

MC301 OBJECT ORIENTED ANALYSIS AND DESIGN

Objectives of the Course:

Students through the course will:

- gain enough competence in object-oriented analysis and design (OOAD) to tackle a complete OO project
- acquire UML, a common language for talking about requirements, designs, and component interfaces
- understand the main principles of good OO design
- understand what major tasks are appropriate to developing OO models and software
- understand the issues and options in reuse and component based development

UNIT - I

(08 Hrs)

Introduction to UML: Importance of modeling, principles of modeling, object oriented modeling, conceptual model of the UML, Architecture, Software Development Life Cycle.

UNIT - II

(18 Hrs)

Basic Structural Modeling: Classes, Relationships, common Mechanisms, and diagrams.

Advanced Structural Modeling: Advanced classes, advanced relationships, Interfaces, Types and Roles, Packages.

UNIT - III

(08 Hrs)

Class & Object Diagrams: Terms, concepts, modeling techniques for Class & Object Diagrams.

UNIT - IV

(18 Hrs)

Basic Behavioral Modeling: Interactions, Interaction diagrams, Use cases, Use case Diagrams, Activity diagrams

Advanced Behavioral Modeling: Events and signals, state machines, processes and Threads, time and space, state chart diagrams.

UNIT - V

(04 Hrs)

Architectural Modeling: Component, Deployment, Component diagrams and Deployment diagrams.

Text Books:

1. Grady Booch, James Rumbaugh, Ivar Jacobson : The Unified Modeling Language User Guide, Pearson Education.
2. Hans-Erik Eriksson, Magnus Penker, Brian Lyons, David Fado: UML 2 Toolkit, WILEY-Dreamtech India Pvt. Ltd.

Reference Books:

1. Meilir Page-Jones: Fundamentals of Object Oriented Design in UML, Pearson Education.
2. Pascal Roques: Modeling Software Systems Using UML2, WILEY- Dreamtech India Pvt. Ltd.
3. Atul Kahate: Object Oriented Analysis & Design, The McGraw-Hill Companies.