

AMSW10 SOFTWARE DESIGN

UNIT-1 INTRODUCTION

- 1.1 Software Modeling- Object oriented Methods and UML- Software Architectural design- Method and Notation- Evolution of Software Modeling and Design Methods
- 1.2 Overview of UML Notations- Software Life cycles and UML Processes
- 1.3 Software Life cycle and Models- Design Verification and Validation- Software Design and Architectural Concepts- OO Concepts- Information Hiding- Inheritance and Generalization
- 1.4 Concurrent Processing- Design Patterns- Requirements analysis and Design Modeling- Designing Software Architectures.

UNIT-2 SOFTWARE MODELING

- 2.1 Use case Modeling- Static Modeling- Association between classes Composition and Classification Hierarchies- Constraints- Static Modeling and the UML
- 2.2 Categorization of classes using UML stereotypes- Modeling External Classes- Static Modeling of Entity Classes- Object and class Structuring

UNIT-3 DETAILED DESIGN

- 3.1 Dynamic Interaction Modeling- Object Interaction Modeling- Message Sequence Numbering on Interaction Diagram- Dynamic Interaction Modeling
- 3.2 Stateless Dynamic Interaction Modeling- Finite State Machines and State Transitions- Events, Guard Conditions and Actions- Hierarchical State charts
- 3.3 Guidelines for designing State Charts- Steps in State Dependent Dynamic Interaction Modeling- Modeling Interaction Scenarios using Interaction and State Chart Diagrams

UNIT-4 ARCHITECTURAL DESIGN

- 4.1 Software Architecture and Component Based Software Architecture- Multiple views of Software Architecture and Patterns- Documenting Software Architecture
- 4.2 Interface Design- Designing Software Architecture- Software Sub system Architectural Design- Designing Object oriented Software Architecture
- 4.3 Designing Component Based Software Architecture

UNIT-5 CASE STUDIES

- 5.1 Designing Concurrent and Real time Software Architectures- Designing Software Product Line Architectures – Software Quality Attributes
- 5.2 Case Studies - Client – Server Software Architecture Case Study- Component Based Software Architecture Case Study – Real Time Software Architecture

Reference Books:

1. David Budgen, “Software Design”, Addison-Wesley, 2007.
2. Christopher Fox, “Introduction to Software Engineering Design: Processes, Principles and Patterns with UML2”, Pearson, 2007.