GDAŃSK UNIVERSITY OF TECHNOLOGY

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	Katedra Statystyki i Ekonometrii -> Faculty of Management and Economics		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Aleksandra Kordalska	
	Teachers		

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] demonstrates the ability to think critically and analytically and integrates knowledge from many disciplines, acting in an entrepreneurial manner	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 knowledge by planning lifelong learning strategies	acquires new knowledge necessary to conduct analyses in international economics	[SU3] Assessment of ability to use knowledge gained from the subject

Subject contents

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
Introduction to the software - the use of selected modules of the STATA package (and / or R packages) with examples of applications in international economics
Macroeconomic, sectoral, and microeconomic sources of data for international analyses and examples of their use
Merging economic data that come from different sources
Value added in exports - methods of gross exports decomposition
Functional specialisation in international trade - a way of identification
Creating a database with two-level (country-year) and multi-level (e.g. country-section-year) identification
Calculation of macroeconomic and sectoral indicators
Methods of an initial analysis of the created databases (descriptive statistics, graphical methods of presenting multidimensional data, outliers)
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
One- and multi-dimensional analyses on the example of the absolute and conditional convergence model
Bilateral data and gravity model for international trade
Preparing of the project

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%	100.0%

Recommended reading	Basic literature	Krugman, P., Obstfeld, M., Melitz, M.J. (2018). Ekonomia międzynarodowa, tom 1 i 2, Warszawa: Wydawnictwo Naukowe PWN. Maddala, G.S. (2006). Ekonometria. Warszawa: Wydawnictwo Naukowe PWN. Biecek, P. (2015). Analiza danych z programem R. Warszawa: Wydawnictwo Naukowe PWN.
	Supplementary literature	Feenstra, R.C., Taylor, A.M. (2020). International Economics, Worth Publishers. Maddala, G.S, Lahiri, K. (2011). Introduction to Econometrics, Wiley.
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	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. 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.	
Work placement	Not applicable	