# Object Oriented Programming-Sem 4

UNIT – I: Introduction to OOSE

*What is Object Oriented Software Engineering? How is it different from procedural software engineering?

*Explain the characteristics of Object-Oriented systems.

*What is software life cycle? Describe the phases of the object-oriented software life cycle.

*Write a short note on the importance of OOSE in real-time systems.

*Compare traditional SDLC vs object-oriented SDLC.

UNIT – II: Object-Oriented Concepts

*Explain the concepts of Class, Object, Encapsulation, Abstraction, Inheritance, and Polymorphism.

*What is object model? Describe the elements of the object model.

*Define and explain association, aggregation, and composition with examples.

*Write short notes on:

Dynamic binding

Message passing

Generalization and specialization

*What is multiple inheritance? Discuss its advantages and problems.

UNIT – III: Object-Oriented Analysis

*What is Object-Oriented Analysis (OOA)? Explain its importance.

*Describe the steps involved in OOA using use-case modeling.

*Explain the components of a Use Case Diagram with an example.

*What are object diagrams and class diagrams? How are they used in OOA?

*Explain how requirement gathering is done in OOSE.

UNIT – IV: Object-Oriented Design

*What is Object-Oriented Design (OOD)? Explain its phases.

*What are design patterns? Describe any two design patterns.

*Explain the role of class design and object design in OOD.

*Draw and explain a sequence diagram and collaboration diagram.

*What are architectural design principles in OOSE?

UNIT – V: Implementation and Testing

*Explain how object-oriented systems are implemented using programming languages like Java/C++.

*What is code reusability? How is it achieved in OOP?

*Describe unit testing and integration testing in OOSE.

*What are stubs and drivers in testing?

*Explain the steps involved in maintenance of object-oriented systems.