



## Form no. (11A) Knowledge and skills matrix for a course

Course content	Week	Knowledge	Intellectual skills	Professional skills	General skills
Introduction to S/W testing – Ch 1	1	Activities of a test engineer Software testing limitations Coverage criteria for testing	Identify attributes, components, relationships, patterns, main ideas, and errors.	<b>P17.</b> Evaluate systems in terms of general quality attributes and possible tradeoffs presented within the given problem. <b>P20.</b> Deploy effectively the tools used for the construction and documentation of software, with particular emphasis on understanding the whole process involved in using computers to solve practical problems.	<b>G1.</b> Demonstrate the ability to make use of a range of learning resources and to manage one's own learning. <b>G7.</b> Show the use of general computing facilities.
S/W testing techniques – Ch 2	2	Graph coverage criteria Graph coverage for source code, design elements, Specifications, use cases. Representing graphs algebraically	Identify attributes, components, relationships, patterns, main ideas, and errors.		
S/W testing Fundamentals – Ch 3	3	Logic coverage Logical expression coverage criteria Structural logic coverage of programs	Identify attributes, components, relationships, patterns, main ideas, and errors.		
Testing Through S/W SDLC– Ch 4	4	Software SDLC	Identify attributes, components, relationships, patterns, main ideas, and errors.		
S/W testing design principles – Ch 5	5	Syntax based testing Program-based Grammars	Identify attributes, components, relationships, patterns, main		

Revision		Integration and OO testing Specification based	ideas, and errors.		
	6	grammars Input space grammars	Identify attributes, components, relationships, patterns, main ideas, and errors.		
Exam	7				
Control Flow testing – Ch 6	8	Regrssion testing, Integration and testing, Test process, test plans, and identifying correct outputs	Perform comparisons between (methods, techniques, strategies ...etc).		
Control Flow testing (Cont.) – Ch 6	9		Perform comparisons between (methods, techniques, strategies ...etc).	<b>P17.</b> Evaluate systems in terms of general quality attributes and possible tradeoffs presented within the given problem. <b>P20.</b> Deploy effectively the tools used for the construction and documentation of software, with particular emphasis on understanding the whole process involved in using computers to solve practical problems.	<b>G1.</b> Demonstrate the ability to make use of a range of learning resources and to manage one's own learning. <b>G7.</b> Show the use of general computing facilities.
Data flow testing ( Black Box Testing)- Ch 7	10	Understand Black box testing	Perform comparisons between (methods, techniques, strategies ...etc). Identify attributes, components, relationships, patterns, main ideas, and errors.		
Data flow testing ( White Box Testing)- Ch 7	11	Understand white box testing	Perform comparisons between (methods, techniques, strategies ...etc). Identify attributes, components, relationships, patterns, main ideas, and errors.		
Exam	12				
Testing Tools – Ch8	13	Instrumentation for Graph and logical expression criteria	Perform comparisons between (methods, techniques, strategies ...etc).		

		Building Mutation testing tools			
Testing Tools ( Cont.)- Ch 8.	14	Software testability	Perform comparisons between (methods, techniques, strategies ...etc).		
Revision	15				
Final exam	16				

**Course Instructor:**

**Head of Department:**

**Program Manager:**