



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 2022-2023)

Class: BCA

Sem: VI

Course Code: 242

Nomenclature: Advanced Programming Using C++

Dates: 2 Feb, 2023- 14 May, 2023

SYLLABUS

BCA-Advanced Programming Using C++

Maximum Marks: 100

External: 80

Time: 3 hours

Internal: 20

Note: Examiner will be required to set Nine Questions in all. First Question will be compulsory, consisting of objective type/short-answer type questions covering the entire syllabus. In addition to that eight more questions will be set, two questions from each Unit. A candidate will be required to answer five questions in all, selecting one question from each unit in addition to compulsory Question No. 1. All questions will carry equal marks.

UNIT – I

Dynamic Polymorphism: Function Overriding, Virtual Function and its Need, Pure Virtual Function, Abstract Class, Virtual Derivation, Virtual Destructor.

UNIT – II

Type Conversion: Basic Type Conversion, Conversion between objects and basic types, Conversion between objects of different classes, Inheritance: Rules of Derivations – Private, Protected and Public Derivations.

UNIT – III

Different Forms of Inheritance – Single, Multiple, Multilevel, Hierarchical and Multipath Inheritance Roles of Constructors and Destructors in Inheritance, Genericity in C++: Templates in C++, Function templates.

UNIT – IV

Class templates in C++, Exception Handling in C++: try, throw and catch, Files I/O in C++: Class Hierarchy for Files I/O, Text versus Binary Files, Opening and Closing Files, File Pointers, Operation on files.

TEXT BOOKS:

- Herbert Schildt, C++, The Complete Reference, Tata McGraw-Hill
- Robert Lafore, Object Oriented Programming in C++

REFERENCE BOOKS:

- Bjarne Stroustrup, The C++ Programming Language, Pearson.
- Balaguruswami, E., Object Oriented Programming In C++, Tata McGraw-Hill

Course Outcomes

After the completion of this course, prospective Computer professionals will have the ability to

CO-1	Apply Dynamic Polymorphism with Function Overriding, Virtual Function & Abstract Class,
CO-2	Apply Data type Conversions
CO-3	Develop applications using inheritance
CO-4	Apply Function templates
CO-5	Develop generic classes using class templates
CO-6	Perform Exception Handling
CO-7	Implement operations on Text and Binary files

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	

Date	Topics to be covered	Instructional Technique	Assessment Method
02.02.2023	Dynamic Polymorphism	1	1,2,3,4
03.02.2023	Function Overriding	1	1,2,3,4
04.02.2023	Virtual Function and its Need	1	1
05.02.2023	SUNDAY		
09.02.2023	Pure Virtual Function	2-(PPT/Projector)	1,2,3,4
10.02.2023	Abstract Class	2-(PPT/Projector)	1,2,3,4
11.02.2023	Virtual Derivation	2-(PPT/Projector)	1,2,3,4
12.02.2023	SUNDAY		
16.02.2023	Virtual Destructor	2-(PPT/Projector)	1,2,3,4
17.02.2023	Revision		
18.02.2023	Type Conversion	1	1,2,3,4
19.02.2023	SUNDAY		
23.02.2023	Basic Type Conversion	2-(PPT/Projector)	1,2,3,4
24.02.2023	Conversion between objects and basic types, Conversion between objects of different classes	2-(PPT/Projector)	1,2,3,4
25.02.2023	Revision		
26.02.2023	SUNDAY		
02.03.2023	Assignment		
03.03.2023	Inheritance	8,10,2	1,2,3,4,
04.03.2023	Rules of Derivations – Private, Protected and Public Derivations.	8,10,2	1,2,3,4,
05.03.2023	SUNDAY		
16.03.2023	Different Forms of Inheritance – Single, Multiple, Multilevel, Hierarchical and Multipath Inheritance	6	1,2,3,4
17.03.2023	Roles of Constructors and Destructors in Inheritance	1	6

18.03.2023	Revision		
19.03.2023	SUNDAY		
23.03.2023	HOLIDAY		
24.03.2023	Genericity in C++: Templates in C++	2-(PPT/Projector)	1,2,3,4
25.03.2023	Function templates	2-(PPT/Projector)	1,2,3,4
26.03.2023	SUNDAY		
30.03.2023	HOLIDAY		
31.03.2023	Sessional		
01.04.2023	Class templates in C++	6	1,2,3,4
02.04.2023	SUNDAY		
06.04.2023	Exception Handling in C++	2-(PPT/Projector)	1,2,3,4
07.04.2023	try, throw and catch	2-(PPT/Projector)	1,2,3,4
08.04.2023	try, throw and catch	2-(PPT/Projector)	1,2,3,4
09.04.2023	SUNDAY		
13.04.2023	Revision		
14.04.2023	HOLIDAY		
15.04.2023	Files I/O in C++	9,10	1,2,3,4
16.04.2023	SUNDAY		
20.04.2023	Revision		
21.04.2023	Class Hierarchy for Files I/O	2-(PPT/Projector)	1,2,3,4
22.04.2023	Holiday		
23.04.2023	SUNDAY		
27.04.2023	Text versus Binary Files	2-(PPT/Projector)	1,2,3,4
28.04.2023	Revision		
29.04.2023	Opening and Closing Files	2-(PPT/Projector)	1,2,3,4

30.04.2023	SUNDAY		
04.05.2023	File Pointers,	2-(PPT/Projector)	1,2,3,4
05.05.2023	Operation on files	2-(PPT/Projector)	1,2,3,4
06.05.2023	Revision		
07.05.2023	SUNDAY		
11.05.2023	Revision		
12.05.2023	Revision of Previous Years Question Papers		
13.05.2023	Revision of Previous Years Question Papers		
14.05.2023	SUNDAY		

	Teacher Incharge	Head of the Department
Name	Shikha Verma	Dr. Girdhar Gopal
Sign with Date		