SANATAN DHARMA COLLEGE, AMBALA CANTT

College with Potential for Excellence,
UGC,New Delhi NAAC Accredited Grade
"A+" with CGPA 3.51 in 3rd cycle
ISO 9001:2015 & ISO 14001:2015 Certified

Department of Computer Science

Lesson Plan (Session 2021-2022)

Class: B.VOC(SD) Sem: 3 Course Code: BVSD-34
Nomenclature: OBJECT ORIENTED PROGRAMMING WITH C++

Duration: 16 Weeks **Dates: 11Oct, 2021- 26 Jan, 2022**

SYLLABUS

BVSD- 34
OBJECT ORIENTED PROGRAMMING WITH C++

External Marks: 80 Maximum Marks: 100
Internal Marks: 20 Minimum pass Marks: 35
Time: 3 Hours

Note: Examiner will be required to set NINE questions in all. Question Number 1 will consist of objective type/short-answer type questions covering the entire syllabus. In addition to the compulsory question there will be four units i.e. Unit-I to Unit-IV. Examiner will set two questions from each Unit of the syllabus.
Student will be required to attempt FIVE questions in all. Question Number 1 will be compulsory. In addition to compulsory question, student will have to attempt four more questions selecting one question from each Unit. All questions will carry equal marks.

Unit I

Introduction to Programming C++: Object-oriented Features of C++, Class and Objects, Data Hiding & Encapsulation, Structures, Data Members and Member Functions, Inline Functions, Static Data Members and Member Functions, Friend Functions, Preprocessor Directives, Namespace, Comparing C with C++.

Unit II

Constructors & Destructors: Roles and Types of Constructors, Roles of Destructors, Dynamic Memory Allocation: Pointers and their Manipulation, new and delete Operators 'this' Pointer. Console I/O: Formatted and Unformatted I/O, Manipulators.

Unit III

Compile-Time Polymorphism: Unary and Binary Operators Overloading Through Member Functions and Friend Functions, Function Overloading.
Inheritance: Types of Derivations, Forms of Inheritance, Roles of Constructors and Destructors in Inheritance.

Unit IV

Genericity in C++: Template Function, Template Class, Inheritance and Templates. Exception Handling: try, throw and catch constructs, rethrowing an Exception, catch all Handlers.

TEXT BOOKS:

- Balagurusamy E., Object Oriented Programming with C++, Tata McGraw Hill, 2001
- Lafore Robert, Object Oriented Programming in Turbo C++, The Waite Group Press, 1994

REFERENCE BOOKS:

- Schildt Herbert, The Complete Reference in C++, TMH, 2002
- Deitel H.M. and Deitel P.J., C++ How to Program, Prentice Hall, 1998

Course Code	BVSD-34
Course Title	OBJECT ORIENTED PROGRAMMING WITH C++
CO No.	Course Outcomes
1.	Outline the essential features and elements of the C++ programming language.
2.	Explain programming fundamentals, including statement and control flow and recursion.
3.	Apply the concepts of class, method, constructor, instance, data abstraction, function abstraction, inheritance, overriding, overloading, and polymorphism.
4.	Program using objects and data abstraction, class, and methods in function abstraction.
5.	Analyze, write, debug, and test basic C++ codes using the approaches introduced in the course.
6.	Analyze problems and implement simple C++ applications using an object-oriented software engineering approach.

S.No	Instructional Technique	Assessment Methods (AM)
1	Chalk & Talk	Assignments
2	ICT tools	Quiz
3	Group discussions	Group Discussions
4	Industrial visit	Oral Tests
5	Case studies	Sessional
6	Small Projects	Presentations
7	Workshop	Seminar
8	Spoken Tutorials	University Exams
9	Flipped Class	
10.	E-Resources	

Detailed Lesson

Week	Date	Topic to be Covered	Instructional Technique	Assessment Method
1	11.10.21	Introduction to Programming C++	**2-(PPT/Projector)**	**----**
	12.10.21	Discussion over Object-oriented Features of C++	**2(PPT/Projector)**	**1**
	13.10.21	Class and Objects concepts with examples	**1**	**1**
2	18.10.21	Concept of Data Hiding & Encapsulation	**2-(PPT/Projector)**	**----**
	19.10.21	Discussion over Concept of Structures	**2(PPT/Projector)**	**1**
	20.10.21	Familiarization with Data Members and Member Functions	**1**	**1**
3	25.10.21	Inline Functions discussion	**1**	**1,2,3,4**
	26.10.21	Static Data Members and Member Functions	**2-(PPT/Projector)**	**1,2,3,4**
	27.10.21	Discussion over Concept of Friend Functions	**2-(PPT/Projector)**	**1,2,3,4**
4	1.11.21	Preprocessor Directives	**2-(PPT/Projector)**	**1,2,3,4**
	2.11.21		HOLIDAY	
	3.11.21	Namespace concept in C++	2-(PPT/Projector)	1,2,3,4
5	8.11.21	Comparing C with C++.		
	9.11.21	Revision of UNIT -1	2-(PPT/Projector)	1,2,3,4
	10.11.21	Introduction to Constructors & Destructors	2-(PPT/Projector)	1,2,3,4
6	15.11.21	Roles and Types of Constructors	9	1,2,3,4
	16.11.21	Roles of Destructors	2-(PPT/Projector)	1,2,3,4
	17.11.21	Introduction to Dynamic Memory Allocation	2-(PPT/Projector)	1,2,3,4
7	22.11.21		HOLIDAY	
	23.11.21	Pointers and their Manipulation	---	6
	24.11.21	new and delete Operators	9	1,2,3,4,6
8	29.11.21	Concept of 'this' Pointer	8,10,2	1,2,3,4,
	30.11.21	Introduction to Console I/O	8,10,2	1,2,3,4,
	1.12.21	Diwali Vacations		
	6.12.21	Discussion over formatted and Unformatted I/O	6	1,2,3,4
	7.12.21	Concept of Manipulators	6	1,2,3,4
	8.12.21	Revision of UNIT -2	2-(PPT/Projector)	1,2,3,4
10	13.12.21	Introduction to Compile-Time Polymorphism	2-(PPT/Projector)	1,2,3,4
	14.12.21	Unary Operators Overloading Through Member Functions		

	15.12.21		HOLIDAY	
11	20.12.21	Discussion over Binary Operators Overloading Through Member Functions	2-(PPT/Projector)	1,2,3,4
	21.12.21	Discussion over Unary Operators Overloading Through Friend Functions		
	22.12.21	Discussion over Binary Operators Overloading Through Friend Functions	2-(PPT/Projector)	1,2,3,4
12	27.12.21	Function Overloading Concept	6	1,2,3,4
	28.12.21	Introduction to Inheritance: Types of Derivations	6	1,2,3,4
	29.12.21	**Sessional**	--	5
13	3.1.22		2-(PPT/Projector)	1,2,3,4
	4.1.22	Discussion over Roles of Constructors and Destructors in	2-(PPT/Projector)	1,2,3,4
	5.1.22	Revision of Unit 3	6	1,2,3,4
14	10.1.22	Introduction to Genericity in C++	2-(PPT/Projector)	1,2,3,4
	11.1.22	Discussion over Template Function	6	1,2,3,4
	12.1.22	Discussion over Template Class, Inheritance and Templates	2-(PPT/Projector)	1,2,3,4
15	17.1.22	Introduction to Exception Handling	9,10	1,2,3,4
	18.1.22	Discussion over Try, throw and catch constructs	9,10	1,2,3,4
	19.1.22	Rethrowing an Exception, catch all Handlers.	2-(PPT/Projector)	1,2,3,4
16	24.1.22	Doubt Session	2-(PPT/Projector)	1,2,3,4
	25.1.22	Discussion over Previous Year papers	6	1,2,3,4
	26.1.22	Discussion over Previous Year papers	6	1,2,3,4