



Indraprastha College for Women

University of Delhi

Work Plan for ODD SEMESTER – 2026

Course Name:	BA (H) / B.Sc(H) Generic Elective COURSE – 1
Paper Title:	Programming using C++
Unique Paper Code:	GE1b
Semester:	I
Faculty(s):	Dr. Sarabjeet Kaur
Year:	2026

Work Plan			
Unit No.	Learning Objective	Lecture No.	Topics to be Covered
I	Introduction to C++	1	Need and characteristics of Object-Oriented Programming,
		2	Overview of Procedural and Object-Oriented Programming, Using main() function
		3	Header Files, Compiling and Executing Simple Programs in C++.
2	Programming Fundamentals	4	Data types, Variables
		5	Data types, Variables
		6	Operators, Expressions
		7	Operators, Expressions
		8	Keywords,
		9	Arrays, Keywords,
		10	Arrays
		11	Decision-making constructs,
		12	Decision-making constructs,
		13	Iteration, Type Casting,
		14	Iteration, Type Casting,
		15	Input-output statements, Functions
		16	Command Line Arguments/Parameters
II	Object Oriented Programming	17, 18	Concepts of Abstraction, Encapsulation

		19, 20	Creating Classes and objects
		21, 22	Modifiers and Access Control
		23, 24	Constructors, Destructors,
		25, 26	Implementation of Inheritance
		27, 28, 29	Implementation of Polymorphism,
		30, 31	Template functions and classes

Unit	Contents/Syllabus
I	Unit-1 (3 hours) Introduction to C++: Overview of Procedural and Object-Oriented Programming, Using main() function, Header Files, Compiling and Executing Simple Programs in C++.
II	Unit-2 (12 hours) Programming Fundamentals: Data types, Variables, Operators, Expressions, Arrays, Keywords, Decision-making constructs, Iteration, Type Casting, Input-output statements, Functions, Command Line Arguments/Parameters
III	Unit-3 (15 hours) Object Oriented Programming: Concepts of Abstraction, Encapsulation. Creating Classes and objects, Modifiers and Access Control, Constructors, Destructors, Implementation of Inheritance and Polymorphism, Template functions and classes
IV	Unit-4 (9 hours) Pointers and References: Static and dynamic memory allocation, Pointer and Reference Variables, Implementing Runtime polymorphism using pointers and references
V	Unit-5 (6 hours) Exception and File Handling: Using try, catch, throw, throws and finally; Nested try, creating user defined exceptions, File I/O Basics, File Operations
S. No.	Name of Authors/Books/Publishers
1.	Stephen Prata, C++ Primer Plus, 6th Edition, Pearson India, 2015.
2.	E Balaguruswamy, Object Oriented Programming with C++, 8th edition, McGraw- Hill Education, 2020. 3. D.S. Malik, C++ Programming: From Problem Analysis to Program Design, 6th edition, Cengage Learning, 2013.
3.	Schildt, H. C++: The Complete Reference, 4th edition, McGraw Hill, 2003

4.	Forouzan, A. B., Gilberg, R. F. Computer Science: A Structured Approach using C++, 2nd edition, Cengage Learning, 2010
----	--

Paper Components			
Credits	Lecture (L)	Tutorial (T)	Practical (P)
4	3	0	1
Assessment Scheme			
S.No.	Component	Marking Scheme	Total Marks
1	Internal Assessment - Assignment/Quiz/Project/ Presentation - Class Test - Attendance		30
		12	
		12	
		6	
2.	Continuous Assessment (Tutorial) - Activity 1 - Activity 2 - Attendance		
3.	Practical - Continuous Assessment - End Term Written/Practical Exam - Viva		40
		10	
		20	
		10	
4.	End Semester Examination		90