

COURSE INFORMATION					
Course Title	Code	Semester	L+P Hour	Credits	ECTS
Software Testing and Quality Assurance	CIS 519		3+0+0	3	10

Prerequisites

Language of Instruction	English
Course Level	Bachelor's Degree
Course Type	Departmental Elective
Course Coordinator	Assist. Prof. Engin Kandiran
Instructors	Assist. Prof. Engin Kandiran
Assistants	Staff
Goals	The aim and objective of this course is to teach students the concepts and skills needed for SQA and Testing. Software quality assurance (SQA or simply QA) is viewed as an activity that runs through the entire development process.
Content	Quality Assurance & Review Techniques, Defect Prevention and Removal, Testing Strategies, Testing Conventional and Object Oriented Applications Techniques, Acquaintance to Formal Modeling and Verification methods

Learning Outcomes	Program Learning Outcomes	Teaching Methods	Assessment Methods
Understand general concepts about quality, quality assurance (QA), and software quality engineering (SQE)	6	1,4	A,B,C
Choose appropriate testing strategies and develop test cases	6,9,8	1,2,3,4	B,C
Create control flow and data flow testing by using both control flow (graphs) and data flow diagrams respectively and hence getting a clear insight between control flow and data flow testing.	6	1,2,3,4	A,B,D

Teaching Methods:	1: Lecture, 2: Question-Answer, 3: Discussion, 4: Lab Work
Assessment Methods:	A: Testing, B: Laboratory C: Homework D: Project

COURSE CONTENT		
Week	Topics	Study Materials
1	Quality Management	Lecture Notes
2	Software Defects and Review Techniques	Lecture Notes
3	Software Quality Assurance	Lecture Notes
4	Software Testing Strategies	Lecture Notes
5	Testing Strategies for Conventional Softwares	Lecture Notes
6	System Testing	Lecture Notes
7	MIDTERM EXAMINATION	
8	Testing Conventional Applications	Lecture Notes
9	Testing Object Oriented Applications	Lecture Notes
10	Testing Web Applications	Lecture Notes
11	Formal Modeling and Verification	Lecture Notes
12	Project Presentations	Lecture Notes
13	Final Examination	

RECOMMENDED SOURCES	
Textbook	<i>Software Engineering - A Practitioner's Approach (7th edition) by Roger S. Pressman. ISBN 13. 9780073375977.</i>
Additional Resources	Software Testing and Quality Assurance : Theory and Practice by Kshirasagar Naik, Priyadarshi

MATERIAL SHARING	
Documents	Presentations and Laboratory Sheets
Assignments	Homework Sheets
Exams	Old exam questions

ASSESSMENT

IN-TERM STUDIES	NUMBER	PERCENTAGE
Mid-terms	1	50
Projects	1	50
	Total	100
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE		40
CONTRIBUTION OF IN-TERM STUDIES TO OVERALL GRADE		60
	Total	100

COURSE CATEGORY	Expertise/Field Courses
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COURSE'S CONTRIBUTION TO PROGRAM						
No	Program Learning Outcomes	Contribution				
		1	2	3	4	5
1	Software Development graduates have the knowledge and the skills to design and develop the complete systems for multi-media visual user interface.					
2	Software Development graduates have advanced the knowledge and skills to design, develop and install the application systems for multi-media.		X			
3	Software Development graduates have the knowledge and the skills to design, develop and apply algorithms and data structures to solve the basic problems of information processing, within the framework of discrete mathematics.					X
4	Software Development graduates have the knowledge and the skills to design and develop computer applications, based on user specified requirements, using modern structured development tools and install them on various hardware platforms and deploy their usage.					X
5	Software Development graduates have the knowledge and the skills to design and develop computer applications, based on user specified requirements, using modern object-oriented development tools and install them on various hardware platforms and deploy their usage(ACM 321).					X
6	Software Development graduates know the logic of computer operating systems, the basic set of system commands, how to control access to system resources by users of different departments and how to monitor the running of jobs in the system.					X
7	Software Development graduates have the knowledge and the skills to design and develop data models serving different requirements, database applications that would access and process data using various types of software, including queries, reports and business applications.					X
8	Software Development graduates have the knowledge and the skills to design and develop business applications that would provide data access, modification and processing for data kept in enterprise database systems .					X

9	Software Development graduates have the knowledge about computer networks, and have the skills to design, develop and monitor computer networks, how to configure them and how to maintain their performance.	X
10	Software Development graduates have the knowledge and the skills to design and develop visual user interfaces for the web, web-based applications for n-tier client/server configurations, how to deploy them in enterprises.	x

ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION			
Activities	Quantity	Duration (Hour)	Total Workload (Hour)
Course Duration (Including the exam week: 13x Total course hours)	13	3	39
Hours for off-the-classroom study (Pre-study, practice)	14	4	56
Mid-terms	1	5	5
Homeworks	3	35	105
Project	1	30	30
Final examination	1	5	5
Total Work Load			240
Total Work Load / 25 (h)			9,60
ECTS Credit of the Course			10