Lesson plan
Subject Name: Digital Electronics and Computer Organization

Branch: Computer Science Engineering

3rd Semester(winter 2025)

Name of Faculty: Samir Kumar Sethi

Semester: 14/07/2025 To 15/11/2025

Total weeks: 15 weeks

week	Three Classes per week	Theory Topic
1st	1st	Introduction to object-oriented programming, user defined types,
	2nd	Structures, unions,
	3rd	polymorphism
2nd	1st	encapsulation.
	2nd	Getting started with C++ syntax, data types, variables, and strings
	3rd	functions
3rd	1st	default values in functions
	2nd	recursion
	3rd	namespaces, operators
4th	1st	flow control, arrays, and pointers
	2nd	arrays, and pointers
	3rd	programs
5th	1st	**Classes and Objects**
	2nd	private, public
	3rd	constructors, destructors
6th	1st	member data, member functions,
	2nd	inline function, friend functions,
	3rd	static members, and references
7th	1st	Inheritance: Class hierarchy, derived classes
	2nd	single inheritance, multiple, multilevel
	3rd	hybrid inheritance, role of virtual base class
8th	1st	constructor and destructor execution
	2nd	base initialization using derived class constructors
	3rd	Polymorphism: Binding, Static binding, Dynamic binding
9th	1st	Static polymorphism: Function Overloading
	2nd	program
	3rd	Ambiguity in function overloading
10th	1st	Dynamic polymorphism: Base class pointer, object slicing
	2nd	late binding, method overriding with virtual functions
	3rd	pure virtual functions, abstract classes
11th	1st	program
	2nd	Operator Overloading
	3rd	This pointer, applications of this pointer
12th	1st	Operator function,

	2nd	member and non-member operator function
	3rd	program
13th	1st	operator overloading
	2nd	program
	3rd	I/O operators
14th	1st	program
	2nd	Exception handling: Try, throw, and catch
	3rd	exceptions and derived classes
15th	1st	function exception declaration,
	2nd	unexpected exceptions
	3rd	Question answer discussion

Teaching Methodology

Lectures: Use slides, animations, and circuit simulations to explain concepts.

Hands-On Exercises: Use simulation tools (LT Spice, Multisim) for circuit design.

Assignments: Weekly problem sets to reinforce theoretical concepts.

Group Discussions: Encourage discussions on real-world applications.

Quizzes: Conduct periodic quizzes to assess understanding.

Case Studies: Analyze practical applications of digital electronics in computer systems.

Assessment Strategy

Progressive Assessment (30 marks):

Weekly Assignments: 5 Marks

IA-1: 10 Marks

IA-2:10 Marks

Class participation and discussions: 5 Marks