



University/Academy: Arab Academy for Science and Technology & Maritime Transport
Faculty/Institute: College of Computing and Information Technology
Program: Software Engineering / Computer science / Information Systems

Course title	Introduction to Software Engineering
Course code	SE291

Form no. (11-A)

Knowledge and skills matrix for a course

Course content	Week study	Knowledge	Intellectual skills	Professional skills	General skills
Overview and History of Software Engineering	1	<ul style="list-style-type: none"> Describe an overview and History of Software Engineering 	<ul style="list-style-type: none"> Show an introduction to the SDLC, Structured Analysis and Design and UMLs 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
Software Process	2	<ul style="list-style-type: none"> Define Software Process 	<ul style="list-style-type: none"> Demonstrate Functional and non-functional requirements 	<ul style="list-style-type: none"> Solve case studies 	<ul style="list-style-type: none">
Software Process Models	3	<ul style="list-style-type: none"> Explain Software Process Models with the advantage and disadvantage of each 	<ul style="list-style-type: none"> Demonstrate Data flow diagrams (level 1) 	<ul style="list-style-type: none"> Solve case studies 	<ul style="list-style-type: none">
Requirements Engineering	4	<ul style="list-style-type: none"> Explain Requirements Engineering process 	<ul style="list-style-type: none"> Demonstrate Data flow diagrams (level 2) 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
Requirements Definition and Specification	5	<ul style="list-style-type: none"> Describe Requirements Definition and Specification 	<ul style="list-style-type: none"> Revise Entity Relationship diagrams 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">

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Structured Analysis	6	<ul style="list-style-type: none"> Explain Structured Analysis process and methods 	<ul style="list-style-type: none"> Apply Use Case Diagrams and Usage Scenarios 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Verify theory with practice
7 th week Exam + Structured Analysis Revision	7	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
Object- Oriented Analysis	8	<ul style="list-style-type: none"> Explain Object-Oriented Analysis 	<ul style="list-style-type: none"> Apply Class Diagrams and Object Diagrams Demonstrate Package Diagrams 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Verify theory with practice
Object- Oriented Analysis	9	<ul style="list-style-type: none"> Explain Object-Oriented Analysis 	<ul style="list-style-type: none"> Demonstrate Sequence Diagrams Demonstrate Collaboration Diagrams 	<ul style="list-style-type: none"> Compare between structural analysis and object- oriented analysis and design Solve case studies 	<ul style="list-style-type: none">
Design Concepts and Principles	10	<ul style="list-style-type: none"> Explain Design Concepts and Principles 	<ul style="list-style-type: none"> Apply State Chart Diagrams Apply Activity Diagrams 	<ul style="list-style-type: none"> Compare between structural analysis and object- oriented analysis and design Solve case studies 	<ul style="list-style-type: none"> Verify theory with practice
Architectural Design	11	<ul style="list-style-type: none"> Explain Architectural Design 	<ul style="list-style-type: none"> Demonstrate Component Diagrams Demonstrate Deployment Diagrams 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
12 th week Exam + Architectural Design	12	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">
Verification and Validation	13	<ul style="list-style-type: none"> Describe Verification and Validation 	<ul style="list-style-type: none"> Demonstrate Test Cases 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">

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Software Testing	14	<ul style="list-style-type: none"> Explain Software Testing 	<ul style="list-style-type: none"> Apply Cyclomatic Complexity 	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Verify theory with practice
Revision	15				

Course Instructor

Name:

Name:

Signature:

Signature: