



## MODULE DESCRIPTION

Module title	Module code
CASE method	

Lecturer(s)	Department where the module is delivered
<b>Coordinator:</b> dr. Elita Pakalnickenė	Department of Software Engineering Faculty of Mathematics and Informatics Vilnius University
<b>Other lecturers:</b>	

Cycle	Type of the module
First	Optional

Mode of delivery	Semester or period when the module is delivered	Language of instruction
Face-to-face	7 <sup>th</sup> semester	Lithuanian

Prerequisites
<b>Prerequisites:</b> Software Engineering I and II.

Number of credits allocated	Student's workload	Contact hours	Self-study hours
5	130	66	64

Purpose of the module: programme competences to be developed
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Purpose of the module – to acquire knowledge of software engineering process, implemented in CASE tools. To learn how to use CASE system for requirements specification, system design, testing and implementation.

**Generic competences:**

- Communication and collaboration (*GK1*).
- Life-long learning (*GK2*).

**Specific competences:**

- Knowledge and skills of underlying conceptual basis (*SK4*).
- Software development knowledge and skills (*SK5*).
- Technological and methodological knowledge and skills, professional competence (*SK6*).

Learning outcomes of the module: students will be able to	Teaching and learning methods	Assessment methods
Understand CASE concepts, principals and functions.	Lectures, problem-oriented teaching, case studies, literary reading, individual work, individual work, example studies, consultations, laboratory work.	Laboratory works and results presentation, written exam (close-ended questions).
Analyze problem, identify the needs and formulate, document and manage software requirements.		
Design and implement information system with particular CASE tool.		
Understand software engineering process and principles, to get involved with other CASE tools.		
Model business, real-world processes and data flows. Choose and use suitable methods and tools for solving problems in practice.		

Content: breakdown of the topics	Contact hours						Self-study work: time and assignments		Assignments
	Lectures	Tutorials	Seminars	Practice	Laboratory work (LW)	Tutorial during LW	Contact hours	Self-study hours	
Application's life-cycle. System engineering. CASE definition.	2				2		4	3	Self-study of literature, self-preparation for 1 <sup>st</sup> laboratory work
Case environment and integration to information system development process.	2				2	2	4	3	
CASE systems architecture.	4				4		8	8	
CASE functions. Information systems engineering. Business modeling.	4				4		8	6	Self-study of literature, self-preparation for 2 <sup>nd</sup> laboratory work
Risk analysis, Requirements traceability. Metrics and management.	4				4	2	8	6	
Documentation. Quality management. DB management.	4				4		8	6	
Analysis and design. Configuration management.	4				4		8	10	
Prototyping and simulation. User interface design. Coding, integration and testing.	4				4		8	12	Self-study of literature, self-preparation for 3 <sup>rd</sup> laboratory work
Reengineering.	4				4	2	8	10	
Final exam (written).							2		2 hours for exam
<b>Total</b>	<b>32</b>				<b>32</b>	<b>6</b>	<b>66</b>	<b>64</b>	

Assessment strategy	Weight %	Deadline	Assessment criteria
1 <sup>st</sup> laboratory work	20%	7 <sup>th</sup> week of semester	<p>Student has to execute requirements analysis and to create software requirements specification. Structure of software requirements specification document:</p> <ul style="list-style-type: none"> <li>- system overview;</li> <li>- purpose;</li> <li>- description current and future status of business domain;</li> <li>- functional requirements;</li> <li>- relations of information, which joins business processes;</li> <li>- processes of data processing;</li> </ul> <p>For software specification description student can use UCM, ERD or DFD notations. (2 points). The penalty for exceeding the deadline is 20% for each delayed week.</p>
2 <sup>nd</sup> laboratory work	25%	12 <sup>th</sup> week of semester	<p>Student, using CASE tools environment, should create project of information system. Project of information system contains:</p> <ul style="list-style-type: none"> <li>- description of IS architecture, main features and requirements, which should be implemented;</li> <li>- data flows of information system, its interdependency;</li> <li>- conceptual model of business domain;</li> <li>- detailed description of modules;</li> <li>- requirements for testing and operation</li> </ul> <p>(2.5 points). The penalty for exceeding the deadline is 20% for each delayed week.</p>
3 <sup>rd</sup> laboratory work	25%	The last week of semester	<p>Student should model functionality of information system in CASE tools environment, to generate prototype of information system and to test functionality of prototype. Create 3-5</p>

			improvements of information system project and to implement those improvements to re-newed IS prototype (2.5 points). The penalty for exceeding the deadline is 20% for each delayed week.
Exam (written)	30%	Exam session	For the right to take the exam student must get assessment of all three laboratory works. Written exam consists of 10 close-ended questions each of them is assessed between 0 and 0.3 points. Maximum can be collected 3 points.

Author	Publis hing year	Title	Number or volume	Publisher or URL
<b>Required reading</b>				
Ian Sommerville	2010	Software Engineering	9	Addison-Wesley
Karl Wiegers	2003	Software Requirements	2	Microsoft Press
Richard Barker	1990	CASE*Method: Entity Relationship Modelling	1	Addison-Wesley Professional
Hassan Gomaa	2011	Software Modeling and Design: UML, Use Cases, Patterns, and Software Architectures	1	Cambridge University Press
<b>Recommended reading</b>				
Richard Barker	1990	CASE*Method: Tasks and Deliverables	1	Addison-Wesley Professional
Linda Hickman	1994	CASE*Method: Business Interviewing	2	Addison-Wesley Professional
Richard Barker	1994	CASE*Method: Fast-track: A RAD Approach	1	Addison-Wesley Professional
H.A.Muller, R.J.Norman and J.Slonim	1996	Computer Aided Software Engineering		Springer
R.S.Pressman	1997	Software Engineering: Practitioner's approach	4	McGraw-Hill
Richard Barker	1992	CASE*Method: Function and Process Modelling	1	Addison-Wesley Professional