COURSE CODE	COURSE TITLE	L	T	P	C
1152IT121	**JAVA DESIGN PATTERN**	**3**	**0**	**0**	**3**

Course Category:
~~Foundation (0)~~ /~~ Program Core (1) ~~/ **Program Elective (2)**~~ / Allied Elective (3) / University Elective (4) / Value Education Elective (5) / Independent Learning (6) / Industry – Higher Learning Institute Interaction (7).~~

A. Preamble :

This course introduces the students to 1. Understand and be able to apply incremental/iterative development 2. Understand common design patterns 3. Be able to identify appropriate design patterns for various problems 4. Be able to refactor poorly designed program by using appropriate design patterns.

B. Prerequisite Courses:

Sl. No	Course Code	Course Name
1	**1151IT106**	Object Oriented Software Engineering

C. Related Courses:

Sl. No	Course Code	Course Name
1	**1151IT104**	Object Oriented Programming

D. Course Outcomes :

Upon the successful completion of the course, students will be able to:

CO Nos.	Course Outcomes	Knowledge Level (Based on revised Bloom's Taxonomy)
CO1	To reason each object oriented design principle	K1
CO2	Identifying what specific design problem the pattern solves	K2
CO3	To draw class diagrams in each pattern	K2
CO4	Provide specific context for each pattern in which it can be applied	K2

E. Correlation of COs with POs :

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	**L**	**L**			**H**							**M**
CO2	**L**			**M**	**H**							
CO3	**L**	**L**										**H**
CO4		**L**			**H**							

H- High; M-Medium; L-Low

F. Course Content :

UNIT I- CORE JAVA FUNDAMENTAL **L-10**

Introduction to Java Platform, Introduction to Java Virtual Machine (JVM), First Java Program, Principles of Inheritance & Polymorphism, Variables & Primitive Data Types, How to Design A Class?, Arrays, Basic IO Operation.

UNIT II- INTRODUCTION TO DESIGN PATTERNS **L-8**

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, UML Diagrams.

UNIT III- IT CREATIONAL PATTERNS **L-8**

Abstract Factory, Builder, Factory Method, Prototype, Singleton.

UNIT IV- IT STRUCTURAL PATTERN **L-9**

Singleton. Structural Pattern : Adapter, Bridge, Composite, Decorator, Façade, Flyweight, Proxy.

UNIT V- IT BEHAVIORAL PATTERNS **L-8**

Chain of Responsibility, Command, Interpreter, Iterator, Mediator, Memento, Observer, State, Strategy, Template Method, Visitor.

Total: 45

G. Learning Resources

i. TEXT BOOKS

1. Erich Gamma ,Helm,Johnson and Vlissides,"Design Patterns-elements of Reusable Software , Pearson Education, 1995.
2. Herbert Schildt ,"Complete Reference ",Fifth Edition,The Mcgrawhill/Osberne,2002.

ii. REFERENCE BOOKS

1. James W Cooper ,"Java Design Patterns A Tutorial" Second Edition,Pearson Education,2007.
2. Mark Grand ,"Pattern's in JAVA Vol-I" Wiley Dream Tech.

iii .WEB REFERENCES

1. http://www.javatpoint.com/design-pattern-in-java