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Department of Computer Engineering	
Special Topics II (66564)	
Total Credits	**3**
major elective	
Prerequisites	-

Course Contents

The content of the course concentrate on some advanced level of software engineering: the design patterns in object oriented language and the standard solutions for standard problems in software designs in addition to the SOLID principles of OOP. We will cover the three types of design patterns in the text; creational, structural and behavioral, how to implement them in Java, and how to express them using the UML (Unified Modeling Language)

	Intended Learning Outcomes (ILO's)	Student Outcomes (SO's)	Contribution
1	Apply the knowledge of different SOLID and Objects Oriented Principle in design an enterprise applications.	K	25 %
2	Become familiar with different design patterns for building reusable, Testable, maintainable and flexible enterprise applications.	C	70 %
3	Work in groups to design enterprise applications.	D	5 %

Textbook and/ or Refrences

Design Patterns: Elements of Reusable Object-Oriented Software By Erich Gamma, Richard Helm, Ralph Johnson, John Vlissides, 1995

Assessment Criteria	Percent (%)
Mid. Term Exam	40 %
Projects	10 %
Final Exam	50 %

Course Plan

Week	Topic
1,2	SOLID and OOP
3,4,5,6,7	Creational Pattern : Factory Method , Abstract Factory, Singleton , Prototype and Builder
7	First Exam
7,8,9,10	Structural Pattern: Adapter, Composite , Decorator , Proxy
11,12	Behavior Pattern Part1 : Chain of Responsibility, Command
12	Second Exam
13, 14,15	Behavior Pattern-Part2 : Iterator ,State, Strategy , Observer
16	Final Exam