Lecture Plan

Name of the College: Government College of Arts, Science and Commerce. Sanquelim - Goa

Name of Faculty: Ms.Ruchi Paresh Fulari	**Subject:** Computer Science
Paper code and Paper name : CSC 200 Programming using C++	**Program: SYBSC**
Academic year: 2024-2025	**Semester: III**

Course Objectives:

1. Describe the principles of Object Oriented Programming
2. Understand the basics of C++ programming language
3. Analyse the Object oriented concepts applied to C++
4. Implement the Object Oriented Concepts using C++

Course Outcome:

1. Remember the basic computing concepts & terminologies of Object Oriented Programming
2. Understand the basic computing concepts in C++ programming language.
3. Apply Object Oriented Programming concepts in designing solutions to simpler problems using algorithm , flowchart and pseudocode.
4. Code ,debug and analyse a well-structured programming logic using C++

Student Learning Outcome:

1. Remember the basic computing concepts & terminologies of Object Oriented Programming
2. Understand the basic computing concepts in C++ programming language.
3. Apply Object Oriented Programming concepts in designing solutions to simpler problems using algorithm , flowchart and pseudocode.
4. Code ,debug and analyse a well-structured programming logic using C++

Month	Lecture From	Lecture To	Topic, Subtopic to be covered	Exercise/ Assignment	ICT Tools	Reference books

July	22/07/2024	27/07/2024	1. Display a message "Well done" n number of times (while/do while/for) 2. Display factorial of a number entered (while/do while/for) 3. Display simple message using inline function 4. Swap two numbers with call by value, call by reference 5. Function with default arguments egrectarea () with default value of breadth. 6. Function with constant arguments eg.circlearea () with const value of pi	Exercise	Code Blocks	Object Oriented Programming with C++ , E Balagurusamy ,Tat McGraw-Hill Publishing Company Limited .
July-August	29/07/2024	03/08/2024	1. Overloading area () to calculate area of various shapes based on arguments. 2. Library functions eg.math.h 3. Revise simple program with a structure. 4. Simple i/o program with a class, accessing class instance in main (). 5. Defining functions inside and outside class.	Exercise	Code Blocks	Object Oriented Programming with C++ , E Balagurusamy ,Tat McGraw-Hill Publishing Company Limited .
August	05/08/2024	10/08/2024	1. Testing visibility modifiers public and private 2. Making a class function inline 3. Display count as static data member to count instances of a class. 4. Demonstrate static member functions to access static data members.	Exercise	Code Blocks	Object Oriented Programming with C++ , E Balagurusamy ,Tat McGraw-Hill Publishing Company Limited .
	12/08/2024	17/08/2024	1. Demonstrate i/o for array of class objects eg employees 2. Passing object argument to a function eg salary function passing employee 3. Demonstrate pointers to members eg update () marks of student 4. Demonstrate constructors: default, parameterised, copy	Exercise	Code Blocks	Object Oriented Programming with C++ , E Balagurusamy ,Tat McGraw-Hill Publishing Company Limited .

	19/08/2024	24/08/2024	1. Program to overload class constructors 2. Demonstrate constructors with default arguments 3. Initialise objects dynamically with constructors 4. Demonstrate destructor 5. Overload unary operator - to negate the sign of the object number.	Exercise	Code Blocks	Object Oriented Programming with C++ , E Balagurusamy ,Tat McGraw-Hill Publishing Company Limited .
	26/08/2024	31/08/2024	1. Overload unary operator ++ to increment an objects data. 2. Overload binary operator + to add two complex numbers 3. Overload binary operator - to add two find distance between two points p1 (x1, y1) and p2 (x2, y2) 4. Overload binary operator < to compare two objects 5. Overload the + operator to concatenate two string class objects	Exercise	Code Blocks	Object Oriented Programming with C++ , E Balagurusamy ,Tat McGraw-Hill Publishing Company Limited .
September	02/09/2024	06/09/2024	1. Program with single inheritance eg. Class parent, child 2. Program with private, public visibility modifiers in single inheritance 3. Program with protected visibility modifier in single inheritance 4. Program with multiple inheritance eg. Class parent1, parent2, child 5. Program with multilevel inheritance eg. Class grandparent, parent, child	Exercise	Code Blocks	Object Oriented Programming with C++ , E Balagurusamy ,Tat McGraw-Hill Publishing Company Limited .
	16/09/2024	21/09/2024	1. Program with hierarchical inheritance eg. Class parent, child 1, child2 or employee, skilled, unskilled 2. Program with hybrid inheritance eg. Class grandparent, parent1, parent2, child 3. Program with virtual base class 4. Simple program with abstract class eg class figure, circle,rectangle	Exercise	Code Blocks	Object Oriented Programming with C++ , E Balagurusamy ,Tat McGraw-Hill Publishing Company Limited .

			5. Single inheritance program with base and derived class constructors and destructors.			
	23/09/2024	28/09/2024	1. Simple program with pointer to object 2. Program using this pointer to access class members 3. Program with pointer to derived class 4. Using base class pointer to access derived class object 5. Program with virtual function	Exercise	Code Blocks	Object Oriented Programming with C++ , E Balagurusamy ,Tat McGraw-Hill Publishing Company Limited .
October	30/09/2024	05/10/2024	1. Program with pure virtual function 2. Program with function template with single parameter eg. swap () 3. Program with function template with multiple parameters eg. display (). 4. Program with class template with single parameter. 5. Program with class template with multiple parameters.	Exercise	Code Blocks	Object Oriented Programming with C++ , E Balagurusamy ,Tat McGraw-Hill Publishing Company Limited .
	07/10/2024	12/10/2024	1. Program with member function templates 2. Simple program with division by O exception 3. Program handling division by 0 exception with try catch block 4. Program with multiple catch statements 5. Program to demonstrate throw keyword	Exercise	Code Blocks	Object Oriented Programming with C++ , E Balagurusamy ,Tat McGraw-Hill Publishing Company Limited .
	14/10/2024	19/10/2024	Revision	Exercise	Code Blocks	Object Oriented Programming with C++ , E Balagurusamy ,Tat McGraw-Hill Publishing Company Limited .

Assessment Rubrics

Component	Max Marks
ISA 1	7.5
ISA 2	7.5

ISA 3	7.5
Practical	25
Project	-
Semester End Exam	60