Lesson Plan

Name of Faculty : Ms. Gurjeet
Discipline : Computer Engg
Semester : 4th
Subject : OOPS
Lesson Plan Duration : 15 Weeks (From January 2018 to April 2018)

Week	Theory		Practical	
	Lecture Day	Topic (including assignment/test)	Practical Day	Topic
1st	1st	Fundamentals of object oriented programming and – procedure oriented programming	G-1	P-1Write a function using variables as arguments to swap the values of a pair of integers
			G-2	P-1 ---Do---
	2nd	object oriented programming (OOP)	G-1	P-2Consider a shopping list of items for which we place an order with a dealer every month.The list includes such as the code number and price of each item .we would like to perform operations such as adding an item to the list,deleting an item from the list and printing the total value of the order.
	3rd	Object oriented programming concepts Classes, reusability, encapsulation	G-2	P-2 ---Do---
2nd	4th	inheritance, polymorphism, dynamic binding, message passing, Data Hiding	G-1	P-3 Write a program to read name, roll no ,internal external marks using classes and display the same on the screen.
	5th	Benefits of OOPs and its Application	G-2	P-3 ---Do---
	6th	Review of constructs of C used in C++: variables, types and type declarations	G-1	Revision of P-1,P-2 and P-3
			G-2	Revision of P-1,P-2 and P-3
3rd	7th	user defined data types; increment and decrement operators	G-1	P-4 Write a program of swapping of numbers by accessing private numbers using friend function.
	8th	relational and logical operators;	G-2	P-4 ---Do---
	9th	if then else clause; conditional expressions,	G-1	Revision of P-1,P-2 , P-3 and P-4
			G-2	Revision of P-1,P-2 , P-3 and P-4
4th	10th	input and output statement, loops, switch case	G-1	P-5Define a class to represent a bank account using constructor including the following members:- Data members i) For Single Customer ii) For n Customers a) Name of the depositors b) Account number c) Type of account d) Balance amount in the account Member function - To assign initial values - To deposit an amount - To withdraw an amount after checking the balance - To display the name and balance
	11th	arrays, structure	G-2	
	12th	unions, functions, pointers; preprocessor directives and Header Files	G1 and G2	-----Revision of P-5----
5th	13th	Scope Resolution Operator Managing	G-1	-----Revision of P-5----
	14th	Console I/O Operations	G-2	-----Revision of P-5----
	15th	C++ Stream,		

			G-1 G-2	-----Revision of P-5---- -----Revision of P-5----
6th	**16th**	Unformatted and Formatted Console I/O	G-1	P-6Create 2 classes OM and DB which store the value of distance. DM store distances in Meters and cm and DB in feet and inches. Write a program that can read values for the class objects and add 1 object OM with another object of DB. Use a friend function to carry out the addition operation the object that stores the results may be a DM object or a DB object, depending upon the units in which the results are required. The display should be in the format of feet and inches or meters and cms depending on the object on display.
	17th	Revision of Topics		
	18th	Revision of Topics	G-2	
			G-1 G-2	-----Revision of P-6---- -----Revision of P-6----
7th			G-1	-----Revision of P-5 and P-6----
	19th	Creation, accessing class members	G-2 G-1	-----Revision of P-5 and P-6---- -----Revision of P-5 and P-6----
	20th	Private Vs Public	G-2	-----Revision of P-5 and P-6----
8th	**21st**	Constructor and Destructor with and without Arguments	G-1	P-7A book shop maintains the inventory of books that are being sold at the shop the list includes details such as author, title and publisher and stock position. Whenever a customer wants the book, the sales person inputs the title and author and the system search the list and display whether it is available or not. If it is not, a appropriate message is displayed, if it is, then the system displays the book details and requests for the number of copies require. If the requested are available, the total cost of the required copies is displayed: otherwise the message" Required copies not in stock" is displayed. Design a system using a class called books with suitable member functions and constructors. Use new operator in constructor to allocate memory space require.
	22nd	Objects	G-2	
	23ra	Dynamic memory Allocation with new and Delete Operator		
			G-1 and G-2	-----Revision of P-7----
9th	**24th**	Method definition Inline Implementation	G-1	-----Revision of P-7----
	25th	Constant member functions	G-2	-----Revision of P-7----
	26th	Static Function, This Pointer	G-1 G-2	-----Revision of P-5,P-6 and P-7---- -----Revision of P-5,P-6 and P-7----

			G-	
10th	27th	Friend Function and its Characteristics	G-1 And	P-8 Define a class string that could work as a userdefined string type include constructors that will enable us to create an .un-initialized string String s1; :/ string with length 0 And also to initialize an object with string constant at the time of creation like String s2("well done"); . Include a function that adds two strings to make a third string.
	28th	Revision	G-2	
	29th	Introduction to Operator Overloading, Need of operator overloading	G-1 G-2	-----Revision of P-8---- -----Revision of P-8----
11th	31st	prefix and postfix, overloading binary operators instream/outstream operator overloading	G-1	-----Revision of P-8----
	32nd	Constructor Overloading, Type Conversion, Rules of Operator Overloading	G-2 G-1	-----Revision of P-8---- -----Revision of P-8----
	33rd	Comparison between Function Overloading and overriding	G-2	-----Revision of P-8----
12th	34th	Definition of inheritance, Types of inheritance;	G-1	P-9Create a class float that contains 2 float data member. Over load all the 4 arithmetic operators so that do operate on the objects of float.
	35tn	Single inheritance, hierarchical inheritance, multiple inheritance, hybrid inheritance	G-2 G-1	----------Do---------- P-10 Programming Exercise on Hybrid Inheritance
	36tn	,protected data, private data, public/data, inheriting constructors and destructors,	G-2	----------Do----------
13th	37th	constructor for virtual base classes, constructors and destructors of derived classes		
	38th	d virtual functions, size of a derived class	G-1 G-2 G-1 G-2	P-11 Define 2 classes POLAR and RECTANGLE to represent points in the POLAR and RECTANGLE systems. Use conversion routines to convert from one system to the other. ----------Do---------- -----Revision of P-11---- -----Revision of P-11---

	39th	order of invocation, Importance of virtual function, function call binding, virtual functions		
14th	**40th**	implementing late binding, need for virtual functions,	G-1	P-12Create a base class called shape. use this class to store two double type values that could be used to compute the area of fig. Derive the specific class called TRIANGLE and RECTANGLE from the data shape. Add to base class, a member function get - data ( ) to initialize base class data members and another member and another member function display – area( ) to compute and display the area of the fig.. Make display – area ( ) as a virtual function and redefine function in the derived classes to suit their requirements, Using these 3 classes design a program that will accept dimension of RECTANGLE or TRIANGLE interactivity and display the area. _____
	41st	abstract base classes and pure virtual functions, virtual destructors		
	42nd	Components of a file, different operation of the file, communication in files	G-2	----------D0----------
			G-1	-----Revision of P-12----
			G-2	-----Revision of P-12---
15th	**43rd**	creation of file streams, stream classes, header files, updating of file	G-1	Exercise on file handling
	44tn	opening and closing a file, file modes and file pointers and their manipulations,	G-2	Exercise on file handling
			G-1	-----Revision of P-13----
	45th	functions manipulation of file pointers, detecting end-of-file.	G-2	-----Revision of P-13----