

Teaching plan
Subject: Computer Science
Paper Code: COM0300104
Paper Name: Object Oriented Programming using C++

Credit/Total no. of classes.3+1
Period: Theory: 45 Hours
Practical: 30 Hours
Non Contact: 5hours

Theory
Faculty : P.P.D.Sarma

Lecture No.	Topic	Mode of Teaching (Experiential Learning, Participative Learning)	Teaching Aids use	Assessment Method
1,2	Basic Concepts of Object-Oriented Programming and design, Benefits and applications of OOP.	Participative Learning	Computer system with overhead projector	QUIZ
3,4,5,6	Structure of a Simple C++ program, Output operator, Input operator, Cascading of I/O operators, Tokens-keyword, identifiers, constants, strings and operators.	Participative Learning	Computer system with overhead projector	QUIZ
7,8	Basic data types, User defined data types, Dynamic initialization of variables, Reference variables,	Participative Learning	Computer system with overhead projector	QUIZ
9,10	Operators in C++, Scope resolution operator & applications, Member dereferencing operators, Memory Management operators, new and delete,	Participative Learning	Computer system with overhead projector	QUIZ
11	Control Structures-simple if, if else, nested if, switch, while do, break and continue statements	Participative Learning	Computer system with overhead projector	QUIZ
12	Introduction to Functions-Function Prototyping, Call-by-reference, Return by reference	Participative Learning	Computer system with overhead projector	QUIZ
13,14	Inline functions, Default arguments, Const arguments.	Participative Learning	Computer system with overhead projector	QUIZ
15, 16	Defining a class; class versus structures, creating objects, accessing class members, defining member functions-outside the class definition and inside the class definition, outside functions as inline.	Participative Learning	Computer system with overhead projector	QUIZ

17	Nesting of member functions, private member functions, memory allocation for objects.	Experiential Learning	Computer system with overhead projector	QUIZ
18,19	Array-declaring an array, accessing elements of an array, array of objects. Friendly functions. Basic Concepts of constructors and destructors with examples. Default constructor, Parameterized constructor, multiple constructors in a class.	Experiential Learning	Computer system with overhead projector	QUIZ
20, 21	Constructor with default arguments, Copy constructor. Dynamic initialization of objects. Dynamic constructors and destructors.	Experiential Learning	Computer system with overhead projector	QUIZ
22,23	Concept of Overloading. Function Overloading: Functions with different sets of parameters, default and constant parameters,	Participative Learning	Computer system with overhead projector	QUIZ
24,25	Rules for overloading operators, defining operator overloading. Overloading unary operators -prefix and postfix operators.	Participative Learning	Computer system with overhead projector	QUIZ
26	Overloading Binary operators and relational operators, Overloading using friend functions.	Experiential Learning	Computer system with overhead projector	QUIZ
27	Concept of Inheritance - defining derived classes. Types of inheritances,	Experiential Learning	Computer system with overhead projector	QUIZ
28	Making a private member inheritable, multilevel inheritance, multiple inheritance, Hierarchical inheritance, Hybrid inheritance,	Experiential Learning	Computer system with overhead projector	QUIZ
29,30	Virtual base classes, Abstract classes, Constructors in derived classes, nesting of classes,	Participative Learning	Computer system with overhead projector	QUIZ
31,32	polymorphism-Compile time and Runtime polymorphism, Pointers to	Participative Learning	Computer system with overhead projector	QUIZ

33	objects, “this” pointer, Pointer to derived classes,	Experiential Learning	Computer system with overhead projector	QUIZ
34	Virtual functions, Rules for virtual functions, Pure virtual functions.	Experiential Learning	Computer system with overhead projector	Class test
35,36	Exception handling Examples of exceptions and handling exceptions using try, catch and throw statements.	Experiential Learning	Computer system with overhead projector	QUIZ

Practical

14 practical problems given in the syllabus are to be solved and the codes are to be uploaded in github repository.