



COURSE UNIT (MODULE) DESCRIPTION

Course unit (module) title	Code
INVESTMENT MANAGEMENT IN FINANCIAL MARKETS	

Academic staff	Core academic unit(s)
Coordinator : Prof. Saulius Masteika	Kaunas Faculty Institute of Languages, Literature and Translation Studies <input type="checkbox"/> Institute of Social Sciences and Applied Informatics <input checked="" type="checkbox"/>

Study cycle	Type of the course unit
First <input type="checkbox"/> Second <input checked="" type="checkbox"/>	Compulsory course <input type="checkbox"/> Elective course <input checked="" type="checkbox"/> General university course <input type="checkbox"/> Individual study course <input checked="" type="checkbox"/> Interdisciplinary course <input type="checkbox"/>

Mode of delivery	Semester or period when it is delivered	Language of instruction
Face to face/Remote	3 rd semester	English

Requisites	
Prerequisites: Economics, statistics	Co-requisites (if relevant): Previous studies: Mathematics, English, Information technologies

Number of ECTS credits allocated	Student's workload (total)	Contact hours	Individual work
5	130	32	98

Purpose of the course unit		
The aim of the course is- to acquire theoretical and practical knowledge about (i) financial markets and exchanges, trading in stock, currency, crypto and commodity markets, (ii) trading financial instruments, derivatives (iii) intellectual methods for decision making in financial markets.		
Learning outcomes of the course unit	Teaching and learning methods	Assessment methods
Students should be able: <ul style="list-style-type: none"> - to independently identify developments in the financial and economic environment and business sectors, and to adapt existing competences by using structured information and applying existing and newly acquired knowledge - to organize securities trading and analytical activities in investment management departments of banks; brokerage firms, fintech companies. - to apply automated decision support systems to identify potential investment markets and plan capital deployment - to apply nonlinear and stochastic methods of technical analysis; the strategies based on fundamental analysis and behavioural finance 	Lectures, practical tasks, self-study, group discussion, paper trading and portfolio management	Colloquium. Practical assignments. Evaluation of investment portfolio management. Examination.

- to evaluate the risks and profitability trading classical and alternative financial instruments		
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Course content: breakdown of the topics	Contact work hours							Individual work hours and tasks	
	Lectures	Consultations	Seminars	Practice classes	Laboratory	Practice	All contact work	Individual work	Tasks
Introductory lecture. Introduction to the course, assessment methods.	1						1		
Global financial markets and exchanges. Forex market. Commodity and derivative exchanges. Crypto centralized and decentralized exchanges.	1			2			3	10	Scientific literature review; Systematization and generalization of information; Practical tasks and individual work.
Financial instruments. Types of stocks, Debt securities, Futures, Options, Mutual funds, Swaps, ETF, CDS. Historical data standardization and quantitative analysis. Trading through on-line brokers, order types. Practical aspects of trading securities.	2			2			4	12	Scientific literature review; Systematization and generalization of information; Practical tasks and individual work; Paper trading in financial markets.
Fundamental analysis of financial markets. Analysis of financial indicators. Technological solutions for filtering and ranking of securities. Combining fundamental and technical analysis in decision making in financial markets.	1			1			2	10	Scientific literature review; Systematization and generalization of information; Practical tasks and individual work; Paper trading in financial markets.
Technical analysis. The basic principles and assumptions of technical analysis. Trading strategies based on technical analysis in financial markets. Indicators of technical analysis. Trend indicators. Oscillators. Market strength indicators. Chart patterns. Formalization of technical analysis indicators. On-line instruments for technical analysis. Graphical analysis of historical data, chart types.	4			4			8	12	Readings and practical tasks.
Preparation for colloquium and interim settlements								8	Preparation for mid-term settlements (lessons analysis, scientific literature analysis, reports preparation and presentation).
Intellectual methods for data analysis and securities ranking. Securities ranking techniques and algorithms. On-line technological solutions for data filtering. Nonlinear ranking techniques. Self-organizing networks and Kohonen clustering in financial markets. SOMine software use cases. AI in finance.	3			2			5	12	Scientific literature review; Systematization and generalization of information; Practical tasks and homeworks; Paper trading in financial markets.

Course content: breakdown of the topics	Contact work hours							Individual work hours and tasks	
	Lectures	Consultations	Seminars	Practice classes	Laboratory	Practice	All contact work	Individual work	Tasks
Emotional intelligence and behavioral finance. Prospect theory. Neuroeconomy and neuro finance. Trading biases and intuition when trading markets. Sentiment indicators in financial markets and crowd behavior patterns. Commercial products related to behavioral finance. Behavioral finance and technical analysis.	3			1			4	6	Scientific literature review; Systematization and generalization of information; Practical tasks and homework; Paper trading in financial markets.
Blockchain technology and cryptocurrency solutions. Bitcoin and altcoins. Mining. Investment strategies. Blockchain and fintech solutions. Crypto payments. Smart contracts.	3			2			5	16	Scientific literature review; Systematization and generalization of information; Practical tasks and homework; Paper trading in financial markets.
Preparing for the exam and exam								10	Preparing for exam (E)
Exam								2	
Total	16			16			32	98	

Note: No more than 4 contact hours may be replaced by guest lectures from social partners or educational visits to social partners

Assessment strategy	Weight, %	Deadline	Assessment criteria
Practical work, (A1; A2-optional)*	40%	6 and 15 week	Assessed are the following aspects: <ul style="list-style-type: none"> - If practical tasks are completed (1,6 points) - If practical tasks are summarized, conclusions written (1,6 points) - If practical work quality meets the minimum paper work requirements (0,8) Assessed in grades 1-10 rating scale.
Paper trading (PT)	10%	Paper trading during the semester. Assessment during the session	Assessed the quality of the management of the investment portfolio (financial instruments, diversification, trading intensity). The results are compared with the SP500 index. (1 point) . Assessed in grades 1-10 rating scale.
Colloquium /Seminar, (K)	10%	According timetable	Mid-term exam covers the first lectures of theoretical material. A student is given three open questions with the same weight. The assessment takes place in written form, in-person (1 point) . Assessed in grades 1-10 rating scale.
Exam, (E)	40%	According timetable	The exam covers the theoretical material of lectures. A student is given three open questions with the same weight (33,3%). The assessment takes place in written form, in-person (4 point) . Assessed in grades 1-10 rating scale.

Final grade: $FG = A1*0,2+A2*0,2+PT*0,1+K*0,1+E*0,4$

* Guidance on the practical work: (i) the procedure for carrying out the practical work is set out in the descriptions of the practical work. In the defense of the practical work, students are required to submit typed reports and defend the work. Failure to defend the work in time will result in a 50 % reduction in the mark (no reduction in the mark if the date of the defense is agreed in advance with the lecturer).

Assessment strategy	Weight, %	Deadline	Assessment criteria
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For the external examination, the following formula is applied: Final grade = (Practical work is done individually, and the report is prepared accordingly (A1 and A2)) * 0.5 + (Examination grade) * 0.5.

Evaluation strategy working remotely the same as expected.

REGARDING THE EXTERNAL EXAMINATION OF THE COURSE UNIT

Mark <input checked="" type="checkbox"/>		If permitted, please provide the conditions	
Not permitted <input checked="" type="checkbox"/>	Permitted <input type="checkbox"/>		

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	
Not permitted <input type="checkbox"/>	Permitted <input checked="" type="checkbox"/>	<p>GenAI may only be used if the lecturer specifies that a particular assignment may be completed using GenAI; otherwise, it will not be graded.</p> <p>If the use of GenAI tools is permitted for completing assignments, the citation requirements set forth in the Guidelines for the Use of Artificial Intelligence at Vilnius University must be strictly followed.</p> <p>In cases when the Assessment Strategy includes a written assignment (written work, research paper, project, etc.) and the Assessment Criteria do not include a defense or an oral presentation of the written work, the lecturer shall have the right to ask follow-up questions in order to make sure that no generative artificial intelligence (AI) tools (ChatGPT, etc.) were used by the student to prepare the assignment (i.e. the content of the work was not generated by AI tools) and, if necessary, to modify or cancel the evaluation of the work.</p>	

REGARDING ACADEMIC PROGRESS

A student who (1) **throughout the semester consistently** fails to demonstrate **progress in achieving the expected learning outcomes of a subject (module)** during the practical classes (seminars, exercises, laboratory work, etc.) and (2) fails to complete all interim assessment requirements and tasks within the time specified in the course description, is not allowed to participate in the examination session.

Author	Year of publication	Title	Issue of a periodical or volume of a publication	Publishing place and house or web link
Required reading				
S.Masteika, E.Rebždys, K.Driaunys, A.Šapkauskienė, A.Mačerinskienė, E.Krampas	2023	Bitcoin double-spending risk and countermeasures at physical retail locations	International Journal of Information Management, ISSN 0268-4012,	Elsevier
Furieux, N.	2018	Investigating Cryptocurrencies: Understanding, Extracting, and Analyzing Blockchain Evidence		Wiley
Charles D.Kirkpatrick II, Julie R.Dahlquist	2016	Technical Analysis: The Complete Resource for Financial Market Technicians	3 rd Edition	FT Press
Andreas M. Antonopoulos, Olaoluwa Osuntokun, Rene Pickhardt	2022	Mastering the Lightning Network: A Second Layer Blockchain Protocol for Instant Bitcoin Payments	1 Edition	O'Reilly

Author	Year of publication	Title	Issue of a periodical or volume of a publication	Publishing place and house or web link
Mailund, Thomas	2017	Beginning Data Science in R: Data Analysis, Visualization, and Modelling for the Data Scientist		Apress
S.Masteika	2025	Intellectual systems in financial markets, e-conspectus		VU KnF
Narayanan, A.	2016	Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction.		Oxford: Princeton University Press.
Daniel Kahneman	2013	Thinking, Fast and Slow	Reprint edition	Farrar, Straus and Giroux
Susanne Chishti, Janos Barberis	2018	The FinTech Book: The Financial Technology Handbook for Investors, Entrepreneurs and Visionaries		Wiley