



### COURSE (MODULE) DESCRIPTION

Course title	Course code
Panel Data Econometrics	

Lecturer(s)	Department where the course is delivered
<b>Coordinator:</b> Artūras Juodis <b>Other lecturers:</b> none	Faculty of Economics and Business administration

Cycle	Type of course
First (Bachelor's)	Selective

Mode of delivery	Semester or period when the course is delivered	Language of instruction
Face-to-face	Sixth (spring) semester	English

Prerequisites and corequisites	
<b>Prerequisites:</b> Statistical Theory, Econometric Theory and Practice	<b>Corequisites (if any):</b> basic skills in statistical computing is required

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

Purpose of the course and competences developed		
The course presents an overview of econometric methods used in panel data analysis and develops the students' skills necessary for applied analysis of panel data.		
Learning outcomes	Learning methods	Assessment methods
Knowledge and understanding of panel data regression and its applications. (1.2)	Traditional <i>lectures</i> to explain the models of panel data regressions  <i>Tutorial classes</i> to solve problems that help understand the concepts and methods presented.  <i>Individual and group work:</i> Solving complementary problems and studying the literature.	Homeworks, written exam.
Knowledge and understanding of estimation methods of panel data regression models. (3.2)		
Have acquired knowledge how to specify, estimate and interpret results of the appropriate panel data regression model for a given econometric problem. (3.4)		

Course content: breakdown of	Contact / Individual work: time and assignments
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the course	Lectures	Tutorials	Seminars	Practical classes	Laboratory work	Practise	Contact hours	Individual work	Material
Maximum Likelihood Estimation, IV and Generalized Method of Moments	4	2					6	9	Wooldridge Ch. 12-14. <i>Slides</i> .
Weak Instruments in IV and GMM	2	2	4				8	25	Andrews et al. (2019). <i>Slides</i>
Static Panel Data Models	4	2					6	25	Wooldridge Ch. 10. <i>Slides</i>
Dynamic Panel Data Models	4	4	4				12	25	Roodman (2009). <i>Slides</i> .
Causal Inference in Panel Data	2	2					4	10	Abadie (2021). <i>Slides</i>
<b>Total</b>	<b>16</b>	<b>12</b>	<b>8</b>				<b>36</b>	<b>94</b>	

Assesment strategy	Weight	Time of assesment	Criteria
<b>Common evaluation scheme.</b> 10-point scale is used for grading. The final grade is equal to the rounded sum of all collected grades multiplied by the corresponding weights. To get the positive final grade 5 is necessary to pass the written exam.			
<i>Group Assignments</i>	30%		Three group assignments (maximum of two students per group) each worth 10% on given theoretical and empirical problem sets. Assignments discussed during the seminars.
<i>Referee Report</i>	20%		Empirical group assignment (maximum of two students per group) over the topic selected by the students and approved by the lecturer. Each group selects an empirical paper related to the topic of this course and writes a concise referee report style overview of the paper. Final version presented online during the seminar.
<i>Written exam</i>	50%	2 h	The exam tests the knowledge of students from all topic. Exam includes 3 questions with total of 9-12 sub-questions. The material tested is predominantly uses the material from slides and assignments. The final grade is rounded to 0.1.

Author	Publication year	Title	Volume and/or publication number	Publication place and publisher
<b>Required reading</b>				
[1] Wooldridge, J.M.	2010	Econometric Analysis of Cross Section and Panel data, 2 <sup>nd</sup> Edition		The MIT Press, Cambridge, Massachusetts
[2] Roodman, D.	2009	A Note on the Theme of Too Many Instruments	71(1) 135-158	Oxford Bulletin of Economics and Statistics

[3] Andrews, I. and J. Stock and L. Sun	2019	Weak Instruments in IV Regression: Theory and Practice	(1) 727-753.	Annual Review of Economics.
[4] Abadie, A.	2021	Using Synthetic Controls: Feasibility, Data Requirements, and Methodological Aspects	59(2), 391-425	Journal of Economic Literature
<b>Additional reading</b>				
[1] Baltagi. B. H. (Editor)	2014	The Oxford Handbook of Panel Data		Oxford University Press
[2] Cameron, C.A. and P. K. Trivedi	2005	Microeconometrics: Methods and Applications		Cambridge University Press