Arab Academy for Science and Technology& Maritime Transport
College of Computing and Information Technology

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

Form no. (12)
Course Specification

1- Course Data

Course Code: SE496	Course Title: Software Engineering Process	Academic Year/Level: 3 / 6
Specialization: Software Engineering	No. of Instructional Units: Lecture 2 Tutorial 2 Practical 0	

2- Course Aim	Upon completion of this course, students should be able to: • Understand software development best practices. • Apply RUP model. • Use iterative approach for software development. • Design S/W using component-based architectures. • Integrate and use cases in RUP. • Acquire skills in RUP's project management. • Apply RUP's business modeling. • Apply RUP's requirements discipline. • Implement analysis, design, implementation, and testing disciplines within RUP. Understand the configuration and change management disciplines.

3- Intended Learning Outcome

a- Knowledge and Understanding	**Students will be able to:** K12. Understanding essential facts, concepts, principles and theories relevant to software engineering. K15 Demonstrate strong knowledge of software systems analysis & design, data and Information Management, software project management, and software development models. K17 Show a critical understanding of the broad context within software engineering including issues such as quality, reliability. K19 Perform specification, analysis, design, implementation and testing of software solutions.

	K20 Modeling organizational processes and data, defining and implementing technical and process solutions, managing projects, and integrating software systems K22 Understand the challenges inherent in the maintenance and evolution of software systems, and the techniques and best practices currently available for dealing with them.
b- Intellectual Skills	<u>By the end of the course, the student acquires high skills and an ability to:</u> I10 Identify and define traditional and nontraditional software systems problems, set goals towards solving them, and observe results I12 Identify attributes, components, relationships, patterns, main ideas, and errors. I14 Select the suitable tools, methods and techniques for modeling, analyzing software, establishing criteria, and verify solutions.
c- Professional Skills	**By the end of the course the student will have the ability to:** P10. Use quantitative analysis techniques appropriately and effectively P13. Communicate effectively by oral, written and visual means, produce acceptable reports and technical and user system documentation. P15. Using tools to automate software development phases. P17. Evaluate systems in terms of general quality attributes and possible tradeoffs presented within the given problem. P20 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.
d- General Skills	**Students will be able to:** G1. Demonstrate the ability to make use of a range of learning resources and to manage one's own learning. G2. Demonstrate skills in group working, team management, time management and organizational skills. G3. Show the use of information-retrieval.
4- Course Content	• Understand software development best practices • An Introduction to RUP • Essentials of Rational Unified Process • RUP-I • RUP-II • Integrating RE Processes • Principles of Software Testing • Software Testing

5- Teaching and Learning Methods	- Lectures - Class Discussions - Tutorial - Labs
6- Teaching and Learning Methods for Students with Special Needs	• - Students with special needs are requested to contact the college representative for special needs (currently Dr Hoda Mamdouh in room C504) • Consulting with lecturer during office hours. • Consulting with teaching assistant during office hours. • Private Sessions for redelivering the lecture contents. For handicapped accessibility, please refer to program specification.
7- Student Assessment:	
a- Procedures used:	1. Written Examinations to assess the Intended Learning Outcomes. 2. Class Activities (Exercises and Discussions) to assess Intellectual Skills. 3. Assignments and lab activities to assess professional skills.
b- Schedule:	• Assessment 1: 7th Week Written and Practical Exams • Assessment 2: 12th Week Written and Practical Exams • Assessment 3: 16th Week Final Written Exam • Assessment 4: Continuous evaluation
c- Weighing of Assessment:	<table><tr><th>Assessment</th><th>%</th></tr><tr><td>7th week written exam</td><td>20</td></tr><tr><td>7th week practical exam</td><td>10</td></tr><tr><td>12th week written exam</td><td>10</td></tr><tr><td>12th week practical exam</td><td>10</td></tr><tr><td>Semester work</td><td>10</td></tr><tr><td>Final exam</td><td>40</td></tr><tr><td>Total</td><td>100%</td></tr></table>
8- List of References:	-
a- Course Notes	-
b- Required Books (Textbooks)	Philippe Kruchten, *The Rational Unified Process: An Introduction*, 7th Edition, Addison-Wesley, 2011.
c- Recommended Books	Yingxu Wang, Software Engineering Processes: Principles and Applications, 11th Edition, Addison-Wesley, 2013.

d- Periodicals, Web Sites, ..., etc.	Power point presentations for each course unit delivered by the start of the course.

Course Instructor   **Head of Department**

Name: Name:

Signature: Signature: