



## COURSE (MODULE) DESCRIPTION

Course title	Code
Applied Finance	

Staff	Department
<b>Coordinator:</b> Dr. Milda Norkutė <b>Other(s):</b>	Faculty of Economics and Business Administration

Study cycle	Course type
First (Bachelor's)	Compulsory

Form of implementation	Period of implementation	Language of instruction
Face-to-face	Fifth semester	English

Requirements for student	
<b>Prerequisites:</b> Statistical Theory, Theory and Practice of Econometrics, Finance	<b>Additional requirements (if any):</b>

Number of ECTS credits	Student's workload	Contact hours	Individual work
5	130	36	94

Purpose of the course and competences developed
This course provides students with methods and tools to analyse financial models, practical examples, having real-world relevance, hands-on experience of modelling and forecasting.

Learning outcomes	Teaching methods	Assessment methods
1.2 Statistically describe and interpret financial data.	Lectures, practical assignments.	Final exam (60%) Assignments (25%) Essay (15%)
2.2 Estimate financial models and use them in decision making.	Lectures, practical assignments.	
4.2 Have the ability to communicate knowledge in the field of finance and economics to specialist and non-specialist audiences clearly and unambiguously.	Practical assignment reports and essay.	
5.2 Have necessary learning skills to continue to study in a manner that may be largely self-directed or autonomous.	Essay	

Course themes	Contact / Individual work: time and assignments								Assignments due date
	Lectures	Tutorials	Seminars	Practical classes	Laboratory work	Practice	Contact hours	Individual work	
Properties of financial data, motivating examples. Review of statistics and econometric methods such as Ordinary Least Squares (OLS), Maximum Likelihood (ML) and Generalized Least Squares (GLS).	4	2					6	15	Brooks Ch 1-3, 5, Lecture notes.
A short summary of the asset pricing models. Testing empirically the Capital Asset Pricing Models (CAPM) and Arbitrage Pricing Theory (APT). Portfolio valuation methods. Cross-section of stock returns.	6	2					8	24	Brooks Ch 3-4, CLM Ch 5-6, Lecture notes.
Constructing factors: Factor Analysis (FA) versus Principal Components (PC).	2	2					4	10	Brooks Ch 4, Lecture notes.
Univariate and multivariate time series models, forecasting. Applications in finance.	4	2					6	15	Brooks Ch 6-7, Lecture notes.
Nonstationarity and unit roots. Testing the Efficient Market Hypothesis. Cointegration. Modelling the long-run relationships in finance.	4	2					6	15	Brooks Ch 8, CLM Ch 2, Lecture notes.
Modelling time-varying volatility in financial data: Autoregressive Conditional Heteroskedasticity (ARCH), Generalized ARCH (GARCH), asymmetric GARCH, multivariate GARCH models.	4	2					6	15	Brooks Ch 9, CLM Ch 12, Lecture notes.
<b>Total</b>	<b>24</b>	<b>12</b>					<b>36</b>	<b>94</b>	

Assessment strategy	Share in %	Time of assessment	Assessment criteria
Written exam	60%	End of autumn semester	The final exam will consist of open questions in which students have to show their analytical capabilities and knowledge. The final exam will test the material from the whole course.
Five Practical Assignments (5x5%) and a Short Essay (15%)	40%	During the course	A well performed empirical analysis and written report, which shows students' understanding of the applied methods and the related theories.

Author	Published in	Title	Issue No. or Volume	Publishing house or Internet site
<b>Required reading</b>				
Lecture notes and slides as well as online resources will be made available to all students				
Brooks, C.	2008	Introductory Econometrics for Finance	Second edition	Cambridge University Press
Campbell, J. Y., A. W. Lo, and A. C.	1997	The Econometrics of Financial Markets		Princeton University Press

Mackinlay (Referred to as CLM)				
<b>Supplementary reading (text books)</b>				
Verbeek, M.	2017	A Guide to Modern Econometrics	Fifth edition	Wiley
Ruppert, D. and D. S. Matteson	2012	Statistics and Data Analysis for Financial Engineering	Second edition	Springer