SES's L. S. RAHEJA COLLEGE OF ARTS AND COMMERCE (AUTONOMOUS)

Syllabus of Object Oriented Programming with C++ LAB under NEP 2020 vertical - VSC with effect from 2024-25

Department of Information Technology and Data Science

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Date of approval by the BoS: 27/04/4024

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Ratified by the Governing Body on: 06/05/2024

Programme: B.Sc.(IT)				Semester : II	
Course : Object Oriented Programming with C++ LAB Academic Year: 2024-2025 Batch: 2024-2027				Code: UGBSCITIIVSC124	
Teaching Scheme				Evaluation Scheme	
Lectures	Practical	Tutorials	Credits	Internal Continuous Assessment (ICA) (weightage)	Term End Examinations (TEE) (weightage)
Nil	30	Nil	1	-	25

Learning Objectives :	1. The student should be able to explain the important characteristics of the C++ programming language. 2. The learner must be able to combine components of the C++ programming language to develop structured program. 3. The student must demonstrate the skills essential to compile, debug, and test C++ programs correctly.
Learning Outcomes :	1. Utilize C++ characteristics in software design and development. 2. Explain object-oriented techniques and explain how C++ supports them. 3. Employ C++ to demonstrate practical skill developing object-oriented solutions. 4. Examine a problem statements and design and develop object-oriented software using good coding practices and procedures.
Pedagogy:	Experiential learning, logic building, practical implementation

Detailed Syllabus: (per session plan)

Session Outline for Object Oriented Programming with C++ LAB

Each lecture session would be of one hour duration (30 sessions).

Practical	Content	Practical Wise Pedagogy Used	Practical Wise Duration
I	a. Write a C++ program to create a simple calculator. b. Write a C++ program to find the greatest of three numbers. c. Write a C++ program to generate all the prime numbers between 1 and n, where n is a value supplied by the user.	Experiential learning, logic building, practical implementation	6

II	a. Write a C++ program to demonstrate the use for, while and Do While loop.	Experiential learning, logic	6
	b. Write a C++ program using classes and object Student to print name of the student, roll no. Display the same.	building, practical implementation	
	c. Write a Program to find Maximum out of Two Numbers using friend function. (Note: Here one number is a member of one class and the other number is member of some other class.)		
III	a. Write a C++ program to design a class representing complex numbers and having the functionality of performing addition & multiplication of two complex numbers using operator overloading.	Experiential learning, logic building, practical implementation	6
	b. Write a C++ program to access members of a STUDENT class using pointer to object members		
	c. Write a C++ Program illustrating how the constructors are implemented and the order in which they are called when the classes are inherited. Use three classes named alpha, beta, gamma such that alpha, beta are base class and gamma is derived class inheriting alpha & beta		
IV	a. Write a C++ Program to design a student class representing student roll no. and a test class (derived class of student) representing the scores of the student in various subjects and sports class representing the score in sports. The sports and test class should be inherited by a result class having the functionality to add the scores and display the final result for a student	Experiential learning, logic building, practical implementation	6
	b. Write a C++ program to show conversion from string to int and vice-versa.		
	c. Write a C++ program to copy the contents of one file to another.		
V	a. Write a C++ program to perform read/write binary I/O operation on a file (i.e. write the object of a structure/class to file).	Experiential learning, logic building, practical implementation	6
	b. Write a C++ program to implement the exception handling with multiple catch statements.		
	c. Write a C++ program to implement the exception handling with throwing in Exception.		
	d. Write a C++ Program to create Simple calculator using Class template.		