

Syllabus

Course

Code: *CSC 423*
Name: *Advanced Software Engineering*

Credits

3-0-0-3

Text Books

- 1- Eric J. Braude , Michael E. Bernstein," Software Engineering: Modern Approaches "2/e , Wiley 2011
- 2- Pratap K.J Mohapatra, "Software Engineering (a lifecycle approach)", New Age International Ltd. 2010, ISBN (13) : 978-81-224-2846-9
- 3- Ian Sommerville, "Software Engineering", 9th Ed., Prentice Hall 2010, ISBN: 0137053460

Prerequisite:

CSC 221 Software Engineering

Course Description

This course is an advanced level software engineering course. Assuming basics of software engineering principles are well known. The topics include: Agile software development, OOD using UML, SW Evolution, Dependability Engineering, Security Engineering, Software Reuse, Component-based Software Engineering, Distributed Software Engineering, Service-oriented Architecture, Aspect-oriented software engineering, Project planning, Quality management, Configuration management, and Process improvement.

Objectives:

1. Explain well-known software development process models
2. Select a software development process which is most appropriate for the development of software products
3. Apply various software design strategies to a software product
4. Use the UML and design patterns to model medium-sized software systems
5. Ability to apply modern techniques of software measurement
6. Get familiar with CASE tools and/or environments including UML drawing tools and IDEs

7. Communicate effectively, in written and oral forms, knowledge and professional opinion
8. Using a common formal specification language, formulate the specification of a simple software system
9. To recognize common security risks

Course Outline

Week	Lecture Topics
1	Agile software development
2	OOD using UML
3	SW Evolution
4	Dependability Engineering
5	Security Engineering
6	Software Reuse
7	Component-based Software Engineering
8	Distributed Software Engineering
9	Service-oriented Architecture
10	Embedded Systems
11	Project planning
12	Quality management
13	Configuration management
14	Process improvement
15	Project presentation

Grading

Assessment/Evaluation:

▪ Assignments (5).	(10%)
▪ Quizzes (5)	(10%)
▪ Midterm-1 Exam.	(15%)
▪ Midterm-2 Exam.	(15%)
▪ Project	(10%)
▪ <u>Final Exam.</u>	<u>(40%)</u>
Total	(100%)

Method of Teaching:

- Lectures - 15 weeks (3 hrs per week).
- Quizzes
- Home works
- Exams