

## Object Oriented Methods & Programming (ID) (IT-3002)

Course Code	(ID) IT-3002	Credits-4	L-3, T-1, P-0
Name of the Course	Object Oriented Methods & Programming		
Lectures to be Delivered	52 (1 Hr Each) (L= 39, T = 13 for each semester)		
Semester End Examination	Max. Marks: 100	Min. Pass Marks: 40	Maximum Time:3hrs
Continuous Assessment (based on sessional tests (2) 50%, Tutorials/Assignments 30%, Quiz/Seminar 10%, Attendance 10%)			Max. Marks: 50

### Instructions

- For Paper Setters:** The question paper will consist of five sections A, B, C, D, and E. Section E will be Compulsory, it will consist of a single question with 10-20 subparts of short answer type, which will cover the entire syllabus and will carry 40% of the total marks of the semester end examination for the course. Section A, B, C and D will have two questions from the respective sections of the syllabus and each question will carry 15% of the total marks of the semester end examination for the course.
- For Candidates:** Candidates are required to attempt five questions in all selecting one question from each of the sections A, B, C and D of the question paper and all the subparts of the questions in section E. Use of non-programmable calculators is allowed.

#### Section- A

**Introduction to Object oriented concepts:** Overview, Abstract data types: object, Modularization, classes, creating and destroying objects; Garbage collection strategies, overloading, dynamic binding, polymorphism, constants. Inheritance: Class inheritance, Inheriting instance variable, inheriting methods, meta classes, object inheritance, multiple and multilevel inheritance.

#### Section B

**C++ Programming Language:** Overview: Programming paradigm, support for data abstraction and object oriented programming, declaration and constants, expression and statements, functions and files,

**Classes and Objects:** Definitions of Class declaration, data members class function definition, member function definition scope resolution operator, private and public member function, nesting of member functions, creating objects, accessing class data members functions, array of objects, objects as function arguments.

**Operator overloading:** Operator function, user defined typed conversion large objects, assignments and initialization and subscripting and functions call, referencing, increment and decrement, a string class, friends and members.

#### Section C

**Inheritance through extending classes,** Base and drive classes, visibility modes, single inheritance, protected member and inheritance, multilevel inheritance, nesting of classes. Streams, templates and designs of libraries. Out put, input, formatting files and streams, C-I/O, design of libraries,

#### Section D

**Object Oriented Analysis and Design:** Object oriented analysis and systems design, objected design, semantic and entity relationship modeling, Contrasting design for databases and OOA, OOD.

**Books:**

1. The C++ Programming Language, Bjarne Stroustrup, Addison Wesley, 2000.
2. Objecting Modeling and Design, James, Rumbaugh, Michael Blaha, William Premerlani, Frederick Eddy and William Lorensen, PHI 1998.
3. Object Oriented Programming in TURBO C++, Robert Lafore, Galgotia Publications Pvt. Ltd., 1994.
4. Object Oriented Programming with C++, Balagurusamy, Tata McGraw Hill Publishing Co. Ltd., 2000.
5. Programming with C++, D.Ravichandran, Tata McGraw Hill, 1996.