Management Information Systems (English)			
Bachelor	TR-NQF-HE: Level 6	QF-EHEA: First Cycle	EQF-LLL: Level 6

Course Introduction and Application Information

Course Code:	MIS044
Course Name:	Software Quality and Testing
Semester:	Fall
Course Credits:	ECTS 5
Language of instruction:	English
Course Condition:	
Does the Course Require Work Experience?:	No
Type of course:	Departmental Elective
Course Level:	Bachelor / TR-NQF-HE:6. Master`s Degree / QF-EHEA:First Cycle / EQF-LLL:6. Master`s Degree
Mode of Delivery:	E-Learning
Course Coordinator:	Doç. Dr. ATINÇ YILMAZ
Course Lecturer(s):	Atınç Yılmaz
Course Assistants:	

Course Objective and Content

Course Objectives:	1. To understand the principles and concepts of software quality assurance and testing.
	2. To learn various software testing techniques and methodologies.
	3. To develop skills in designing and executing test cases.
	4. To comprehend the importance of software quality metrics and measurement.
	5. To gain knowledge of quality management systems and their application in software development.

Course Content:	1. Introduction to Software Quality Assurance
	2. Software Testing Fundamentals
	3. Test Design Techniques
	4. Test Execution and Management
	5. Test Automation
	6. Software Quality Metrics
	7. Quality Management Systems

Learning Outcomes

The students who have succeeded in this course;

1) Explaining the fundamental concepts and principles of software quality assurance and testing.

2) Applying various testing techniques to design and execute test cases.

3) Evaluating and select appropriate test automation tools for different scenarios.

4) Analyzing software quality metrics and use them to measure and improve software quality.

5) Understanding the importance of quality management systems in software development and apply relevant frameworks.

Course Flow Plan

Week	Subject	Related Preparation
1)	Introduction to Software Quality Assurance and Quality Attributes	
2)	Software Testing Fundamentals and Test Planning.	
3)	Black-box Testing Techniques.	
4)	White-box Testing Techniques and Test Case Design.	
5)	Test Execution and Defect Management.	
6)	Test Documentation and Test Data Management.	
7)	Test Automation Introduction and Tool Selection.	
8)	Midterm	
9)	Test Automation Frameworks and Scripting.	
10)	Software Quality Metrics and Measurement.	
11)	Code Coverage and Test Effectiveness.	
12)	Introduction to Quality Management Systems.	
13)	Process Improvement Frameworks (Six Sigma, Lean).	

14)	Quality Assurance in Agile Development.					
15)	Reviewing and Practice.					
16)	Final					

Sources

Course Notes / Textbooks:	1. "Software Testing: Principles and Practices" by Srinivasan Desikan and Gopalaswamy Ramesh 2. "Foundations of Software Testing" by Dorothy Graham, Erik van Veenendaal, and Isabel Evans
References:	1. "Introduction to Software Testing" by Jeff Offutt 2. "The Art of Software Testing" by Glenford J. Myers, Corey Sandler, and Tom Badgett

Course - Program Learning Outcome Relationship

Course Learning Outcomes	1	2	3	4	5
Program Outcomes					
1) It has a wide range of interdisciplinary approaches to management information systems, primarily business and computer engineering.	2	3	3	3	3
2) Comprehends the management information systems in terms of technical, organizational and managerial aspects and uses the current programming language by knowing the logic of programming.	3	2	2	3	3
3) Uses different information technologies and systems for understanding and solving various business problems.	3	3	3	2	2
4) Interpret the data, concepts and ideas in the field of management information systems with scientific and technological methods.	2	3	3	3	3
5) Analyze the needs for an information system and analyze the processes of analysis, design and implementation of the database.	2	2	2	3	3
6) Gains technical and managerial contributions to IT projects and takes responsibility.	3	2	3	3	2
7) Solve complex business and informatics problems by using various statistical techniques and numerical methods and make analyzes using statistical programs effectively.	3	2	3	2	3
8) Uses a foreign language at the B1 General Level in terms of European Language Portfolio criteria according to the level of education.	3	2	2	3	3

Course Learning Outcomes	1 2	2 2	3 2	4 3	5 3
9) Develops teamwork, negotiation, leadership and entrepreneurship skills.					
10) Has universal ethical values, social responsibility awareness and sufficient legal knowledge.	3	3	3	3	3
11) Develops positive attitudes related to lifelong learning and identifies individual learning needs and carries out studies to correct them.	2	3	2	3	2
12) Students will be able to communicate their ideas and solutions both written and orally, and present and publish them on both national and international platforms.	3	2	2	2	2
13) It uses information and communication technologies together with computer software at the advanced level of European Computer Driving License required by the field.	2	3	3	2	2

Course - Learning Outcome Relationship

No Effect	1 Lowest	2 Average	3 Highest

	Program Outcomes	Level of Contribution
1)	It has a wide range of interdisciplinary approaches to management information systems, primarily business and computer engineering.	3
2)	Comprehends the management information systems in terms of technical, organizational and managerial aspects and uses the current programming language by knowing the logic of programming.	2
3)	Uses different information technologies and systems for understanding and solving various business problems.	2
4)	Interpret the data, concepts and ideas in the field of management information systems with scientific and technological methods.	2
5)	Analyze the needs for an information system and analyze the processes of analysis, design and implementation of the database.	3
6)	Gains technical and managerial contributions to IT projects and takes responsibility.	2
7)	Solve complex business and informatics problems by using various statistical techniques and numerical methods and make analyzes using statistical programs effectively.	2
8)	Uses a foreign language at the B1 General Level in terms of European Language Portfolio	3

	criteria according to the level of education.	
9)	Develops teamwork, negotiation, leadership and entrepreneurship skills.	2
10)	Has universal ethical values, social responsibility awareness and sufficient legal knowledge.	2
11)	Develops positive attitudes related to lifelong learning and identifies individual learning needs and carries out studies to correct them.	3
12)	Students will be able to communicate their ideas and solutions both written and orally, and present and publish them on both national and international platforms.	3
13)	It uses information and communication technologies together with computer software at the advanced level of European Computer Driving License required by the field.	2

Assessment & Grading

Semester Requirements	Number of Activities	Level of Contribution
Midterms	1	% 40
Final	1	% 60
total		**% 100**
PERCENTAGE OF SEMESTER WORK		% 40
PERCENTAGE OF FINAL WORK		% 60
total		**% 100**

Workload and ECTS Credit Calculation

Activities	Number of Activities	Preparation for the Activity	Spent for the Activity Itself	Completing the Activity Requirements	Workload
Course Hours	14	2	3		70
Midterms	1	20	2		22
Final	1	30	3		33
Total Workload					**125**