Approved by GBE SPK 2, 2024-04-30

COURSE UNIT (MODULE) DESCRIPTION

Course unit (module) title	Code
Statistical Data Analysis with Eviews	

Academic staff	Core academic unit(s)
Coordinating: Assoc. Prof. dr. Arunas Burinskas **Other:**	Faculty of Economics and Business Administration

Study cycle	Type of the course unit
Semester 2	Compulsory

Mode of delivery	Semester or period when it is delivered	Language of instruction
Mixed: classroom and online	Spring semester	English

Requisites	
Prerequisites: knowledge of macro- and microeconomics; introduction to econometrics	**Co-requisites (if relevant):** Not

Number of ECTS credits allocated	Student's workload (total)	Contact hours	Individual work
5	130	24	106

Purpose of the course unit		
The subject aims to provide students with the knowledge and practical skills to use the available data to model micro- and macro-economic situations, combining economic theory and quantitative research methods. *Generic competencies* to be developed: (i) critical thinking and ability to solve problems; (ii) ability to learn and develop independently; (iii) ability to organise work and to become an integral part of the team.		
Learning outcomes of the course unit	**Teaching and learning methods**	**Assessment methods**
The ability to conduct economic research independently: to analyse and critically assess business and economic ideas, to formulate economic arguments and assumptions, to find solutions to economic problems and to predict trends in economic phenomena, to choose and apply quantitative methods of economic research	Critical reading of the text, problematic teaching, lecture discussion, computer and theoretical modelling, problematic conversation, demonstration	Homework (tests with open and closed questions); final test
The ability to select appropriate empirical data to identify and group, analyse and otherwise process the relationship between economic phenomena	Computer and theoretical modelling, learning in action, learning in solving problems, critical reading of the text, arguments for and against	Evaluation of the case study presentation
The ability to constructively assess the quality of a paper and to comment during public events and group discussions	Critical reading of the text, learning by solving	
The ability to raise problems, critically argue them and develop ideas for the use of alternatives to problem-solving	Case studies, participation in discussions	Homework (tests with open and closed questions); final test
ability to independently collect, analyse and interpret information		
The ability to identify gaps in their knowledge and find ways to fill them		

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**. Introduction to research and its methods in economics and business**. The notion of research, the scientific method and its requirements, the general framework for research, basic quantitative methods of empirical research, and introduction to Eviews software.	1						**1**	**8**	Critical reading, homework assignments – tests with open and closed questions
2. **Introduction to working with data**: access to databases; descriptive statistics; statistical comparison of data (brief reminder of probability theory); data processing and transformation techniques; methods for eliminating seasonal influences; Hodrick-Prescott and other filters in the Eviews; panel data graphical analysis; economic and business indicators, their measurement.			2				**2**	**8**	Presentation of the case study
3. **Repetition of statistical, correlation and linear regression techniques with Eviews**. Repetition of the basics of statistics, *z* and *t* statistics, formulation and testing of hypotheses, correlation methods and linear regression with Eviews: "important assumptions" of linear regression, "BLUE"; diagnostic statistics; control variables, instrumental variables (IV) and IV regression (TSLS).	1		3				**4**	**12**	Critical reading, class assignments: case studies, homework assignments – tests with open and closed questions
4. **Some regression techniques for qualitative research**. Logistic regression model, ordered logit model, multinomial logit model, and other applicable regression models. Causation studies in various business and economic fields.	1		2				**3**	**12**	Class assignment: a case study
5. **Some time series methods**: autoregression and stationarity, testing for stationary, ADL test, ARIMA and ARDL models, and the Granger causality test.	1		4				**5**	**24**	Critical reading, class assignments: case studies, homework assignments – tests with open and closed questions
6. **Panel data regression**. Static and dynamic models, fixed- and random-effects models.	1		3				**4**	**18**	
7. **Counterfactual methods for causality estimation**. Difference in differences (DiD), regression discontinuity, IV, propensity score matching	1		4				**5**	**24**	
Total	**6**		**18**				**24**	**106**	

Assessment strategy	Weight %	Deadline	Assessment criteria
Homework (tests with open and closed questions)	45	1-2 weeks after each lecture	Work at home. Timely tests of homework assignments with open and closed issues are evaluated. A 10-point scale is applied to the assessment. Tests with closed questions and tasks are assessed according to the volume of correctly

			performed tasks and questions answered, taking into account the weight assigned to them in the final grade of the test. Open-ended questions are evaluated according to the demonstrated level of knowledge and the completeness of the answers, which are assessed according to the assessment scale given in the final section of the test.
Case study presentations	15	During the semester	A 10-point scale is applied to assess case study presentations. The evaluation criteria are as follows: clear presentation of ideas, quality of speech (clarity, volume), quality of reasoning, quality of conclusions, eye contact with the audience, quality of visually presented material, question management (quality of answers to questions), and time management (whether the time allotted for the presentation is used correctly).
Final test	40	On the day of the exam	The final test consists of 20-30 open and closed questions (optionally, by the lecturer's decision). Rated as follows: 10 points or excellent knowledge and abilities: the work is done by all requirements; 9 points or good knowledge and skills: the work is done according to all requirements, but minor and minor errors are possible; 8-7 points or average knowledge and skills: the work does not fully meet the criteria, minor mistakes are possible; 6 points or satisfactory knowledge and abilities: the work does not fully meet the requirements, the structure of the work is not very clear and logical, the necessary parts are missing, data analysis is weak, and superficial conclusions are made. 5 points or weak knowledge and abilities: the work meets the minimum requirements. 4-1 points or unsatisfactory knowledge and abilities: the work does not meet the minimum requirements.
The grade of the subject exam is satisfactory when the arithmetic weighted average of the final test (correct answers must be at least 50 per cent) and all other assessments (homework and case study presentation) are at least 5 points. An externship exam is possible.			

Author (-s)	Publishing year	Title	Issue of a periodical or volume of a publication	Publishing house or weblink
Required reading				
J. Scott Armstrong, Kesten C. Green	2022	The scientific method		Cambridge University Press
Barbara Illowsky, Susan Dean, ...	2022	Introductory Statistics		OpenStax. Online version: https://openstax.org/details/books/introductory-statistics?Book%20details
Jim Frost	2020	Regression Analysis. An Intuitive Guide for Using and Interpreting Linear Models		Statistics By Jim Publishing
Joseph M. Hilbe	2015	Practical Guide to Logistic Regression		CRC Press, Taylor & Francis Group. Online: https://ftp.idu.ac.id/wp

				-content/uploads/ebook/ip/REGRESI%20LOGISTIK/Practical%20Guide%20to%20Logistic%20Regression%20(%20PDFDrive%20).pdf
Gebhard Kirchgässner,·Jürgen Wolters	2007	Introduction to Modern Time Series Analysis		Springer. Online: https://link.springer.com/content/pdf/10.1007/978-3-540-73291-4.pdf
Badi H. Baltagi	2021	Econometric Analysis of Panel Data		Springer
Stephen L. Morgan	2014	Counterfactuals and Causal Inference: Methods and Principles for Social Research (Analytical Methods for Social Research)		Cambridge University
Recommended reading				
Snyder, H.	2019	Literature review as a research methodology: An overview and guidelines. Open access		Journal of Business Research, 104, 333-339.
Lockwood, C., dos Santos, K. B., & Pap, R.	2019	Practical guidance for knowledge synthesis: Scoping Review Methods		Asian nursing research, 13(5), 287-294. Open access
Saunders M., Lewis P., Thornhill A.	2015	Research methods for business students	7th ed	Prentice Hall
Zikmund, G.W., Babin B., Car J.C., Griffin, M.	2013	Business Research Methods	9th ed	Cengage learning
Bhattacharjee, A.	2012	Social Science Research: Principles, Methods, and Practices	University of South Florida Tampa Library Open Access Collections	https://scholarcommons.usf.edu/oa_textbooks/3/ Open access
Jesson, J.	2011	Doing your literature review: traditional and systematic techniques.		London: SAGE
Neugeboren, RH	2005	The Student's Guide to Writing Economics		Routledge: London