MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

<table>
<tr><td colspan="4" align="center">Module Information
معلومات المادة الدراسية</td></tr>
<tr><td>Module Title</td><td colspan="2" align="center"><strong style="color:red">Software Engineering</td><td>Module Delivery</td></tr>
<tr><td>Module Type</td><td colspan="2" align="center">Basic</td><td rowspan="4">☒ Theory
☐ Lecture
☒ Lab
☐ Tutorial
☐ Practical
☐ Seminar</td></tr>
<tr><td>Module Code</td><td colspan="2" align="center"><strong style="color:red">UOMU0302055</td></tr>
<tr><td>ECTS Credits</td><td colspan="2" align="center">5</td></tr>
<tr><td>SWL (hr/sem)</td><td colspan="2" align="center"><strong style="color:red">125</td></tr>
<tr><td>Module Level</td><td>3</td><td>Semester of Delivery</td><td>5</td></tr>
<tr><td>Administering Department</td><td>الأنظمة الطبية الذكية</td><td>College</td><td>العلوم</td></tr>
<tr><td>Module Leader</td><td>م.د. أحمد عدنان محمد</td><td>e-mail</td><td>ahmed.adnan.mohammed@uomus.edu.iq</td></tr>
<tr><td>Module Leader's Acad. Title</td><td></td><td>Module Leader's Qualification</td><td></td></tr>
<tr><td>Module Tutor</td><td>م.د. أحمد عدنان محمد</td><td>e-mail</td><td>ahmed.adnan.mohammed@uomus.edu.iq</td></tr>
<tr><td>Peer Reviewer Name</td><td>ا.د مهدي عبادي مانع</td><td>e-mail</td><td>mahdi.ebadi@uomus.edu.iq</td></tr>
<tr><td>Scientific Committee Approval Date</td><td>1/10/2025</td><td>Version Number</td><td>2.0</td></tr>
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<table>
<tr><td colspan="4" align="center">Relation with other Modules
العلاقة مع المواد الدراسية الأخرى</td></tr>
<tr><td>Prerequisite module</td><td>/</td><td>Semester</td><td>/</td></tr>
<tr><td>Co-requisites module</td><td>None</td><td>Semester</td><td>None</td></tr>
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Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	The module aims to introduce software engineering (S.E) which is the application of engineering to the design, development, implementation, testing and maintenance of software in a systematic method. The main objectives of this module are: 1. create dependable and effective software and produce high-quality software. 2. provide a methodology for software development. These software engineering methodologies emphasize assessments of software requirements, software design, program development guidelines, error or quality control, software testing, and technical and non-technical assistance. 3. offers an analysis of information necessary for software development, projections of required software functionality, behavioral design of expected and unexpected software behavior. 4. Software engineering performs three main tasks Information Technology, proper software project planning, Software engineering approaches. 5. Software engineering identify errors. Errors are identified and eliminated as necessary. 6. Software engineering facilitates many tasks such as Monitoring and management of produced software, creating technical software evaluations, ensuring the quality of the software being produced. 7. Software engineers apply engineering principles and knowledge of programming languages to build software solutions for end users.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Understanding the basic concepts of Software Engineering and Know the purpose of software engineering and the benefits it provides. 2. Recognize the types of software products and the nature of their systems. And Study software applications and knowing its importance. 3. What is the process and what does it consist of and its Fundamental Activities. 4. Understand the meaning of software modeling and its Generic Software Process Models. 5. Study the process of requirement engineering and knowing its objectives. 6. Explanation of the most Requirements Engineering Activities. 7. Conducting a feasibility study to find out the functions that the Software can implement beside Requirement Gathering. 8. Study the specifications of the Software requirements and discuss the advantages of this Software. 9. Validate the Software Requirement and the conditions. 10. Identification of the requirement elicitation process and how can we describe it.

	11. Study the requirement elicitation techniques and the various ways to discover the requirements. 12. Understand the Software Requirements and what is the difference between Functional and nonfunctional requirements. 13. discuss the importance of user interface requirements with examples. 14. Explaining the Software Design Principles & Concepts in Software Engineering 15. Discuss the Software Implementation & Management Process 16. Defining The Concepts of Project Management
Indicative Contents المحتويات الإرشادية	The module includes four main requirements that the student must complete in order to successfully pass the course. **1. Readings:** Students must weekly read each lecture before presenting it in the classroom in order to be able to interact and discuss. The content of the course includes two main parts, and each part includes a group of sections whose topics are illustrated in weekly syllabus, which includes: **2. Discussion:** We will use discussion as the main form of interaction in the class. Students' responses to the weekly readings, their individual assignments, and their thoughtful responses to their classmates' posts show their level of understanding. Their active participation in the discussions is the best way to get the most out of the course! **3. Oral Presentations:** The purpose of this assignment is to allow students to explore a topic in more detail for each lecture and to share the results with their classmates. Each student is required to submit a short report in slideshow format (10 slides not including title and reference slides) on a topic relevant to one of the course lecture. The proposed topics are presented in the classroom, but the student can choose other related topics (but after the approval of the teacher). Presentations should be based on scientific sources of information (be sure to include an appropriate list of references). And we should delve deeper into an interesting topic for each section. Try to use non-text materials in your presentation (videos or online examples, tables, charts, and graphs) as a way to group and present the main ideas and themes. If some text is necessary, please limit it to very short paragraphs and bulleted lists. Although not a requirement, all presentations will be posted to Google Classroom and a resource for other class participants. The student is expected to answer the questions of his classmates. **4. Project:** This assignment requires the submission of a project by a group of students within a team work that employs all the theoretical concepts studied in the theoretical lectures, SQL topics, and advanced experience in dealing with complex SQL expressions to design and implement an EHR system in the real world.

Learning and Teaching Strategies	
استراتيجيات التعلم والتعليم	
Strategies	The main strategy that will be adopted in the delivery of this module is to encourage students to participate in discussions, while improving and expanding their critical thinking skills. This will be achieved through discussions during the weekly lectures and after the oral presentations by answering the questions of their colleagues. Enhancing the principle of teamwork by participating in the implementation of the EHR system implementation project.

Student Workload (SWL)			
الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation					
تقييم المادة الدراسية					
		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	4,10	LO #1,2,3 and 12
	Project Assignment	2	10% (10)	12	LO # 13,14 and 15
	Lab. Assignment	1	10% (10)	Continuous	LO # 13, 14 and 15

	Seminar	1	10% (10)	The student chooses the week and the topics	All
Summative assessment	**Midterm Exam**	3hr	10% (10)	9	LO # 1-11
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week 1	Course Introduction **PART ONE: Introduction to Software Engineering** 1 Introduction, components, functions, feature, and benefits of Software Engineering 2 Software product
Week 2	3 Process steps 4 Software process
Week 3	5 Software modeling
Week 4	6 Generic Software Process Models
Week 5	7 Waterfall Model 8 Evolutionary Development Model
Week 6	9 Increment Model: 10 Spiral & Concurrent development Model)
Week 7	11 Requirement Engineering Process Feasibility studies & requirement gathering 12 Software Requirement Specification (SRS):
Week 8	13 Software Requirement Validation
Week 9	**Midterm Exam**
Week 10	14 Requirement Elicitation Process
Week 11	15 Software Requirements
Week 12	16 User Interface requirements
Week 13	17 Explaining the Software Design Principles & Concepts in Software Engineering
Week 14	18 Discuss the Software Implementation & Management Process
Week 15	19 Defining The Concepts of Project Management
Week 16	**Preparatory week before the final Exam**

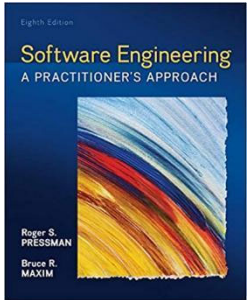## Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	· What you will learn in this Module · Introduction to SE
Week 2	· Downloading Star unified modeling language (starUML)
Week 3	· Types of UML diagrams
Week 4	· Examples of UML diagrams
Week 5	· Use Case diagrams
Week 6	· Creating Class diagrams
Week 7	· Object diagrams
Week 8	· Sequence diagrams
Week 9	• Collaboration diagrams
Week 10	• State chart diagrams
Week 11	• State chart diagrams
Week 12	• Activity diagrams
Week 13	• Component diagrams
Week 14	• Development diagrams
Week 15	•This Section is chalk full of practice questions. You will practice using (starUML) questions.

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?

Required Texts	● Roger S. Pressman. Software Engineering: A Practitioner's Approach: ACP Press. (9780078022128).	Yes

Recommended Websites	https://www.javatpoint.com/software-engineering https://software-engineering-books.com

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.