COURSE UNIT DESCRIPTION

Course unit title	Code
TESTING AND QUALITY ASSUARANCE OF INFORMATION SYSTEMS	

Annotation

Lecturer(s)	Department, Faculty
Coordinating: Lect. Jurgita Lasytė **Other:**	Kaunas Faculty Institute of Social Sciences and Applied Informatics

Study cycle	Type of the course unit
Bachelor	Compulsory or Individual Studies

Mode of delivery	Semester or period when it is delivered	Language of instruction
Auditorium	6	EN

Requisites	
Prerequisites: None	**Co-requisites (if relevant):**

Number of ECTS credits allocated	Student's workload (total)	Contact hours	Individual work
5	130	52	78

Purpose of the course unit: programme competences to be developed		
To develop the ability to understand and analyse theoretical and practical knowledge of software systems testing; the ability to understand and apply software testing methods, types, techniques, the ability to explain the execution process; the ability to apply basic testing and quality assurance tools.		
Learning outcomes of the course unit	**Teaching and learning methods**	**Assessment methods**
Will be able to independently create test cases, properly document the testing process.	Lectures, Labs, Individual work active learning methods (group discussion; situation analysis) individual homework	Labs, Midterm exam, Final exam (in written form)
Will be able to design and implement tests for component testing, component and system integration testing, regression testing, acceptance testing, alpha, beta testing, performance testing, stability testing, usability testing, security testing, internationalization and localization testing.		
Will be able to apply automated testing tools in the testing process.		

Course content: breakdown of the topics	Contact hours							Individual work: time and assignments	
	Lectures	Consultation	Exam	Workshops	Laboratory work	Internship/work placement	**Contact hours, total**	**Individual work**	**Assignments**
1. Software testing methods. Testing principles. Testing process. Manual testing. Automated testing	2				2		4	4	Practical testing tasks and labs
2. Test cases. Their content, compilation strategies. Tests, test sets.	2				6		8	15	Midterm exam
3. Types of software testing. Black Box Functional, Performance,Usability, Regression, Smoke, Parallel, Recovery, Installation, Compatibility, Configuration .Configuration), Compliance, Error-Handling, User Interface, System, User Acceptance, White Box, individual software modules (Unit), security (Security), Mutation tests.	2				2		4	13	Familiarize with test automating tools for UI, API, performance
4. Test documentation. TC, defect descriptions. Testing vision, strategy, plan, testing tools. TC control tools, defect management tools, automatic testing tools, TC generators.	2				8		10	15	
5. Specification based techniques. Structure-based techniques. Experience-based techniques.	2				4		6	10	
6. Software testing techniques and strategies. Static testing techniques. Dynamic testing techniques.	2				4		6	10	
7. Testing team. Roles, their properties. Measuring the effectiveness of an organizational structure tester. Test management. Planning, monitoring and managing progress.	2				4		6	10	
8. Quality assurance. Agile testing	2				2		2		
Consultation		2					**2**		
Exam			2				**2**		
Total	**16**	**2**	**2**		**32**		**52**	**78**	

Assessment strategy	Weight %	Deadline	Assessment criteria
Midterm Exam (K)	20	9 or 10 week	Theoretical knowledge of lectures 1–4 is assessed. The colloquium consists of 10 questions from the theoretical material presented in topics 1-4. The colloquium is in test form, 10 point scale, the answers to each question are evaluated according to 20% of the final evaluation of the colloquium.
Lab Work No.1 (LD1)	20	8th week	Evaluation criteria: number of performed laboratory tasks, validity of the conclusions of the performed tasks, quality of the job description and compliance with the requirements of the task. Each task has the same weight, i. after 20% of the overall assessment.
Lab Work No.2 (LD2)	20	Till 12th week	
Exam (E)	40	During the session	The exam includes theoretical and practical material of the whole subject, assessment on a 10-point scale according to VU assessment criteria. During the exam, 10 test questions are given. The answers to the exam questions are evaluated proportionally (10% each).
Final Grade: LD1*0,2+K*0,2+LD2*0,2+E*0,4=1			

Author	Publishing year	Title	Issue of a periodical or volume of a publication; pages	Publishing house or internet site
Required reading				
James D. McCaffrey	2009	Software Testing: Fundamental Principles and Essential Knowledge		BookSurge Publishing.
Rex Black	2015	Advanced Software Testing - Vol. 1 (2nd Edition): Guide to the ISTQB Advanced Certification as an Advanced Test Analyst (2nd Edition)		Rocky Nook
Angelina Samaroo	2015	Software Testing: An ISTQB-BCS Certified Tester Foundation Guide (3rd Edition)		BCS
James A. Whittaker	2012	How Google Tests Software (1st Edition)		Addison-Wesley Professional.
Kshirasagar Naik	2008	Software Testing and Quality Assurance: Theory and Practice (1st Edition)		Wiley-Spektrum. Prieiga: https://books.google.lt/books?id=neWaoJKSkvgC&pg=PT14&lpg=PT14&dq=software+testing+and+quality+assurance+book&source=bl&ots=_cqjQFxUgs&sig=eH0Bpos8sA_52b8eby5L3US-Irk&hl=lt&sa=X&ved=0ahUKEwjuteLdgdTKAhXj73IKHc2hCXI4ChDoAQgxMAM#v=onepage&q=software%20testing%20and%20quality%20assurance%20book&f=false