



COURSE UNIT (MODULE) DESCRIPTION

<b>Course unit (module) title</b>		<b>Code</b>	
Decision theory			
<b>Academic staff</b>		<b>Core academic unit(s)</b>	
Coordinating: Dr. Mahyar Kamali Saraji		Kaunas Faculty	
Other:		Institute of Social Sciences and Applied Informatics	
<b>Study cycle</b>		<b>Type of the course unit</b>	
First cycle		Compulsory	
<b>Mode of delivery</b>	<b>Semester when it is delivered</b> or <b>period</b>	<b>Language of instruction</b>	
Classroom / Online / Blended	<b>Semester or period</b>	3rd semester	
<b>Requisites</b>			
Prerequisites: No		Co-requisites (if relevant): No	
<b>Number of ECTS credits allocated</b>	<b>Student's workload (total)</b>	<b>Contact hours</b>	<b>Individual work</b>
5	130	52	78
<b>Purpose of the course unit</b>			
The course provides fundamental knowledge of decision theory and equips students with analytical and practical tools for rational decision-making under certainty, risk, and uncertainty. It develops students' ability to apply decision-making methods in economic and managerial contexts, integrating classical and behavioral approaches			
<b>Learning outcomes of the course unit</b>	<b>Teaching and learning methods</b>	<b>Assessment methods</b>	
Students will be able to apply decision-making methods when generating new business ideas, understanding responsibility for the impact of their activities and results on society and the environment	Lectures, seminars, independent work, group discussions, case analysis	Exam, assessment of intermediate assignments, colloquium, questioning method, oral presentation, discussion, reflection, problem-solving scenarios, case studies, simulations	
Students will be able to communicate effectively and actively, generate new ideas and justify innovative problem solutions using decision theory methods and neuroeconomics knowledge	Lectures, seminars, independent work, group discussions, case analysis	Exam, assessment of intermediate assignments, colloquium, questioning method, oral presentation, discussion, reflection, problem-solving scenarios, case studies, simulations	
Students will be able to understand the macroeconomic environment and make management decisions accordingly	Lectures, seminars, independent work, group discussions, case analysis	Exam, assessment of intermediate assignments, colloquium, questioning method, oral presentation, discussion, reflection, problem-solving scenarios, case studies, simulations	
Students will be able to creatively apply decision theory knowledge in practice in planning, organizing, leading, controlling, and implementing organizational economic objectives	Lectures, seminars, independent work, group discussions, case analysis	Exam, assessment of intermediate assignments, colloquium, questioning method, oral presentation, discussion, reflection, problem-solving scenarios, case studies, simulations	

Content	Contact hours							Individual work: time and assignments	
	Lectures	Tutorials	Seminars	Workshops	Laboratory work	Internship	Contact hours, total	Individual work	Tasks for individual work
Decision-making elements, classification and models (decision elements, rationality assumptions, classification of decisions, classical and behavioral approaches, introduction to multi-criteria decision-making and decision environments)	4		2				6	4	Scientific literature analysis, information search, its systematization and summarization, writing of independent work.
Stages and levels of decision-making (problem identification, structuring decision problems, criteria definition, alternative generation, introduction to decision matrices, selection of decision-making approaches).	4		2				6	4	Scientific literature analysis, information search, its systematization and summarization, writing of independent work.
Decision-making methods (individual and group decision-making, quantitative methods, payoff matrix, decision trees, multi-criteria decision-making methods: AHP, TOPSIS, VIKOR, weighting methods such as SWARA, entropy and CRITIC, ranking and comparison of alternatives).	4		2				6	4	Scientific literature analysis, information search, its systematization and summarization, writing of independent work.
Decisions under conditions of uncertainty (decision-making under risk and uncertainty, integration of MCDM under uncertainty, sensitivity analysis, robustness analysis, heuristics and biases, basic concepts of game theory).	4		2				6	4	Scientific literature analysis, information search, its systematization and summarization, writing of independent work.
Data collection and questionnaire design for decision-making (primary and secondary data, survey design principles, Likert scales, expert elicitation, consistency analysis, aggregation of expert judgments, construction of decision matrices for MCDM).	4		2				6	4	Scientific literature analysis, information search, its systematization and summarization, writing of independent work.
Mid-term exam preparation and examination		2					2	22	Consultation
Applied decision analysis (integration of collected data into MCDM models, application of methods, comparison of results, validation of outcomes, interpretation of decision results, discussion of trade-offs and implications).	4		2				6	4	Scientific literature analysis, information search, its systematization and summarization, writing of independent work.
Behavioral aspects of decision-making (bounded rationality, heuristics and biases, dual-process theory, implications for criteria weighting and preference modeling in MCDM).	4		2				6	4	Scientific literature analysis, information search, its systematization and summarization, writing of independent work.
Group and collective decision-making (aggregation of preferences, consensus methods, group decision-making in MCDM, fairness and collective choice, discussion and justification of decisions).	4		2				6	4	Scientific literature analysis, information search, its systematization and summarization, writing of independent work.
Final exam preparation and examination		2					2	24	Exam preparation, examination
<b>Total</b>	<b>32</b>	<b>4</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>52</b>	<b>78</b>	

Assessment strategy	Weight %	Deadline	Assessment criteria
Mid-term exam	30	During the semester	The exam consists of closed and open-type questions (of varying difficulty, from understanding to evaluation) with different weightings. Assessed as follows: • <b>10 points</b> : Excellent knowledge and skills. Evaluation level. 95–100% correct answers. • <b>9 points</b> : Very good knowledge and skills, may contain minor errors. Synthesis level. 85–94% correct answers. • <b>8 points</b> : Average knowledge and skills, some errors. Analysis level. 75–84% correct answers. • <b>7 points</b> : Below average knowledge and skills, essential errors. Application level. 65–74% correct answers. • <b>6 points</b> : Minimum requirements met. Many errors. Application level. 55–64% correct answers. • <b>5 points</b> : Minimum requirements barely met. Many errors. Description level. 45–54% correct answers. • <b>4–0 points</b> : Minimum requirements not met. Less than 44% correct answers.
Independent work	30	During the semester	5–6 practical tasks (problem-solving, practical application of knowledge in business tasks) and 1–2 case analyses and their presentations. <b>Assessment criteria</b> : • <b>10 points</b> – comprehensive answers, demonstrated synthesized knowledge, based on theoretical literature insights, ability to critically evaluate, problems solved correctly. • <b>9 points</b> – essence of questions revealed, generalized knowledge shown, causes explained; problems solved correctly. • <b>8 points</b> – relational knowledge and understanding: essential parts connected and integrated, problems solved with minor errors. • <b>7 points</b> – multi-structural knowledge: focus on several important aspects, but not all properly connected; problems solved with errors. • <b>6 points</b> – multi-structural knowledge: focus on several aspects, but weakly connected; problems solved with errors. • <b>5 points</b> – uni-structural knowledge: answers focused on one aspect, based on listing facts; problems solved with errors. • <b>4–1 points</b> – minimum requirements not met: incorrect or unsuitable facts used, incorrect or missing answers, unsolved tasks. If the case analysis part of Independent Work is not presented in class, the lecturer has the right to ask additional questions to verify that generative AI tools (“ChatGPT” or similar) were not used. If necessary, the grade may be changed or annulled.
Attendance	10	During the semester	<b>Assessment criteria</b> : Assessed as follows: 10 points: 95–100% attendance; consistently present, punctual, and actively engaged. 9 points: 85–94% attendance; minor absences or occasional lateness; generally engaged. 8 points: 75–84% attendance; several absences; moderate engagement. 7 points: 65–74% attendance; frequent absences; limited participation. 6 points: 55–64% attendance; many absences; minimal engagement. 5 points: 45–54% attendance; attendance barely meets minimum expectations; very low participation. 4–0 points: less than 45% attendance; minimum requirements not met.
Exam (test)	30	During the exam session	The exam consists of closed and open-type questions (of varying difficulty, from understanding to evaluation) with different weightings. Assessed as follows: • <b>10 points</b> : Excellent knowledge and skills. Evaluation level. 95–100% correct answers. • <b>9 points</b> : Very good knowledge and skills, may contain minor errors. Synthesis level. 85–94% correct answers. • <b>8 points</b> : Average knowledge and skills, some errors. Analysis level. 75–84% correct answers. • <b>7 points</b> : Below average knowledge and skills, essential errors. Application level. 65–74% correct answers. • <b>6 points</b> : Minimum requirements met. Many errors. Application level. 55–64% correct answers. • <b>5 points</b> : Minimum requirements barely met. Many errors. Description level. 45–54% correct answers. • <b>4–0 points</b> : Minimum requirements not met. Less than 44% correct answers.

Author (-s)	Publishing year	Title	Issue of a periodical or volume of a publication	Publishing house or web link
<b>Required reading</b>				
Thakkar, J. J.	2021	Multi-Criteria Decision Making		Springer
Martínez-López, F. J.	2023	Multi-Criteria Decision-Making Sorting Methods		Elsevier
Groves, R. M., et al.	2009	Survey Methodology		Wiley
Peterson, M.	2017	An Introduction to Decision Theory		Cambridge University Press
<b>Recommended reading</b>				
Clemen, R. T., Reilly, T.	2013	Making Hard Decisions with DecisionTools		Cengage Learning