Zarqa University
Faculty of Information technology
Department: Software engineering
Course title: Software Tools and Methods (1503371)

Instructor:
Lecture's time:
Semester:
Office Hours:

Course description:

Software methods and tools are extensively used in current software production to improve software productivity and quality. In this course, we are going to learn a number of popular software methods and tools being used in academia or industry. These methods include object-oriented design and analysis, architecture styles, unit testing, and version control. The covered software tools include Microsoft Project, IBM Rational Modeler, Eclipse Plug-ins, ArchStudio, JUnit, Subversion, and GIT. The course emphasizes practice, and students will be using these methods and tools to develop a software system, from initial planning to final deployment.

Aims of the course:

1. learn about important tools and methods of software development
2. Gain first-hand experience with some of those tools
3. Practice technical discussions with your classmates, and practice finding relevant resources on the Internet
4. Understand the scope of a typical software product and the people and processes that are needed to produce it. Start thinking about where you fit into the software engineering profession.

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Intended Learning Outcomes: (ILOs)

A. KnowledgeandUnderstanding

A1.ConceptsandTheories:

Provide the students with the basic and advanced uses of software development tools and methods for developing a high-quality software

Provide the students with required skills of understanding and knowledge of how to use software development tools and methods

A2.Contemporary Trends, Problems and Research:

A3.Professional Responsibility:

Teaching the students the problems they will face and how to skip these problems to prepare them to be responsible in using such tools and methods

B. Subject-specific skills

B1. Problem solving skills:

Learn how to use different tools and methods of software development to be prepared for any problems they might face during software development stages

B2.ModelingandDesign:

Lear how to build up and design software using the appropriate tools

B3.ApplicationofMethodsandTools:

Learn how, when and where to use the appropriate tools, methods and techniques

C. Critical-Thinking Skills

C1.Analytic skills: Assess

Distinguish between different toolsand methods uses in a specific application

C2.Strategic Thinking:

Understand the available tools and methods for developing software

C3.Creative thinking and innovation:

Understand different tools and methods for building up software

D. General and Transferable Skills (other skills relevant to employability and personaldevelopment)

D1. Communication:

Communicate with the students in the proper way to deliver the required skills and provide them with requiredknowledge about software development tools and methods.

D2.Teamwork and Leadership:

Divide class students into a number of groups to teach them how to work in a teamwork and providing them with assignments and home works to discuss the uses of different tools and methods of software development

Course structures:

Week	Credit Hours	ILOs	Topics	Teaching Procedure	Assessment methods
1-4	3	A1, A3, B1, B2, B3, C1, C2 and C3	Introduction and user needs and processes	Theoretical and practical methods	Testing students level of understanding and areas of weaknesses by different methods such as class participation, quizzes, class homework, exams and activity file
5	1	D1 and D2	First exam and Assignment	Practical	

5-9	3	A1, A3, B1, B2, B3, C1, C2 and C3	Specifications and design, and improving design	Theoretical and practical methods	Testing students level of understanding and areas of weaknesses by different methods such as class participation, quizzes, class homework, exams and activity file
10-11	3	A1, A3, B1, B2, B3, C1, C2 and C3	Design specialities	Theoretical and practical methods	Testing students level of understanding and areas of weaknesses by different methods such as class participation, quizzes, class homework, exams and activity file
11	1	D1 and D3	Second exam and assignment	Practical	
11-12	3	A1, A3, B1, B2, B3, C1, C2 and C3	Implementation	Theoretical and practical methods	Testing students level of understanding and areas of weaknesses by different methods such as class participation, quizzes, class homework, exams and activity file
12-14	3	A1, A3, B1, B2, B3, C1, C2 and C3	Software Quality, amd docs and deployment	Theoretical and practical methods	Testing students level of understanding and areas of weaknesses by different methods such as class participation, quizzes, class homework, exams and activity file

15	3	A1, A3, B1, B2, B3, C1, C2 and C3	Course review	Theoretical and practical methods	Testing students level of understanding and areas of weaknesses by different methods such as class participation, quizzes, class homework, exams and activity file
15	2	D1 and D3	Final Exam	Theoretical and practical methods	

References:

A. Main Textbook:

- Required: Sommerville, Ian. Software Engineering. 6th edition.
- Required: Brooks, Frederick P. The Mythical Man Month. Any edition.
- Required: Fowler, Martin. UML Distilled. 2nd edition.

Assessment Methods:

Methods	Grade	Date
Activity file including assignments, quizzes, reports, etc.	10%	
1st exam	20%	
2nd exam	20%	
Final exam	50%	