



Subject card

Subject name and code	QUANTITATIVE METHODS IN THE INTERNATIONAL ECONOMY, PG_00058453						
Field of study	Economics, Economic Analytics						
Date of commencement of studies	October 2023	Academic year of realisation of subject			2024/2025		
Education level	first-cycle studies	Subject group			Optional subject group Subject group related to scientific research in the field of study		
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	2	Language of instruction			Polish		
Semester of study	4	ECTS credits			2.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Statistics and Econometrics -> Faculty of Management and Economics						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Aleksandra Kordalska				
	Teachers		dr Aleksandra Kordalska				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	30.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	30		5.0		15.0	50
Subject objectives	Describes the possibilities of quantitative methods application in terms of their selection and collecting reliable data						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_K03] Critically evaluates their own knowledge necessary to solve cognitive and practical problems, supplementing gaps with input from external experts.		shows a critical approach to reliable data sources selection necessary to conduct analyses in international economics		[SK5] Assessment of ability to solve problems that arise in practice		
	[K6_U06] Acquires new specialized knowledge related to the field of economic analytics by planning a personal lifelong learning strategy		acquires new knowledge necessary to conduct analyses in international economics		[SU3] Assessment of ability to use knowledge gained from the subject		
Subject contents	<p>Introduction to the course, quantitative versus qualitative approach to analyses in the field of international economics, examples of applications and the problem of choosing a research method</p> <p>Introduction to the software - the use of selected R packages with examples of applications in international economics</p> <p>Macroeconomic, sectoral, and microeconomic sources of data for international analyses and examples of their use</p> <p>Merging economic data that come from different sources</p> <p>Comparative advantages - revealed comparative advantages index</p> <p>Globa value chais, value added in exports - methods of gross exports decomposition, measures of participation and position in GVCs</p> <p>Functional specialisation in international trade - a way of identification/measuring, headquarter and fabrication economies</p> <p>Creating a database with two-level (country-year) and multi-level (e.g. country-section-year) identification</p> <p>Calculation of macroeconomic and sectoral indicators</p> <p>Methods of an initial analysis of the created databases (descriptive statistics, graphical methods of presenting multidimensional data, outliers)</p> <p>Preliminary examination of the relationship between data, selection of variables for analysis: exo- and endogenous variables - illustration on the example of determinants of economic growth</p> <p>One- and multi-dimensional analyses on the example of the absolute and conditional convergence model</p> <p>Bilateral data and gravity model for international trade</p> <p>Network anayses</p> <p>Preparing of the project</p>						
Prerequisites and co-requisites	macroeconomics, microeconomics, statistics, econometrics						

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		project	60.0%
Recommended reading	Basic literature	Krugman, P., Obstfeld, M., Melitz, M.J. (2018). <i>Ekonomia międzynarodowa</i> , tom 1 i 2, Warszawa: Wydawnictwo Naukowe PWN. Maddala, G.S. (2006). <i>Ekonometria</i> . Warszawa: Wydawnictwo Naukowe PWN. Biecek, P. (2015). <i>Analiza danych z programem R</i> . Warszawa: Wydawnictwo Naukowe PWN.	
	Supplementary literature	Feenstra, R.C., Taylor, A.M. (2020). <i>International Economics</i> , Worth Publishers. Maddala, G.S, Lahiri, K. (2011). <i>Introduction to Econometrics</i> , Wiley.	
	eResources addresses	Adresy na platformie eNauczanie: Metody ilościowe w ekonomii międzynarodowej 2025 - Moodle ID: 36472 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=36472	
Example issues/ example questions/ tasks being completed	<p>Given the data on GDP per capita and trade openness (100 countries, 1980-2010) calculate average annual rate of growth of each of the analysed countries in the period 1980-2010 and verify the hypothesis of conditional beta convergence.</p> <p>On the basis of gross exports decomposition (Wang, Wei, and Zhu, 2013) answer the question of the size of domestic and foreign value-added embodied in gross exports for 28 EU countries in the period 2005-2018.</p>		
Work placement	Not applicable		

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