

OBJECT ORIENTED ANALYSIS AND DESIGN

(Common to CSE& IT)

Course Code :13CT1118

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Course Educational Objectives:

The main objective of the course is to expose the students to model the software architecture using different UML diagrams.

- ❖ Giving basics Designing a product or a system.
- ❖ Giving idea about things, relationships and diagrams.
- ❖ Giving idea about Structural things.
- ❖ Giving idea about Behavioral things & Architectural Modeling.
- ❖ Giving practice with the help of a Case Study.

Course Outcomes:

At the end of the course the student will be able to

- ❖ Understand the Object Oriented Systems Development.
- ❖ Understand the Basic & Advanced Structural Modeling.
- ❖ Understand the Basic & Advanced Behavioral.
- ❖ Understand the Architectural Modeling.
- ❖ Understand the concepts required for implementing ATM and railway reservation system.

UNIT-I

(15 Lectures)

AN OVERVIEW OF OBJECT ORIENTED SYSTEMS DEVELOPMENT:

Introduction, Two Orthogonal Views of the Software, Object Oriented Systems Development Methodology, Why an Object Orientation?

WHY WE MODEL:

The Importance of Modeling, Principles of Modeling, Object Oriented Modeling

INTRODUCING THE UML:

An overview of the UML, A Conceptual Model of the UML, Architecture, Software Development Life Cycle

UNIT-II**(12 Lectures)****BASIC STRUCTURAL MODELING:**

Classes, Relationships, Common Mechanisms, and diagrams, class diagrams

ADVANCED STRUCTURAL MODELING:

Advanced classes, advanced relationships, Interfaces, Types and Roles, Packages, Object Diagrams

UNIT-III**(10 Lectures)****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-IV**(11 Lectures)****ARCHITECTURAL MODELING I:**

Component, Deployment, Component diagrams and Deployment diagrams

ARCHITECTURAL MODELING II:

Patterns and Frameworks, Collaborations, Systems and Models.

UNIT-V**(10 Lectures)****CASE STUDY:**

Bank ATM Application, Railway Reservation System.

TEXT BOOKS:

1. Grady Booch, James Rumbaugh, Ivar Jacobson, “*The Unified Modeling Language User Guide*”, 2nd Edition, Pearson Education, 2007.
2. Ali Bahrami, “*Object Oriented Systems Development using the unified modeling language*”, 1st Edition, TMH, 2008.

REFERENCES:

1. Meilir Page-Jones, “*Fundamentals of Object Oriented Design in UML*”, 1stEdition, Pearson Education, 2006.
2. Pascal Roques, “*Modeling Software Systems Using UML2*”, 1stEdition, WILEY Dreamtech, 2007.
3. Atul Kahate, “*Object Oriented Analysis & Design*”, 1stEdition, TMH, 2007.
4. Mark Priestley, “*Practical Object-Oriented Design with UML*”, 2nd Edition, TMH, 2005.
5. Craig Larman, “*Applying UML and Patterns: An introduction to Object*”, Oriented Analysis and Design and Unified Process, 3rd Edition, Pearson Education, 2007.

