SWARNANDHRA
COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous)
SEETHARAMAPURAM, NARSAPUR-534280 W.G.DT. AP

DEPARTMENT OF BACHELOR OF COMPUTER APPLICATIONS(Honours)

TEACHING PLAN

Course Code	Course Title	Year/Sem	Branch	Contact hr/week	Academic Year
24BC2T06	OOPS THROUGH C++	I/II	BCA(Honours)	6	2024-2025

Course Objectives:

This course is designed to provide a comprehensive study of the C programming language.

- It stresses the strengths of C, which provide students with the means of writing efficient, maintainable and portable code.
- The nature of C language is emphasized in the wide variety of examples and applications.
- To know about some popular programming languages and how to choose Programming language for solving a problem.

Course Outcomes (Cos): At the end of the course, student will able to

CO No.	Course Outcome	Knowledge Level (K)#
CO1	Understand the evolution and fundamentals of C++ and OOP	K1-K2
CO2	Create classes. objects. and manage constructors/destructors	K3
CO3	Implement operator overloading and inheritance	K3-K4
CO4	Apply pointers and virtual functions for polymorphism	K4-K5
CO5	Utilize templates and handle exceptions effectively	K4-K5

Week No	Outcome	Blooms Level		Topic / Activity	Text Books	Contact Hours	Delivery Method
UNIT-I							
	Understand the evolution and fundamentals of C++ and OOP		1.1	Introduction to C++	T4	1	Chalk & Board, PPT, Interactive Whiteboarding
			1.2	Difference between C and C++,	T4	1	
			1.3	Evolution of C++,	T4	1	

1,2		K1-K2	1.4	The Object-Oriented Technology	T4	1	
			1.5	Disadvantage of Conventional Programming	T4	2	
			1.6	Key Concepts of Object-Oriented Programming	T4	3	
			1.7	Advantage of OOP	T4	1	
			1.8	Object Oriented Language	T4	2	
UNIT-II							
3,4	Create classes, objects, and manage constructors/destructors	K3	2.1	Classes in C++, Declaring Objects	T4	1	Chalk & Board, PPT , Interactive Whiteboarding
			2.2	Access Specifiers and their Scope,	T4	1	
			2.3	Defining Member Function	T4	1	
			2.4	Overloading Member Function	T4		
			2.5	Nested class	T4	1	
			2.6	Constructors and Destructors	T4	1	
			2.7	Introduction, Characteristics of Constructor and Destructor	T4	1	
			2.8	Application with Constructor.	T4	1	
			2.9	Constructor with Arguments	T4	1	

			2.10	parameterized Constructor	T4	1	
			2.11	Destructors, Anonymous Objects	T4	1	
Mid I Exam							
UNIT-III							
5, 6	Implement operator overloading and inheritance	K3-K4	3.1	The Keyword Operator	T4	1	Chalk & Board, PPT , Interactive Whiteboarding
			3.2	Overloading Unary Operator	T4	1	
			3.3	Operator Return Type	T4	1	
			3.4	Overloading Assignment Operator (=)	T4	1	
			3.5	Rules for Overloading Operators	T4	1	
			3.6	Types of Inheritance	T4	3	
			3.7	Diamond Problem	T4	1	
			3.8	Virtual Base Classes	T4	1	
			3.9	Object as a Class Member	T4	1	
			3.10	Abstract Classes	T4	1	
			3.11	Advantages of Inheritance and Disadvantages of Inheritance.	T4	1	
UNIT-IV							
7,8	Apply pointers and virtual	K4-K5	4.1	Pointer	T4	1	Chalk & Board, PPT , Interactive Whiteboarding
			4.2	Features of Pointers	T4	1	
			4.3	Pointer Declaration	T4	1	
			4.4	Pointer to Class	T4	1	
			4.5	Pointer Object, The this Pointer	T4	1	
			4.6	Pointer to Derived Classes and Base Class	T4	1	

	functions for polymorphism		4.7	Binding Polymorphisms and Virtual Functions	T4	1	
			4.8	Introduction, Binding in C++	T4	1	
			4.9	Virtual Functions	T4	2	
			4.10	Rules for Virtual Function	T4	1	
			4.11	Virtual Destructor	T4	1	
UNIT-V							
9, 10	Utilize templates and handle exceptions effectively	K4-K5	5.1	Generic Programming with Templates	T4	1	Chalk & Board, PPT , Interactive Whiteboarding
			5.2	Need for Templates	T4	1	
			5.3	Definition of class Templates	T4	1	
			5.4	Normal Function Templates	T4	1	
			5.5	Over Loading of Template Function	T4	1	
			5.6	Bubble Sort Using Function Templates	T4	1	
			5.7	Difference Between Templates and Macros	T4	1	
			5.8	Linked Lists with Templates	T4	1	
			5.9	Exception Handling	T4	2	
			5.10	Principles of Exception Handling	T4	1	
			5.11	The Keywords try Exceptions	T4	1	
			5.12	throw and catch	T4	2	
			5.13	Multiple Catch Statement	T4	2	
Mid II Exam							
Total No. of Classes						**64**	

Text Books:

1. E. Balaguruswamy, Object Oriented Programming with C++, 6/e, McGraw Hill, 2013.
2. A First Book of C++, Gary Bronson, Cengage Learning.
3. The Complete Reference C++, Herbert Schildt, TMH.
4. Programming in C++, Ashok N Kamthane, Pearson 2nd Edition

Reference Books:

1. Object Oriented Programming with C++ by ReemaThareja, OXFORD University Press
2. Object Oriented Programming C++, Joyce Farrell, Cengage.
3. C++ Programming: from problem analysis to program design, DS Malik, Cengage Learning

Web Resources:

1. https://onlinecourses.nptel.ac.in/noc22_cs103/preview
2. https://ocw.mit.edu/courses/6-088-introduction-to-c-memory-management-and-c- object-oriented-programming-january-iap-2010/pages/lecture-notes/
3. https://see.stanford.edu/Course/CS106B
4. https://www.udemy.com/course/object-oriented-c-plus-plus-programming/
5. https://wiingy.com/learn/cpp/cpp-concepts/

Faculty

Head of the Department

Principal