

Course Log Template

INSTITUTION

FAST-NU

**PROGRAM (S) TO
BE
EVALUATED**

BS Computer Science

**Course Name
Catalog Number
Instructor Name**

Design Defects and Restructuring

CS 441

Engr. Abdul Rahman

Topics Covered in the Course:

Week	Topic	hours
1	Introduction to Design Patterns, Architectural Patterns & Anti-patterns Software Metaphors,	3
2	Singleton pattern, Adaptor pattern. Factory Pattern (Simple Factory method)	3
3	Object dependencies, Coupling & Cohesion, Façade Design Pattern, Bridge, Builder, chain of responsibility pattern.	3
4	The Need for Design Principles – Refactoring, Single-Responsibility Principle (SRP) Observer pattern. Observer, Flyweight, and interpreter pattern	3
5	Decorator Pattern, Open Closed Principle, Abstract Factory pattern	3
6	Strategy Pattern, The Dependency Inversion Principle, Mediator, Porotype Pattern	3
7	Command Pattern, The Principle of Least Knowledge, Template Method Pattern, The Hollywood Principle, Iterator Pattern	3
10	Composite Pattern, State Pattern, Visitor Pattern, Dependency Injection.	3
11	Proxy Pattern, Compound Patterns, Liskov Substitution Principle, Managing Design conflicts.	3
12	Refactoring, Bad smells in code, Add a Parameter, Bi-directional Association, Change Reference to Value & vise versa, Collapse Hierarchy, Consolidate & Decompose conditionals, Encapsulate collection, downcast and field, Extract class, interface, method, subclass, superclass, and variable, Hide delegate, Hide method, Inline class and Inline temp, Shotgun Surgery.	3



13	Refactoring, Bad smells in code, Inline Temp, Replace Temp with Query, Split Temporary Variable, Replace Method with Method Object, Remove Assignments to Parameters, Replace Method with Method Object, Feature Envy, Data Classes, Jdeodorant, Lazy Class, Parallel Inheritance Hierarchies, Speculative Generality, Message Chains, Benefits of Refactoring, Costs of Refactoring	3
14	Refactoring, Bad smells in code, Middle Man, Inappropriate Intimacy, Incomplete Library Class, Introduce Foreign, Method, Introduce Local Extension, Refused Bequest, Replace Inheritance with Delegation, Divergent Change, Data Clump, Introduce Parameter Object, Preserve Whole Object, Primitive Obsession	3
15	Memento Design Pattern, Interface Segregation Principle	3
16	Project Presentation	3

Instructor Signature _____

Date January 20, 2020