

Devi Ahilya University, Indore, India Institute of Engineering & Technology				I Year M.E. (Computer Engineering Sp. in Software Engineering)			
				(Full Time)			
Subject Code & Name	Instructions Hours per Week			Credits			
SER2C2 Design Pattern	L	T	P	L	T	P	Total
Duration of Theory Paper: 3 Hours	3	1	2	3	1	1	5

Learning Objectives: To strengthen the knowledge of Object Oriented Design and Development by understanding various design patterns.

Pre requisites: Knowledge of object oriented system concepts, object oriented analysis and modeling and object oriented programming.

COURSE CONTENTS

UNIT-I

Introduction to Software Patterns, Overview of UML, Class Diagrams, Collaboration Diagrams, State chart Diagram, Deployment Diagram, Fundamental Design Patterns: Delegation, Interface, Abstract Super-class, Interface and Abstract class, Immutable, Marker Interface.

UNIT-II

Simple Factory pattern, Factory Method, Abstract Factory, Builder, Prototype, Singleton

UNIT-III

Adaptor, Bridge, Composite, Façade, Flyweight, Decorator, Proxy Pattern

UNIT-IV

Chain of Responsibility, Command, Interpreter, Mediator, Memento Pattern

UNIT-V

Observer, State, Strategy, Template Method, Visitor, Iterator Pattern.

Learning Outcomes: To learn Various Design Patterns and learn their application in real software development..

BOOKS RECOMMENDED:

- [1]. Gamma, Helm, Johnson, Vlissides, Design Patterns. Elements of Reusable Software., Pearson Education 2006
- [2]. Cooper, J. W., Java Design Patterns, A Tutorial, Pearson Education, 2000.
- [3]. Freeman, Freeman, Head First Design Patterns, O'Reilly Pub. 2007
- [4]. Mark Grand, Patterns in Java Vol. 1, Wiley 2002
- [5]. Mark Grand, Patterns in Java Vol. 2, Wiley 2002
- [6]. Mark Grand, Patterns in Java Vol. 3, Wiley 2002
- [7]. Douglas Schmidt, Pattern Oriented Software Architecture Voll, John Wiley 2000, also called as POSA