



### COURSE UNIT (MODULE) DESCRIPTION

Course unit (module) title	Code
<b>CREATION OF INFORMATION SYSTEMS ON THE BASIS OF TEAM WORK</b>	

Academic staff	Core academic unit(s)
<b>Coordinating: Dr. Dovilė Balevičienė</b> <b>Other:</b>	Kaunas faculty Institute of Social Sciences and Applied Informatics

Study cycle	Type of the course unit
First <input checked="" type="checkbox"/> Second <input type="checkbox"/>	Compulsory Course <input checked="" type="checkbox"/> Optional Course <input type="checkbox"/> Course Unit (Module) of the General University Studies <input type="checkbox"/> Course Unit (Module) of Individual Studies <input checked="" type="checkbox"/> Interdisciplinary Studies Course Unit (Module) <input type="checkbox"/>

Mode of delivery	Semester or period when it is delivered	Language of instruction
Classroom, virtual	4	Lithuanian, English

Requisites	
<b>Prerequisites:</b>	<b>Co-requisites (if relevant):</b>

Number of ECTS credits allocated	Student's workload (total)	Contact hours	Individual work
5	130	48	82

Purpose of the course unit
To provide theoretical and practical knowledge on the development of information systems based on teamwork and project work; to develop the ability to initiate, plan, implement, control, monitor, and complete information systems projects; to foster the ability to identify and solve problems that arise in the development of information systems and project management, as well as to understand their evaluation aspects.

Learning outcomes of the course unit	Teaching and learning methods	Assessment methods
Will understand the latest concepts and methods in project management. Will comprehend the peculiarities and process of developing of information system based on project management. Will know the latest concepts and methods in teamwork and project management. Will understand the specific characteristics of information systems development based on teamwork. Will comprehend the process of information systems development grounded in project management.	Project-based learning. Problem-based teaching, demonstration, active learning methods (group discussions), investigative methods (information search, case analysis, preparation of group written work).	Project-based learning group paper, midterm exam, final exam.

Will be able to carry out project activities based on teamwork in organizations, identify and creatively solve problems arising in information technology development. Will be able to find, collect, and analyze the data needed to solve problems in information technology development and projects, and publicly present the conducted research.	Project-based learning. Problem-based teaching, demonstration, active learning methods (group discussions), investigative methods (information search, case analysis, preparation of group written work).	Project-based learning group paper, midterm exam, final exam.
Will understand the knowledge areas, processes, and management principles of teamwork and project management, and will be able to apply them in the initiation (idea and concept analysis), planning, implementation, monitoring, control, and completion of information systems projects.	Project-based learning. Problem-based teaching, demonstration, active learning methods (group discussions), investigative methods (information search, case analysis, preparation of group written work).	Project-based learning group paper, midterm exam, final exam.

Content	Contact hours							Individual work: time and assignments	
	Lectures	Tutorials	Seminars	Workshops	Laboratory work	Internship	Contact hours, total	Individual work	Tasks for individual work
1. <b>The concept, characteristics, and types of teamwork and information systems projects.</b> The latest theories and concepts in teamwork and project management.	4						4		
2. <b>Methodologies for managing project-based teamwork.</b> Agile, Waterfall, PMBoK, PRINCE2, ISO, Hermes, V-model, IPMA competence baseline, AACE, capability maturity model, and other methodologies. Processes for project initiation, planning, implementation, and evaluation, as well as knowledge areas of project management.	4						4		
3. <b>PMBoK project management methodology: Project integration and scope management.</b> <i>Project initiation:</i> Information system idea generation, defining project requirements. <i>Project planning:</i> Developing project management plan, creating Work Breakdown Structure (WBS). <i>Project control:</i> Verifying and controlling project scope, integrated change control management. Case analysis of McDonald's and Olympic Games projects.	2		2				4	10	Project-based learning group paper and Microsoft Project tasks. Topic: project integration and scope. Kleinaltenkamp, Plinke, Geiger (2016) p.277-354. Project Management Institute (2021) p.105-133.
4. <b>PMBoK project management methodology: Project time management.</b> <i>Project planning:</i> Defining project activities, estimating activity durations, creating a schedule (Gantt chart, Critical	2		2				4	10	Project-based learning group paper and Microsoft Project tasks. Topic: time management. Schwalbe (2016)

Path Method, etc.) using various software tools. <i>Project control:</i> Monitoring the project schedule.									p.221-261. Project Management Institute (2021) p.141-190.	
<b>5. PMBoK project management methodology: Cost and procurement management.</b> <i>Project planning:</i> Cost estimation, developing the project budget and financing specifics, procurement planning. <i>Project implementation:</i> Cost and procurement management using various software tools. <i>Project control:</i> Cost and procurement control. <i>Project closure:</i> Procurement closure. Delivering the project to the client.	2		2					<b>4</b>	<b>10</b>	Project-based learning group paper and Microsoft Project tasks. Topic: cost management. Schwalbe (2016) p.263-298.
<b>6. PMBoK project management methodology: Human resources, communication, and stakeholder management.</b> <i>Project planning:</i> Human resource planning, stakeholder identification, stakeholder engagement planning, communication planning using modern technologies, selection of marketing communication tools, virtual communication planning. <i>Project implementation:</i> Team selection, team development and management, stakeholder management (engagement), internal and external communication management using various software tools. <i>Project control:</i> Monitoring of internal and external communication, control and monitoring of stakeholder management (engagement), data extraction, analysis, and control. Case analysis of the O.B. AI project.	4		2					<b>6</b>	<b>10</b>	Project-based learning group paper and Microsoft Project tasks. Topic: human resource and communication management. Schwalbe (2016) p.343-388. Project Management Institute (2021) p.287-307.
<b>8. PMBoK project management methodology: Quality and risk management.</b> <i>Project planning:</i> Quality planning. <i>Project control:</i> Quality assurance and control. Risk identification, qualitative and quantitative analysis methods, preparation of risk response plans. <i>Project control:</i> Risk monitoring and control.	2							<b>2</b>		
<b>9. Agile project management methodology.</b> Agile manifesto. Characteristics of Agile project management. Integration of Agile and Waterfall project management methodologies.	2		2					<b>4</b>	<b>10</b>	Project-based learning group paper. Topic: quality management. Schwalbe (2016) p.300-342.
<b>10. Agile project management methodology: Scrum.</b> Characteristics of Scrum. Project planning sessions and sprinting. Sprint cycles, tools, and documentation. Project backlog and	2		2					<b>4</b>	<b>10</b>	Project-based learning group paper. Topic: risk management.

impediments. Roles of Scrum Master and team members in project management. Learning through Scrum board games. Testing the Jira software.									Schwalbe (2016) p.425-464.	
11. <b>Agile project management methodology: Kanban.</b> Characteristics of Kanban, key tools, and types of systems. Visualization, ensuring efficiency, and limiting work in progress. Testing the Trello app.	2		2					<b>4</b>	<b>10</b>	Project-based learning group paper and Microsoft Project tasks. Topic: procurement management Schwalbe (2016) p.465-494. Project Management Institute (2021) p.355-389.
12. <b>Agile project management methodology: Extreme Programming (XP).</b> Object-oriented programming. Programming cycles. Key processes: programming, testing, listening, and design creation. Don Wells' 29 rules of Extreme Programming.	2		2					<b>4</b>	<b>12</b>	Project-based learning group paper. Topic: stakeholder management. Kerzner (2022) p.13-18. Project Management Institute (2021) p.391-413.
13. <b>Trends and perspectives in project management.</b> Project portfolio management. Management of international projects.	4							<b>4</b>		
14. <b>Exam</b>										
<b>Total</b>	<b>32</b>		<b>16</b>					<b>48</b>	<b>82</b>	
<i>Note: Up to 6 contact hours may be replaced by guest lectures given by social partners or educational visits to social partner organisations</i>										

Assessment strategy	Weight %	Deadline	Assessment criteria
Project-based learning group paper	50%	16 week	<p>During each seminar, students present a group task. There are a total of 6 tasks, which will constitute the group written work. The following aspects of group work are evaluated:</p> <p>Adequacy and originality of project management solutions presented - 40% (the work includes factual analysis of the problem under consideration; gathered data and/or proposed solutions found by the authors; presented solutions and recommendations (20-40%). If the analysis is superficial and the conclusions and solutions are not concrete and detailed (10-20%). Deliberate distortion of factual material and plagiarism are not allowed - 0%).</p> <p>Compliance with the requirements set for academic writing - 10% (all necessary parts of the work are included, the work has a suitable structure and scope, written in academic language. Failure to comply with the requirements for academic writing results in a score of 0%).</p> <p>Evaluation without submitting the written work - 0%.</p> <p>Artificial intelligence tools may be used for group written assignments, provided their usage is disclosed and aligned with the "Guidelines for Using Artificial Intelligence at Vilnius University" (<a href="https://www.vu.lt/site_files/SPN-54_2024_priedas.pdf">https://www.vu.lt/site_files/SPN-54_2024_priedas.pdf</a>).</p>
Midterm exam	30%	11 week	<p>The midterm exam consists of up to 10 open-ended and closed-ended questions with varying weights, as well as practical tasks. Closed-ended questions are evaluated at 1%, while open-ended questions are evaluated differently (depending on their complexity). Evaluation is as follows:</p>

			<p>26-30%: All closed-ended questions are answered, concepts are elaborated on extensively and critically in response to open-ended questions, a scientific discussion on the topic of the studied material is summarized, a well-founded individual perspective on the discussed phenomena is presented.</p> <p>21-25%: Some closed-ended questions remain unanswered, concepts are elaborated on extensively and critically, a discussion on the studied material is summarized, terminological inaccuracies and ambiguities may occur in expressing an individual perspective.</p> <p>16-20%: Some closed-ended questions remain unanswered, concepts are partially disclosed and logically linked, a critical evaluation of the scientific discussion on the studied material is provided, the expression of an individual perspective is not always well-argued, one question may remain unanswered or be partially answered.</p> <p>11-15%: Some or all closed-ended questions remain unanswered, concepts are mentioned but not fully understood, the expression of an individual perspective is unsubstantiated or absent, some authors' ideas are described descriptively.</p> <p>0-10%: Closed-ended questions are not answered, arguments are unsubstantiated, terms are used incorrectly, knowledge of the studied topic is not demonstrated.</p> <p>The use of artificial intelligence tools during the exam is prohibited.</p>
Final exam	20%	Exam session	<p>The final exam consists of up to 10 open-ended and closed-ended questions with varying weights, as well as practical tasks. Closed-ended questions are evaluated at 1%, while open-ended questions are evaluated differently (depending on their complexity). Evaluation is as follows:</p> <p>17-20%: All closed-ended questions are answered, concepts are elaborated on extensively and critically in response to open-ended questions, a scientific discussion on the topic of the studied material is summarized, a well-founded individual perspective on the discussed phenomena is presented.</p> <p>13-16%: Some closed-ended questions remain unanswered, concepts are elaborated on extensively and critically, a discussion on the studied material is summarized, terminological inaccuracies and ambiguities may occur in expressing an individual perspective.</p> <p>9-12%: Some closed-ended questions remain unanswered, concepts are partially disclosed and logically linked, a critical evaluation of the scientific discussion on the studied material is provided, the expression of an individual perspective is not always well-argued, one question may remain unanswered or be partially answered.</p> <p>5-8%: Some or all closed-ended questions remain unanswered, concepts are mentioned but not fully understood, the expression of an individual perspective is unsubstantiated or absent, some authors' ideas are described descriptively.</p> <p>0-4%: Closed-ended questions are not answered, arguments are unsubstantiated, terms are used incorrectly, knowledge of the studied topic is not demonstrated.</p> <p>The use of artificial intelligence tools during the exam is prohibited.</p>
<b>REGARDING THE EXTERNAL EXAMINATION OF THE COURSE UNIT</b>			
Mark <input type="checkbox"/>		If permitted, please provide the conditions	

<b>Not permitted</b>	<input type="checkbox"/>	<b>Permitted</b>	<input checked="" type="checkbox"/>	x	When completing the course externally, a group project (50%) must be prepared and uploaded to the moodle environment no later than 5 working days before the exam. In addition, a midterm exam and the final exam (50%) are taken together. The same evaluation criteria are applied to the group assignment, midterm exam, and final exam as in regular (continuous) course studies.
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**REGARDING THE USE OF GENERATIVE ARTIFICIAL INTELLIGENCE (GenAI) TOOLS (SUCH AS "CHATGPT", ETC.) WHEN STUDYING THE COURSE UNIT**

Mark <input checked="" type="checkbox"/>				If permitted, please provide the conditions
<b>Not permitted</b>	<input checked="" type="checkbox"/>	<b>Permitted</b>	x	<p>Students may use AI for:</p> <ul style="list-style-type: none"> <li>• Searching for and gathering scientific literature;</li> <li>• Managing references and the bibliography for written work;</li> <li>• Visualizing data used in written work;</li> <li>• Correcting the language of the text.</li> </ul> <p>The use of AI is prohibited for:</p> <ul style="list-style-type: none"> <li>• Creating the original text of written work – i.e., direct writing. All work must be original and written by the student;</li> <li>• Creating literature analysis;</li> <li>• Generating or interpreting results without including the student's own analysis and evaluation.</li> </ul> <p>Disclosure of AI usage:</p> <ul style="list-style-type: none"> <li>• In the introduction of the thesis, when describing the methods used, students must clearly indicate which AI tools were used and how they were applied in writing their final thesis.</li> <li>• Parts of the work generated by AI (e.g., data visualizations) must be identified, specifying the AI tool used (see also the <i>Guidelines for the Use of Artificial Intelligence at Vilnius University</i>, approved by the University Senate on June 18, 2024, Resolution No. SPN-54).</li> </ul>

**REGARDING ACADEMIC PROGRESS**

A student's knowledge and skills are assessed during the examination session only if they have fulfilled all the required continuous (midterm) assessment tasks and requirements during the semester.

Students' knowledge and skills in all midterm assessments and the final exam are graded on a scale from 1 to 10. The course is considered successfully completed if:

- all midterm assessment results are no lower than 5;
- the final exam grade is no lower than 5.

A student who (1) does not demonstrate sufficient progress in achieving the intended learning outcomes of the course (module) during practical sessions (seminars, exercises, etc.) throughout the semester, and (2) fails to complete all required midterm assessment tasks within the deadlines specified in the course description, is not permitted to participate in the examination session.

Author (-s)	Publishing year	Title	Issue of a periodical or volume of a publication	Publishing house or web link
<b>Required reading</b>				
Harold R. Kerzner	2022	Project Management Metrics, KPIs, and Dashboards: A Guide to Measuring and Monitoring Project Performance		Wiley
Project Management Institute	2021	A Guide to the Project Management Body of Knowledge (PMBOK® Guide)		Project Management Institute
Michael Kleinaltenkamp, Wulf Plinke, Ingmar Geiger	2016	Business Project Management and Marketing – Mastering Business Markets		Springer

Kathy Schwalbe	2016	Information Technology Project Management		Cengage Learning
<b>Recommended reading</b>				
Elizabeth German, John Ballestro	2022	Project Management in Technical Services: Practical Tips and Case Studies		ALA Editions
Darrell Rigby, Sarah Elk, Steve Berez,	2020	Doing Agile Right: Transformation Without Chaos		Harvard Business Review Press
Rodney Turner	2016	Gower Handbook of Project Management		Routledge
Harold R. Kerzner	2013	Project Management: A Systems Approach to Planning, Scheduling, and Controlling		John Wiley & Sons
Paul Roberts	2013	Guide to Project Management: Getting it right and achieving lasting benefit		John Wiley & Sons
Stephen Barker, Rob Cole	2012	Brilliant Project Management: What the best project managers know, do, and say		FT Press
David Hinde	2012	Prince2 Study Guide		John Wiley & Sons