Newly modified syllabus copy

(3/6)

Course Title	**Software Architecture and Design pattern**
Prerequisite	**Software Analysis and Design (Structured and Object oriented)**

COURSE OUTCOMES	
1	Understanding large software design techniques under architectural frame work
2	Applying software architecture fundamentals for large problems
3	Understanding design patterns and recognize appropriate situations where to use patterns
4	Apply design patterns inline with architectural design to large problems

Course Contents
Introduction Overview of the structured analysis and design and Object oriented design concepts UML concepts- Class diagram, sequence diagram Class and its code- interface, abstract class, private methods, accessor methods, constant data manager, immutable objects
Overview of Architecture Overview of Software architecture, Architecture patterns and styles
Software Architecture Types Layered architecture, Event driven architecture, Microkernel architecture, Microservices architecture, Space-based architecture
Creational and collection patterns Factory pattern, Singleton pattern, Abstract factory pattern, Prototype pattern, Composite pattern, Iterator pattern, Flyweight pattern, Visitor pattern
Structural Pattern and behavioral patterns Decorator pattern, Adaptor pattern, Façade pattern, Proxy pattern, Bridge pattern, Command pattern, Mediator pattern, Observer pattern, Interpreter pattern, Strategy pattern

TEXT BOOKS

1. Microsoft Patterns & Practices Team, "Microsoft® Application Architecture Guide (Patterns & Practices)", Microsoft Press

2. Partha Kuchana, "Software Architecture design patterns in Java", Auerbach Publications, CRC press.

3. Mark Richards "Software Architecture Patterns", O'Reilly Media

4. Craig Larman, "Applying UML and Patterns: An Introduction to Object-Oriented Analysis and Design and Iterative Development", Prentice Hall

REFERENCES

1. Erich Gama, Richard Helm, Ralf Johnson,John Vlisside, Grady Booch, "Design Patterns: Elements of reusable object-oriented software" Addison-Wesley Professiona

2. Timothy C. Lethbridge, Robert Laganiere, "Object Oriented Software Engineering", McGrawHill.

3. Eric Freeman, Bert Bates, Kathy Sierra, Elisabeth Robson "Head First Design Patterns: A Brain-Friendly Guide" O'Reilly Media

4. Ali Bahrami, "Object Oriented System Development ", McGraw Hill.