OSTIM TECHNICAL UNIVERSITY
FACULTY OF ECONOMICS AND ADMINISTRATIVE SCIENCES
MANAGEMENT INFORMATION SYSTEMS DEPARTMENT
COURSE SYLLABUS FORM

MIS 437 Software Testing							
Course Name	**Course Code**	**Period**	**Hours**	**Application**	**Laboratory**	**Credit**	**ECTS**
Software Testing	MIS 437	1	3	0	0	3	6

Language of Instruction	English
Course Status	Compulsory
Course Level	Bachelor
Learning and Teaching Techniques of the Course	Lecture, Question-Answer, Problem Solving

Course Objective

The aims of this course are to: study of software testing and maintenance methodologies to develop object-oriented, component-based software using the Test Driven approach, present the main theoretical and practical topics for different types of coverage analysis, automatic test case generation, and regression testing, introduce program-based software testing and maintenance approaches.

Learning Outcomes

The students who succeeded in this course will be able;

1. Demonstrate knowledge of quantitative, technical, practical methods that software developers can use to test their software
2. Apply testing techniques and criteria for all phases of software development - unit testing, integration testing, system testing
3. Demonstrate theoretical and practical knowledge of how to apply test criteria to improve the quality of software.
4. Use programming and design practices for ensuring software can be efficiently and effectively tested.
5. Demonstrate understanding that maintainability and test ability are more important for all modern software projects

Course Outline
This course will begin with introduction to overview of the software testing process and software testing techniques and test driven development at an introductory level. This three-week part aims to understand whether the students are ready to take software testing to expand their knowledge. Then, the course will skip to the real part and the test case design, unit testing and web testing will be introduced to make a basis software testing. The week of eight is for the midterm exam. By the ninth week, regression testing, system testing, integration testing, acceptance testing and mobile application testing will be taught .

Weekly Topics and Related Preparation Studies		
Weeks	**Topics**	**Preparation Studies**
1	Introduction	
2	Overview of the Software Testing Process	– Watkins Ch2
3	Software Testing Techniques	– Watkins Ch3
4	Test-Driven Development	– Koskela Ch1-2
5	Test-Case Design	– Amman & Offutt Ch 6-7
6	Unit Testing	– Watkins Ch5
7	Web Testing	– Adzic Ch11
8	**MIDTERM EXAM**	
9	Regression Testing	– Watkins Ch11
10	System Testing	– Watkins Ch7
11	Integration Testing	– Watkins Ch6
12	Acceptance Testing	– Watkins Ch9-10
13	Mobile Application Testing	– Myers et al. Ch11
14	Term Project Presentations	
15	Review, Preparation for the Final Exam	
	FINAL EXAM	

Textbook(s)/References/Materials:
Textbook: John Watkins, Simon Mills, Testing IT: An Off-the-Shelf Software Testing Process, 2nd edition, 2011, Cambridge University Press
Supplementary References: • L. Koskela, Test Driven: TDD and Acceptance TDD for Java Developers. Greenwich, CT: Manning, 2007. • K. Beck, Test Driven Development: By Example, 1st edition. Boston: Addison-Wesley Professional, 2002. • G. J. Myers, C. Sandler, & T. Badgett, The art of software testing. John Wiley & Sons, 2011. • G. Adzic, Test Driven. NET Development with FitNesse, 2008. • P. Amman, J. Offutt, Introduction to Software Testing. Cambridge University Press, 2017.

Assessment		
Studies	**Number**	**Contribution margin (%)**
Attendance		
Lab		
Class participation and performance	**1**	**10**
Field Study		
Course-Specific Internship (if any)		
Quizzes / Studio / Critical		
Homework		
Presentation		
Projects	**1**	**10**
Report		
Seminar		
Midterm Exam/Midterm Jury	**1**	**30**
General Exam / Final Jury	**1**	**50**
Total		**100**
Success Grade Contribution of Semester Studies		**50**
Success Grade Contribution of End of Term		**50**
Total		**100**

ECTS / Workload Table			
Activities	**Number**	**Duration (Hours)**	**Total Workload**
Course hours (Including the exam week): 16 x total course hours)	16	3	48
Laboratory			
Application			
Course-Specific Internship (if any)			
Field Study			
Study Time Out of Class	16	3	48
Presentation / Seminar Preparation		6	6
Projects			
Reports			
Homework			
Quizzes / Studio Review	0	0	0
Preparation Time for Midterm Exams / Midterm Jury	2	20	40
Preparation Period for the Final Exam / General Jury	1	40	40
Total Workload	**(182/30 = 6,07)**		**182**

Course' Contribution Level to Learning Outcomes						
Nu	**Learning Outcomes**	**Contribution Level**				
		1	**2**	**3**	**4**	**5**
LO1	Demonstrate knowledge of quantitative, technical, practical methods that software developers can use to test their software					X
LO2	Apply testing techniques and criteria for all phases of software development - unit testing, integration testing, system testing					X
LO3	Demonstrate theoretical and practical knowledge of how to apply test criteria to improve the quality of software.					X
LO4	Use programming and design practices for ensuring software can be efficiently and effectively tested.					X
LO5	Demonstrate understanding that maintainability and test ability are more important for all modern software projects					X

	Relationship Between Course Learning Outcomes and Program Competencies (Department of Management Information Systems)								
Nu	**Program Competencies**	**Learning Outcomes**							**Total Effect (1-5)**
		LO1	**LO2**	**LO3**	**LO4**	**LO5**	**….**	…	
1	Recognize and distinguish the basic concepts such as data, information, and knowledge in the field of Management Information Systems and know the processes to be followed for data acquisition, storage, updating, and security.	x	x						2
2	Develop and manage databases suitable for collecting, storing, and updating data.			x	x				2
3	As a result of his/her ability to think algorithmically, easily find solutions to the problems concerning the basic business functions.	x	x	x	x	x			5
4	Learn programming logic, have information about current programming languages.			x	x				2
5	Learn programming logic, have information about current programming languages.			x	x				2
6	Be able to take part in teamwork or lead a team using knowledge of project management processes.	x	x	x					3
7	Know ethical and legal rules, use professional field knowledge within the scope of ethical and legal rules.	x	x	x					3
8	Have knowledge in the fundamental areas of business administration namely management and organization, production, finance, marketing, numerical methods, accounting, etc., and have the knowledge and skills to work in-depth in at least one of them.	x	x	x	x	x	x		5
9	Be able to solve the problems encountered in the field of internet programming by designing web applications.	x	x	x	x	x	x		5

10	Develop and manage logistics and supply chain management activities								
11	Adapt his/her theoretical knowledge and the experience he/she will gain through practice at the departments of businesses such as information technologies, R&D, and management to real life.	x	x	x	x	x	x		5
12	Be able to develop strategies that will provide a competitive advantage with his/her advanced knowledge of management strategies and management functions.	x	x	x	x	x	x		5
13	Develop a business idea, commercialize the business idea, and design and manage his/her own venture using entrepreneurial knowledge.	x	x	x	x	x	x		5
14	By using English effectively, they can follow, read, write, speak and communicate universal information in the field of management information systems in a foreign language with professional competence.	x	x	x	x	x	x		5
Total Effect									49

Policies and Procedures
Web page: There is no web site yet.
Exams: The written exams will be multiple-choice and true/false questions.
Missed exams: Any student missing an exam needs to bring an official medical report to be able to take a make-up exam. The medical report must be from a state hospital.
Projects: All students will present a term project presentation and submit a project report. Project teams can be established.
Attendance: Attendance requirements are announced at the beginning of the term. Students are usually expected to attend at least 70% of the classes during each term.
Objections: If the student observes a material error in his/her grade, he/she has the right to place an objection to the Faculty or the Department. The claim is examined and the student is notified about its outcome.