



Ministry of Higher Education and Scientific Research  
Mustansiriyah University /College of Science  
Department of Computer Science  
(الخطة الدراسية للمساق)  
Course Plan



**Course No.:**

**Course Name:** Software Engineering

**Course Website:**

**Time Division:** 3 hrs. Theoretical

**Semester & Year:** Frist - 2022 / 2023

**Course Description:**

This subject presents the fundamentals of software engineering, such as system requirements, effective design and testing techniques, collaborative software development, and the use of engineering tools. Additionally, the course will introduce students to various software process models, the software requirements engineering process, systems analysis and design as a problem-solving activity, the critical elements of analysis and design, and the phases of the system development life cycle.

**Course Intended Outcomes:**

- Explain the different practices that are key components of the various processes.
- Apply the basic principles of software project management to a team.
- Understand a variety of strategies for the testing of simple
- Identify and explain the major issues associated with software evolution and their impact on the software lifecycle.
- Identify methods that will lead to the creation of a software architecture that achieves a specified level of reliability and dependability.

**Course Outline:**

Week	The description depends on the Timing table (Theoretical	& Practical)
1	Introduction to Software Engineering, Software Costs, Software Products, Product Specifications, frequently asked questions about software engineering.	
2	Essential attributes of good software, Importance of software engineering, Software process activities, Application types, Software engineering fundamentals.	
3	Case studies A personal insulin pump, a mental health case patient management system	
4	Software processes, Software process descriptions, plan-driven and agile processes, software process models.	
5	Incremental development, reuse-oriented software engineering, incremental development benefits, incremental development problems, types of software components	
6	First Exam	

7	Process activities, the requirements engineering process Software design and implementation, A general model of the design process Requirements Analysis and Specification.	
8	Design activities, Software validation, Software validation, Testing stages, Testing phases in a plan-driven software Process.	
9	Software Analysis, Design Tools, structured Design, Software evolution and system evolution.	
10	Requirements Engineering, what is the requirement? types of requirements, User and system requirements	
11	Stakeholders in the system, stakeholders in the Mentcare system.	
12	Second Exam	
13	Functional and non-functional requirements system: functional requirements, types of non-functional requirements, non-functional requirements implementation, non-functional classifications.	
14	Requirement's discovery, Interviewing, Interviews in practice, problems with interviews.	
15	Stories and Scenarios, Use Cases, Use Cases for the Mentcare system	

### Textbooks:

[1]: Sommerville, Ian. Software engineering / Ian Sommerville. — 9th ed & 10th . ISBN 10: 0-13-703515- 2, ISBN 13: 978-0-13-703515-1. Publisher: Copyright © 2011, 2006, 2005, 2001, 1996 Pearson Education, Inc., publishing as Addison-Wesley.

### Suggested references:

[1]: Mall Rajib, Fundamentals of Software Engineering, PHI.  
 [2]: Pressman, Software Engineering Practitioner's Approach, TMH.

### Marking:

First Semester				Final Exam
1st exam	2nd exam	Practical	Activity	
12	12		6	70

Assignment/ Project	Description	Due Date	Marking
Test	Written Exam	01/01/2022	3
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### Instructor(s) information [معلومات الأستاذ]

Section: (Computer Science) ; Lecture Room:[ ], ; Office No.: ( 9 )

Instructor's Name: **Lecturer. Yasmin M. Mohialden AND Dr. Zaid Ali Sabeeh**

E-Mail: [ymmiraq2009@uomustansiriyah.edu.iq](mailto:ymmiraq2009@uomustansiriyah.edu.iq) [dr.zaid\\_aljarah@uomustansiriyah.edu.iq](mailto:dr.zaid_aljarah@uomustansiriyah.edu.iq)

**Office Hours : Tue.:[ : - : ]**  
**Wed.:[ : - : ]**

**NOTES:**

- Office Hour: Other office hours are available by appointment.
- The content of this syllabus not be changed during the current semester.

**Lecturer Signature**

**Chairman Signature**