III/IV B. TECH. SECOND SEMESTER
DESIGN PATTERNS
(Required)

Course Code: CS 6T2   **Credits: 3**
Lecture: 3 periods/ week   **Internal assessment: 30 Marks**
Tutorial: 1period/week   **Semester end examination: 70 Marks**

Prerequisites: Database Management Systems

Course Objectives:

1. Understand the concept of Design patterns and its importance .
2. Understand the behavioral knowledge of the problem and solutions.
3. Relate the Creational, Structural , behavioral Design patterns.
4. Apply the suitable design patterns to refine the basic design for given context.

Course Outcomes:

CO1) Identify the appropriate design patterns to solve object oriented design   problems..

CO2) Develop design solutions using creational patterns.

CO3) Apply structural patterns to solve design problems.

CO4) Construct design solutions by using behavioral patterns.

Syllabus:

UNIT 1

Introduction: What Is a Design Pattern?, Design Patterns in Smalltalk MVC, Describing Design Patterns, The Catalog of Design Patterns, Organizing the Catalog, How Design Patterns Solve Design Problems, How to Select a Design Pattern, How to Use a Design Pattern.

UNIT 2

 A Case Study: Designing a Document Editor: Design Problems, Document Structure, Formatting, Embellishing the User Interface, Supporting Multiple Look-and-Feel Standards, Supporting Multiple Window Systems, User Operations Spelling Checking and Hyphenation.

UNIT 3

Creational Patterns: Abstract Factory, Builder, Factory Method, Prototype, Singleton.

UNIT 4

Structural Patterns: Adapter, Bridge, Composite, Decorator, Façade, Flyweight, Proxy.

UNIT 5

Behavioral Patterns: Chain of Responsibility, Command, Interpreter, Iterator, Mediator, Memento, Observer, Strategy, Template Method, Visitor.
Conclusion: What to Expect from Design Patterns, The Pattern Community.

Learning Resource

Text Books

1. Design Patterns By Erich Gamma, Pearson Education
2. Design Patterns Explained By Alan Shalloway,Pearson Education..
3. Meta Patterns designed by Wolf gang , Pearson.

References

1. Head First Design Patterns By Eric Freeman-Oreilly-spd
2. JAVA Enterprise Design Patterns Vol-III By Mark Grand ,Wiley DreamTech.
3. Pattern's in JAVA Vol-I By Mark Grand ,Wiley DreamTech.
4. Pattern's in JAVA Vol-II By Mark Grand ,Wiley DreamTech.