



BIT 411

SOFTWARE REUSE TECHNIQUES

UNIT-I

Software reuse success factors, Reuse driven software engineering as business, Object oriented software engineering, Applications and Component subsystems, Use case components, Object components.

UNIT-II

Design Patterns — Introduction. Creational Patterns — Factory Pattern, Factory Method, Abstract Factory Pattern, Singleton Pattern, Builder Pattern, Prototype Pattern.

UNIT-III

Structural Patterns — Adapter Pattern, Bridge Pattern, Composite Pattern, Decorator Pattern, Façade Pattern, Flyweight Pattern, Proxy Pattern. Behavioral Patterns — Chain of responsibility Pattern, Command Pattern, Interpreter Pattern.

UNIT-IV

Behavioral Patterns—Iterator Pattern, Mediator Pattern, Memento Pattern, Observer Pattern, State Pattern, Strategy Pattern, Template Pattern, Visitor Pattern. Architectural Patterns—Layers, Pipes and Filters, Black board.

UNIT-V

Object Oriented Business Engineering –Business Process Reengineering, Software Engineering Process in reuse business. Component System Engineering – building flexible components systems, requirement analysis, robustness analysis, design, implementation and testing the component system.

Suggested Reading:

- 1) Ivar Jacobson, Martin Griss, Patrick Johnsson, “Software Reuse: Architecture, Process and Organization for Business Success”. Pearson Education, 2003.
- 2) James W Cooper, “Java Design Patterns, a tutorial“, Pearson Education, 2003.
- 3) Frank Buschmann, et al., “Pattern Oriented Software Architecture – Volume I” John Wiley & Sons, 1996.