



## COURSE UNIT (MODULE) DESCRIPTION

Course unit (module) title	Code
Applied Finance	

Academic staff	Core academic unit(s)
<b>Coordinator:</b> Nora Marija Laurinaitytė <b>Other(s):</b> Yue Qin	Faculty of Economics and Business Administration

Study cycle	Type of the course unit
First (Bachelor's)	Compulsory

Mode of delivery	Semester or period when it is delivered	Language of instruction
Face-to-face	Fifth semester	English

Requisites	
<b>Prerequisites:</b> Statistical Theory, Theory and Practice of Econometrics, Finance	<b>Co-requisites (if relevant):</b>

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

Purpose of the course unit
This course provides students with practical examples, having real-world relevance, of application of econometric methods, tools, and financial models, and provides hands-on experience of modelling, forecasting, and interpreting econometric output in finance.

Learning outcomes of the course unit	Teaching and learning methods	Assessment methods
1.2 Statistically describe and interpret financial data.	Lectures and tutorials	Individual assignments/homework (15%)  Final exam (85%)
2.2 Interpret results from estimated financial models and use them in decision making.	Lectures and tutorials	
4.2 Have the ability to communicate knowledge in the field of finance to specialist and non-specialist audiences clearly and unambiguously.	Tutorials	
5.2 Have necessary learning skills to continue to study in a manner that may be largely self-directed or autonomous.	Tutorials	

Content	Contact / Individual work: time and assignments								Tasks for individual work
	Lectures	Tutorials	Seminars	Workshops	Laboratory work	Internship	Contact hours, total	Individual work	
Introduction to the course. Review of definitions in statistics. Statistical properties of financial data.	3						3	6	Brooks Ch 1.11.4, 2.1, 2.3-2.7.
Review of Ordinary Least Squares (OLS) estimator. Estimating and testing the Capital Asset Pricing Model (CAPM). Factor models. Factor Zoo.	3	3					6	16	Brooks Ch 3, 4.1-4.9, 5.1-5.15, 14.2 Selected papers
Instrumental Variables (IV) and search for identification. Finance and Growth, Corporate Governance - structure of corporate boards, Corporate Finance – optimal leverage and debt overhang.	3	3					6	16	Angrist and Krueger (2001) Selected papers
Review of Maximum Likelihood (ML) estimator. Stock market participation puzzle, Testing for behavioral biases.	2	1					3	8	Brooks Appendix 9.1. Selected papers
Overview of credit risk management. Limited dependent variable regression models.	2	1					3	12	First Homework Assignment
Introduction to credit scoring models and goodness of fit tests (KS, CAP, GINI) Credit ratings, ratings transitions, and ratings agencies.	4	1			1		6	10	Lecture slides, Selected papers
Credit states and roll rate models. Loan Modification and Servicing.	2	1					3	10	Second Homework Assignment
Introduction to Fintech. Fintech lending. Fintech's impact on credit scoring: big data and alternative data.	3	3					6	16	Third Homework Assignment
<b>Total</b>	<b>22</b>	<b>13</b>			<b>1</b>		<b>36</b>	<b>94</b>	

Assessment strategy	Weight %	Deadline	Assessment criteria
Individual assignments/homework	15%	During the course	Application of learned material to specific questions.
Written exam	85%	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.

Author (-s)	Publishing year	Title	Issue no. or volume	Publishing house or web link
<b>Required reading</b>				
The slides as well as online resources will be made available to all students				
Brooks, C.	2019	Introductory Econometrics for Finance	Fourth edition	Cambridge University Press
Angrist, J. D., and Krueger A. B.	2001	Instrumental Variables and the Search for Identification: From Supply and Demand to Natural Experiments	Journal of Economic Perspectives, 15 (4): 69–85.	DOI: 10.1257/jep.15.4.69
<b>Recommended reading</b>				
Verbeek, M.	2017	A Guide to Modern Econometrics	Fifth edition	Wiley
Eugene F. Fama, Kenneth R. French	1993	Common risk factors in the returns on stocks and bonds	Journal of Financial Economics, Volume 33, Issue 1, Pages 3-56	<a href="https://doi.org/10.1016/0304-405X(93)90023-5">https://doi.org/10.1016/0304-405X(93)90023-5</a>
Feng, G., Giglio, S. and Xiu, D.	202	Taming the factor zoo: A test of new factors	The Journal of Finance, 75(3), pp.1327-1370.	<a href="https://doi.org/10.1111/jofi.12883">https://doi.org/10.1111/jofi.12883</a>
Tobias Berg, Valentin Burg, Ana Gombović, Manju Puri,	2020	On the Rise of FinTechs: Credit Scoring Using Digital Footprints	<i>The Review of Financial Studies</i> , Volume 33, Issue 7, Pages 2845–2897,	<a href="https://doi.org/10.1093/rfs/hhz099">https://doi.org/10.1093/rfs/hhz099</a>
Vives, Xavier	2019	Digital disruption in banking	Annual Review of Financial Economics, Volume 11, Pages 243-272.	<a href="https://doi.org/10.1146/annurev-financial-100719-120854">https://doi.org/10.1146/annurev-financial-100719-120854</a>
Robert G. King and Ross Levine	1993	Finance and Growth: Schumpeter Might be Right	The Quarterly Journal of Economics Vol. 108, No. 3, pp. 717-737	<a href="https://doi.org/10.2307/2118406">https://doi.org/10.2307/2118406</a>
Rajan, R. G., & Zingales, L.	1998	Financial Dependence and Growth.	The American Economic Review, 88(3), 559–586.	<a href="http://www.jstor.org/stable/116849">http://www.jstor.org/stable/116849</a>

Gennaro Bernile, Vineet Bhagwat, Scott Yonker	2018	Board diversity, firm risk, and corporate policies	Journal of Financial Economics, Volume 127, Issue 3, Pages 588- 612	<a href="https://doi.org/10.1016/j.jfineco.2017.12.009">https://doi.org/10.1016/j.jfineco.2017.12.009</a>
Xavier Giroud, Holger M. Mueller, Alex Stomper, Arne Westerkamp	2012	Snow and Leverage	The Review of Financial Studies, Volume 25, Issue 3, March 2012, Pages 680- 710,	<a href="https://doi.org/10.1093/rfs/hhr113">https://doi.org/10.1093/rfs/hhr113</a>