

University / Academy: Menoufia University

College / Institute: Faculty of Electronic Engineering

Department: Computer Science and Engineering

Course Specification

1- Course basic information:		
Course Code: CSE 462	Course Title: Software Engineering	Academic year: 2011/2012 Level (4) – Semester : 1
Faculty requirement	Teaching hours: Lecture <input type="text" value="3"/> Tutorial <input type="text" value="2"/> Lab <input type="text" value="1"/>	

2- Aim of the course	<ul style="list-style-type: none">- Apply knowledge of science and engineering concepts to the solution of engineering problems- Design a system to meet the required needs within realistic constraints- Use the techniques, skills, and appropriate engineering tools, necessary for engineering practice and project management.- Work effectively within multi-disciplinary teams.- Communicate effectively- Display professional and ethical responsibilities; and contextual understanding- Engage in self- and life- long learning- Use current advanced techniques, skills, and tools necessary for computing practices to specify, design, and implement computer-based systems- Managing projects related to computer systems in diverse fields of applications.- Implementing phases of the computer system development life cycle and software design
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3- Intended Learning Outcomes:	
A- Knowledge and Understanding:	a1. Concepts and theories of sciences, appropriate to the computer science and engineering a5. Methodologies of solving engineering problems a6. Quality assurance systems, codes of practice and standards a10. Technical language and report writing a14. Quality assessment of computer systems a16. Related research and current advances in the field of computer

	software
B- Intellectual Skills	<p>b2. Select appropriate solutions for engineering problems based on analytical thinking</p> <p>b3. Think in a creative and innovative way in problem solving and design</p> <p>b4. Combine, exchange, and assess different ideas, views, and knowledge from a range of sources</p> <p>b5. Assess and evaluate the characteristics and performance of systems and processes</p> <p>b10. Incorporate economic, societal, environmental dimensions and risk management in design</p> <p>b14. Select the appropriate mathematical tools, computing methods, design techniques for modeling and analyzing computer systems</p> <p>b15. Select, synthesize, and apply suitable IT tools to computer engineering problems</p> <p>b16. Proposing various computer-based solutions to business system problems</p> <p>b17. Cost-benefit analysis should be performed especially in sensitive domains where direct and indirect costs are involved</p>
C- Professional Skills	<p>c3. Create and/or re-design a process, component or system, and carry out specialized engineering designs</p> <p>c6. Use a wide range of analytical tools, techniques, equipment, and software packages pertaining to the discipline and develop required computer programs</p> <p>c9. Demonstrate basic organizational and project management skills</p> <p>c12. Prepare and present technical reports</p> <p>c14. Use appropriate specialized computer software, computational tools and design packages throughout the phases of the life cycle of system development</p> <p>c15. Write computer programs on professional levels achieving acceptable quality measures in software development</p>
D- General Skills	<p>d1. Collaborate effectively within multidisciplinary team</p> <p>d3. Communicate effectively</p> <p>d5. Lead and motivate individuals</p>

	department
b- Text book	Ian Sommerville, <i>Software Engineering</i> , Pearson Education Limited, 8 th Ed., 2007
c- Recommended books	Roger S. Pressman, <i>Software Engineering: A Practitioners Approach</i> , McGraw-Hill, 5 th Ed., 2001
d- Periodicals, Web sitesetc	IEEE Transactions on Computers and Software

Course Contents - ILOs Matrix

Content Topics	Week	A- Knowledge & Understanding	B- Intellectual skills	C- Professional and practical skills	D- General and transferable skills
The nature, rationale and principles of software engineering.	1	A1	-	-	-
Phases of development Requirements and their relationship to testing.	2	A5	B2,B3	C3	-
Specification and introductory design. Designing with Finite State Machines.	3,4, 5	A6, A10	B4, B5	C6, C9	D3
Designing with Jackson Structured Programming.	6, 7, 8	A10, A14	B10	C12	D1
Designing with Data Flow Diagrams.	9, 10	A5, A16	B14,B15	C12, C15	D5
Testing and Coverage Metrics.	11, 12	A1	B16	C14	D7
Inspection, Maintenance and Evolution	13, 14	A10	B17	C15	D6

Course coordinator:

Dr. Eng. Zeiad El-Saghir

Head of Department:

Prof. Nawal Ahmed El-Fishawy

Date: / /