Introduction, Defining Derived Classes, Single inheritance, Multiple inheritance, Hierarchical inheritance, Multilevel inheritance, Hybrid inheritance, Virtual Base Classes, Polymorphism, static and dynamic binding, Constructor in Derived Classes, Pointers to Derived Classes, Virtual Functions, Pure Virtual Functions.

UNIT V **10 Hrs**

I/O Operations and Files

C++ Stream Classes, Unformatted I/O Operations, Formatted I/O operations, Classes for File Streams, Opening and Closing a File : open() and close() functions, Manipulators of File Pointers : seekg(), seekp(), tellg(), tellp() functions, Sequential Input and output Operations : put (), get(), write(), read() functions, Error handling File Operations : eof(), fail(), bad(), good() .

Books for Study:

1. E. Balagurusamy - Object Oriented Programming with C++ - TMH.
2. Robert Lafore - Object Oriented Programming in Microsoft C++ - Galgotia.