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| **Course unit title** | **SOFTWARE TESTING** |
| **Course unit code** | DatZ6011 |
| **Type of course unit** | A part – Compulsory part |
| **Level of course unit** | 2nd cycle (Master) |
| **Year of study** | - |
| **Semester** | II |
| **Number of ECTS credits** | 3 |
| **Name of lecturer(s)** | Anita Jansone, Dr.sc.comp. |
| **Learning outcomes of the course unit** | **Aims of the course**  To master principles and methods of testing software. To give understanding about basic principles and methods of software testing  **Objectives of the course**  To master basic principles of software testing and to acquaint with testing methods and documentation.  **Results of the course (competences to be developed)**  Students have to master skills and abilities in planning testing process, choosing testing strategy, choosing and elaborating corresponding documentation. |
| **Mode of delivery** | Face-to-face |
| **Prerequisites and co-requisites** | Software engineering,  Total Quality Management |
| **Recommended optional programme components** | - |
| **Course contents** | In course theoretical part students acquire the most important principles for insurance of testing and quality: theory and history of testing; testing stages: item test, system test, accept test etc.; demands based testing; documentation of testing; regress testing, tests saving, encore of tests; overview of testing tools;  In practical part of the course students prepare and present report about current events of software testing, methods or specific tools for software testing. To work out and present full cycle (process) of testing accordingly to course materials of hypothetical software testing. To work out a software testing plan. |
| **Course plan** | |  |  | | --- | --- | | **Theme** | **Sub-theme** | | 1. Overview on history and theory of testing | Theories and history of testing;  testing stages: item test, system test, accept test, acceptance test etc.; | | 2. Process of testing | Process of testing: roles and responsibility, inputs for information testing, outputs for information testing, documentation to be prepared, control of testing process. | | 3. Methods of testing | Methods of testing: testing of white box ( paths testing,  step-by-step testing), testing of black box, structural testing, functional testing etc. | | 4. Test cases. | Choice of test cases, strategy of testing, structure of test cases. | | 5. Documentation of testing | Specification of test cases, specification of tests designing, specification of testing procedure, testing log, testing docket of item, reports of test problems, overview of test summary, plan of testing. | | 6. Process of mistake's processing | Documentation, observation and examples of mistakes. Management tools. | | 7. Traceability | Trace ability’s role in testing process and ensuring quality, examples. Management tools. | | 8. Current events of testing | Seminar about current testing themes ( by lecturer choice) | | 8. Current events of testing | Presentation of students prepared reports | | 9. Current events of testing | Presentation of students prepared testing plan | |
| **Recommended or required reading** | Pressman, R.S. (1992) Software Engineering. Practitioner’s Approach. Third Edition. McGraw-Hill Inc.  William E Lewis (2004) Software Testing and Continuous Quality Improvement, Second Edition. CRC Press  William E.Perry. Effective Methods for Software Testing. Third edition. 2006, ISBN:978-0-7645-9837-1  Farrell-Vinay, Peter [Manage Software Testing](http://alise.liepu.lv/Alise/lv/book.aspx?id=22208)  Auerbach Publications, 2008. xxiii, 573 p.  DiMarzio, J. F. [The Debugger’s Handbook](http://alise.liepu.lv/Alise/lv/book.aspx?id=23413)  Auerbach Publications, 2006. xxiii, 458 p  Kandt, Ronald Kirk [Software Engineering Quality Practices](http://alise.liepu.lv/Alise/lv/book.aspx?id=19678)  Auerbach Publications, 2006. xxii, 256 lpp. |
| **Planned learning activities and teaching methods** | Lectures, seminars, student's individual work |
| **Assessment methods and criteria** | Plan of software testing and its presentation.  Prepared and presented report about chosen theme. |
| **Language of instruction** | English |
| **Work placement(s)** | N/a |