



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

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 analyze 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. Manual testing. Automated testing	2				2		4	4	Practical tasks: the first manual testing task
2. Test cases. Their content, compilation strategies. Tests, test sets.	2				4		6	6	Practical tasks: creating of test cases
3. Types of software testing. 4. Black Boxes 5. Functional, Performance, 6. 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.	4				6		10	18	Practical tasks: – description of defects – Application of static testing technique (s) – performing manual testing tasks
7. Specification based techniques. Structure-based techniques. Experience-based techniques.	2				4		6	10	Labs
8. Software testing techniques and strategies. Static testing techniques. Dynamic testing techniques.	2				4		6	10	Midterm exam
9. 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	20	Practical tasks: creating of test plan
10. Testing team. Roles, their properties. Measuring the effectiveness of an organizational structure tester. Test management. Planning, monitoring and managing progress.	2				4		6	10	Practical tasks: automation tools and automated tests writing
Consultation		2					2		
Exam			2				2		
Total	16	2	2		32		52	78	

Assessment strategy	Weight %	Deadline	Assessment criteria
Midterm Exam (K)	20	8th or 9th week	Theoretical knowledge of topics 1–7 is assessed. The colloquium consists of 10 questions from the theoretical material presented in topics 1-7. The colloquium is written form, the answers to each question are evaluated according to 10% 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 14th 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 questions are given, to which the examinee must answer in writing, giving theoretical answers, as well as practically illustrating them with examples that correspond to the given question. 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=_cqjQFxFxUgs&sig=eH0Bpos8sA_52b8eby5L3US-Irk&hl=lt&sa=X&ved=0ahUKEwjuteLdgdTKAhXj73IKHc2hCXI4ChDoAQgxmAM#v=onepage&q=software%20testing%20and%20quality%20assurance%20book&f=false