STUDENT AND ACADEMIC SERVICES

MODULE SPECIFICATION

Part 1: Information			
Module Title	Software Engineering [TSI]		
Module Code	UFCFVX-18-2	Level	Level 5
For implementation from	2022-23		
UWE Credit Rating	18	ECTS Credit Rating	9
Faculty	Faculty of Environment & Technology	Field	Computer Science and Creative Technologies
Department	FET Dept of Computer Sci & Creative Tech		
Module Type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co-requisites	None		
Module Entry Requirements	None		
PSRB Requirements	None		

Part 2: Description
Educational Aims: The aim of this module is training in the principles and methods used at various stages of software development of complex computer systems, as well as training in the organization of software development processes. **Outline Syllabus:** 1st term: Models of software development process; Project management and project metrics; Estimation during the project management; Basics of software design; The basics of object-oriented view of software systems; Creating a software product requirements model; Behaviour diagrams of program system; Architectural design; Detailed design; Component-oriented development; The development process of the object-oriented software system; Assessment of the object-oriented software quality; Agile software development;

2nd term:
Basic concepts of testing;
Software Structural Testing Techniques;
Methods of Functional testing;
The organization of the software testing process;
Debugging;
Features of object-oriented testing;
Software Testing Standard;
Test automation. DevOps;
Test-Driven Development (TDD);

Teaching and Learning Methods: Learning and teaching will be provided to students in two forms: lectures and labs. During lectures, theoretical aspects of the course will be provided to students by the teaching staff. Lectures will be supported by presentation published and available to the students on e.tsi.lv under the module section. Also, additional materials, like code examples, text books, publications on the internet, videos etc will be presented in e.tsi.lv.

During labs, each student receives an individual task to perform.

Integrated development environment (IDE) from Microsoft for .Net framework such as Visual Studio will be used for labs as well as IBM Rational Software (as example). In addition to learning activities during the face-to-face lessons, students must spend time outside the classroom on independent learning activities. These might include completing assignment tasks, independent reading, practising new skills on personal projects, watching informative videos, completing self-assessment test etc.

Part 3: Assessment

This module assessment is split into two components (A – Exam, B – Labs):
A1 - Final 3-hour examination which will assess the students understanding of taught material that forms part of the learning outcomes but cannot easily be assessed through practical tasks.
B1 - A series of in-class tests, assessing students progress.
B2 –A series of practical tasks (labs).

First Sit Components	Final Assessment	Element weighting	Description
Examination - Component A	✓	25 %	Written Examination
Portfolio - Component B		50 %	A Series of practical tasks each with a written report
In-class test - Component B		25 %	A series of in-class tests, assessing students progress.
Resit Components	Final Assessment	Element weighting	Description
Examination - Component A		25 %	Written Examination
Portfolio - Component B		50 %	A Series of practical tasks, each with a written report.
In-class test - Component B		25 %	A series of in-class tests, assessing students progress.

Part 4: Teaching and Learning Methods

Learning Outcomes	On successful completion of this module students will achieve the following learning outcomes:	
	Module Learning Outcomes	**Reference**
	Know and use the principles and methods of analysis, design, testing and maintenance of software products	MO1
	Know and apply the methods and means of software project management, quantitative estimation of the software	MO2
	Plan the work on a software project; lead independent development and estimation of quality of software product; provide support for the software product	MO3
	Understand boundaries of various software engineering processes, including understanding the SE trends, opening as far as progress in area of computer science and technologies; be able to use scientifically methodical fundamentals and standards in the domain of SE	MO4
	Implement methods and facilities supporting teamwork, planning and effective organization of software development	MO5
	Describe the principles of Software testing with specific of object-oriented development	MO6
	Apply the concepts of different testing strategies to large-scale software	MO7
	Acquire the concepts of functional and structural testing	MO8
	Design and develop test cases with object-oriented specific	MO9
	Formulate OOP testing problems as steps to be solved systematically	MO10
	Integrate testing and testing automation into large-scale software development	MO11
	Develop OO software with testing teamwork in mind	MO12

Contact Hours	**Independent Study Hours:**	
	Independent study/self-guided study	144
	Total Independent Study Hours:	144
	Scheduled Learning and Teaching Hours:	
	Face-to-face learning	102
	Total Scheduled Learning and Teaching Hours:	102
	Hours to be allocated	180
	Allocated Hours	246

Reading List	*The reading list for this module can be accessed via the following link:* https://rl.talis.com/3/uwe/lists/116D8907-B765-6A8F-C0D5-EDA1551C2740.html?lang=en-gb&login=1

Part 5: Contributes Towards

This module contributes towards the following programmes of study:

Computer Science and Software Development [Oct][FT][TSI][4yrs] BSc (Hons) 2020-21

Computer Science and Software Development [Feb][FT][TSI][4yrs] BSc (Hons) 2020-21