

AIM:

To study object oriented analysis and design and the techniques needed to apply them.

OBJECTIVES:

- To study the concepts of modeling in object oriented contexts
- To learn about the Object Constraint Language
- To study and learn how to apply analysis techniques and methodologies including Use cases, System Sequence Diagrams
- To study and learn how to apply design techniques and methodologies including Interaction Diagrams, Class Diagrams
- To study implementation related issues
- To study and learn how to apply advanced techniques including Architectural Analysis and Design Patterns

UNIT I INTRODUCTION 8

Introduction – Modelling as a design technique –UML diagrams- Class modeling – Object Constraint Language – State modeling – Interaction Modeling

UNIT II OVERVIEW OF USECASES 9

Inception – Evolutionary Requirements – Use Cases – Other Requirements – Domain Models – System Sequence Diagrams – Operation Contracts

UNIT III MODELING OF DESIGN TECHNIQUE 10

Requirements to Design – Logical Architecture and UML Package Diagrams – Object Design – Interaction Diagrams – Class Diagrams – Designing Objects with Responsibilities – Object Design Examples – Designing for Visibility

UNIT IV MAPPING 8

Mapping designs to code – Test Driven development and refactoring – UML Tools and UML as blueprint

UNIT V PATTERNS 10

More Patterns – Analysis update – Objects with responsibilities – Applying design patterns – Architectural Analysis – Logical Architecture Refinement – Package Design – Persistence framework with patterns

TOTAL= 45 PERIODS

TEXTBOOKS:

1. Michael Blaha and James Rumbaugh, "Object-oriented modeling and design with UML", Prentice-Hall of India, 2005. (Unit 1)
2. Craig Larman. "Applying UML and Patterns – An introduction to Object-Oriented Analysis and Design and Iterative Development", 3rd ed, Pearson Education, 2005.

REFERENCES:

1. Booch, Grady. Object Oriented Analysis and Design. 2nd ed. Pearson Education. 2000.
2. Ali Bahrami, "Object Oriented Systems Development", McGraw-Hill, 1999.
3. Fowler, Martin. UML Distilled. 3rd ed. Pearson Education. 2004.
4. Lunn, Ken. Software development with UML. Palgrave Macmillan. 2003.
5. O'Docherty, Mike. Object-Oriented Analysis & Design. Wiley. 2005.