



Lesson Plan

Program: BCA **Semester:** III **Course Code:** BCA-301 **Course Name:** OOP using C++

Course Objectives

- CO 1. To differentiate between Procedural Oriented Approach & Object Oriented Programming approach and to understand basic terms and OOP ideas
- CO 2. To identify with the concepts of OOP and dynamic memory allocation.
- CO 3. To be aware of the concepts of Polymorphism and Inheritance.
- CO 4. To understand the idea of Generic Functions and Template.
- CO 5. To comprehend the importance of Files and Exception Handling

Session Duration: 60 minutes

Participants: BCA Third Semester Students

Entry level knowledge and skills of students

- i. Basic knowledge of Computer Fundamentals and 'C' Programming Language
- ii.

Equipment required in Classroom/ Laboratory/ Workshop

- i. Projector
- ii. White Board & Marker

Assessment Schemes

S. No.	Criteria	Marks (100)
1	CCSU End Term Examination	75
2	Internal Evaluation Scheme	25
2(a)	Teacher Assessment (Continuous Evaluation) (Assignment & Attendance)	25
2(a)(i)	Assignment -1	10
2(a)(ii)	Assignment -2	10
2(a)(iii)	Attendance (compulsory)	5

Course Outcomes

- (CO 1.) Able to differentiate between Procedural Oriented Approach & Object Oriented Programming approach and to understand basic terms and OOP ideas
Understanding (K2), Applying (K3)
- (CO 2.) Able to identify with the concepts of OOP and Dynamic Memory Allocation.
Understanding (K2), Applying (K3)
- (CO 3.) Able to aware of the concepts of Polymorphism and Inheritance.
Understanding (K2), Applying (K3)
- (CO 4.) Able to understand the idea of Generic Functions and Template.
Understanding (K2), Applying (K3)
- (CO 5.) Able to comprehend the importance of Files and Exception Handling
Understanding (K2), Applying (K3)



L. No.	Topics	Sub Topics	Date of implementation	Pedagogy	CO-Covered	Faculty Sign	HoD's Remark with Date
Unit - 1							
1.	Discussion about the Subject Syllabus and Learning outcomes	Course Objective & Course Outcome			CO-1 TO CO-6		
2.	Introduction & Basic terms and ideas	Introduction to Programming Approach		<ul style="list-style-type: none"> • Lecture 	CO-1		
3.		Procedure Oriented Approach		<ul style="list-style-type: none"> • Lecture • Brainstorming 	CO-1		
4.		Functional & Data decomposition (Modules)		<ul style="list-style-type: none"> • Lecture • Buzz Grouping 	CO-1		
5.		Object Oriented Approach its features		<ul style="list-style-type: none"> • Lecture • Brainstorming 	CO-1		
6.		Basic concepts of Abstraction & Encapsulation		<ul style="list-style-type: none"> • Lecture 	CO-1		
7.		Basic concepts of Inheritance and Polymorphism		<ul style="list-style-type: none"> • Lecture • Brainstorming 	CO-1		
8.		Review of 'C' Language and difference between 'C' & 'C++'		<ul style="list-style-type: none"> • Discussion • Brainstorming • Buzz Grouping 	CO-1		
9.		Operator in 'C++'; new, delete, cin, cout		<ul style="list-style-type: none"> • Lecture • Demonstration 			
10.		Revision of unit-I		<ul style="list-style-type: none"> • Brainstorming • Buzz Grouping 	CO-1		
11.		Discussed University questions		<ul style="list-style-type: none"> • Brainstorming • Buzz Grouping 	CO-1		
Unit - 2							
12.	Classes and Objects	Discussion about the class and its object in OOP language cont		<ul style="list-style-type: none"> • Lecture • Brainstorming • Demonstration 	CO-2		
13.		Class attributes and its members		<ul style="list-style-type: none"> • Lecture • Brainstorming 	CO-2		



				• Demonstration			
14.		State identity and behaviour of an object and its instantiation		• Lecture • Demonstration Brainstorming	CO-2		
15.		Encapsulation, information hiding, abstract data types		• Lecture • Brainstorming • Buzz Grouping	CO-2		
16.		Constructors and different types of Constructors		• Lecture • Demonstration	CO-2		
17.		destructors		• Lecture • Brainstorming	CO-2		
18.		Default parameter		• Lecture • Demonstration	CO-2		
19.		C++ garbage collection and dynamic memory allocation		• Brainstorming • Buzz Grouping	CO-2		
20.		cont		• Lecture • Demonstration • Brainstorming	CO-2		
21.		Metaclass / abstract classes		• Lecture	CO-2		
22.		Revision of Unit-II		• Buzz Grouping • Brainstorming	CO-2		
23.		Discussed University questions		• Brainstorming • Buzz Grouping	CO-2		
Unit-III							
24.	Inheritance and Polymorphism	Introduction and uses of Inheritance		• Lecture • Demonstration • Brainstorming	CO-3		
25.		Class hierarchy and types of Inheritance		• Lecture • Demonstration • Brainstorming	CO-3		
26.		cont		• Lecture • Demonstration • Brainstorming	CO-3		
27.		contd		• Lecture • Demonstration • Brainstorming	CO-3		
28.		Derivation - public, private & pro		• Lecture • Demonstration • Brainstorming	CO-3		
29.		contd		• Lecture • Demonstration • Brainstorming	CO-3		



30.		Aggregation and composition vs classification hierarchies		<ul style="list-style-type: none">•Lecture•Brainstorming	CO-3		
31.		Revision of Inheritance		<ul style="list-style-type: none">•Buzz Grouping•Brainstorming	CO-3		
32.		Introduction to Polymorphism and its uses		<ul style="list-style-type: none">•Lecture•Demonstration•Brainstorming	CO-3		
33.		Categorization of polymorphism techniques		<ul style="list-style-type: none">•Lecture•Demonstration•Brainstorming	CO-3		
34.		Method polymorphism		<ul style="list-style-type: none">•Lecture•Demonstration•Brainstorming	CO-3		
35.		Polymorphism by parameter		<ul style="list-style-type: none">•Lecture•Demonstration	CO-3		
36.		cont		<ul style="list-style-type: none">•Lecture•Demonstration	CO-3		
37.		Operator overloading		<ul style="list-style-type: none">•Lecture•Brainstorming	CO-3		
38.		cont		<ul style="list-style-type: none">•Lecture•Brainstorming	CO-3		
39.		Parametric Polymorphism		<ul style="list-style-type: none">•Lecture•Demonstration	CO-3		
40.		cont		<ul style="list-style-type: none">•Lecture•Demonstration	CO-3		
41.		Revision of Unit-III		<ul style="list-style-type: none">•Buzz Grouping•Brainstorming	CO-3		
42.		Discussed University questions		<ul style="list-style-type: none">•Brainstorming•Buzz Grouping	CO-3		
Unit-IV							
43.	Generic function	Introduction to Template function		<ul style="list-style-type: none">•Lecture•Demonstration	CO-4		
44.		function name overloading		<ul style="list-style-type: none">•Lecture•Demonstration	CO-4		
45.		Overriding inheritance methods and Run time and compile time polymorphism		<ul style="list-style-type: none">•Lecture•Demonstration•Brainstorming	CO-4		
46.		Revision of Unit-IV		<ul style="list-style-type: none">•Buzz Grouping•Brainstorming	CO-4		
47.		Discussed		<ul style="list-style-type: none">•Brainstorming	CO-4		



		University questions		• Buzz Grouping			
Unit-V							
48.	Files and exception Handling	Introduction to File handling & its uses		• Lecture • Demonstration • Brainstorming	CO-5		
49.		Reading from a file and Writing in to a file without class object		• Lecture • Demonstration • Brainstorming	CO-5		
50.		Reading from a file and Writing in to a file using class object		• Lecture • Demonstration • Brainstorming	CO-5		
51.		Introduction to Namespace		• Lecture • Brainstorming	CO-5		
52.		Introduction to Exception handling and its uses		• Lecture • Demonstration	CO-5		
53.		cont		• Lecture • Demonstration • Brainstorming	CO-5		
54.		Generic Classes		• Lecture • Demonstration • Brainstorming	CO-5		
55.		Revision of Unit-V		• Buzz Grouping • Brainstorming	CO-5		
56.		Discussed University questions		• Brainstorming • Buzz Grouping	CO-5		

Text Books:

1. R.Lafore, "Object Oriented Programming using C++", Galgotia Publications, 2004
2. E.Balagurusamy, "Object Oriented Programming with C++", TMH, 2008.

Reference Books:

1. A.R.Venugopal, Rajkumar, T. Ravishanker "Mastering C++", TMH, 1997.
2. S.B.Lippman & J.Lajoie, "C++ Primer", 3rd Edition, Addison Wesley, 2000.
3. D.Parasons, "Object Oriented Programming using C++", BPB Publication.