University of Gdańsk

Subject card

Subject name and code	Applications of Econometrics, PG_00199303		
Field of study	Economics		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	Master's studies	Subject group	Obligatory subject group in the field of study 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	1	Language of instruction	Polish
Semester of study	2	ECTS credits	3.0
Learning profile	academic	Assessment form	credit
Conducting unit	Department of International Economics and Economic Development -> Faculty of Economics -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Dorota Ciołek, prof. UG	
	Teachers	mgr Miłosz Aubrecht-Prądzyński dr hab. Dorota Ciołek, prof. UG	

Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	15.0	0.0	30.0	0.0	60
	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	60	0.0	15.0	75

Subject objectives	Understanding the relationship between the mapped economic system and its model and simple tools for measuring the relationship between the economic variables present in the model.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[EKONMU2_U04] can forecast and model complex economic and social processes using quantitative and qualitative methods and tools developed by economic sciences (including statistics and econometrics)	is able to build and estimate a single-equation econometric model and verify its forecasting properties and use the model to build forecasts along with assessing their ex ante accuracy	[SU2] presentation/project/paper/ report [SU4] test/exam - oral or written
[EKONMU2_W03] has a knowledge of relations between economic phenomena, entities and organisations as well as public institutions functioning in the national, international and intercultural spheres	knows econometric tools that can be used to analyze economic processes in both macro and microeconomic terms	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
[EKONMU2_U15] can independently expand and improve acquired knowledge and skills in economics; is open to new ideas and techniques; tends to learn using any accessible method and to interact with other participants of the learning process	in teams of 4-6, a project is prepared on the application of econometrics. This project is discussed and approved during consultations with the instructor and then presented in class.	[SU3] text preparation/written work
[EKONMU2_U01] can creatively interpret and explain economic and social phenomena and relations between them, using acquired knowledge of economics, finance and management sciences	can propose an econometric model suitable for verifying specific hypotheses or research goals	[SU4] test/exam - oral or written
[EKONMU2_U02] can use acquired knowledge to describe and analyse the causes and course of economic and social processes and phenomena, and can formulate his/her own opinions and critically select data and analysis methods based on the achievements of economic and social sciences	is able to obtain appropriate statistical data and use them to estimate, verify and interpret an econometric model	[SU4] test/exam - oral or written
[EKONMU2_K01] recognises the importance of knowledge in the field of economics in the process of identifying and solving economic problems and of consulting experts when having difficulties in solving them independently	is able to search for research and analysis results using econometric methods appropriate to the analyzed research or decision-making problems	[SK4] test/exam - oral or written
[EKONMU2_U03] can analyse causes and course of economic and social processes and phenomena, formulate his/her own opinions on the subject, construct research hypotheses, and select and apply methods of their verification	is able to build and estimate an econometric model and verify and interpret it	[SU4] test/exam - oral or written
[EKONMU2_K02] is aware of the level of their knowledge in the area of solving complex problems in economic,; understands the need to extend and update this knowledge throughout his/her life	knows the possibilities of using econometric modeling to analyze economic processes	[SK4] test/exam - oral or written
[EKONMU2_U08] can independently analyse economic and social phenomena and processes, and can perform a theoretically deepened assessment of such phenomena, using appropriately selected research method	is able to build and estimate an econometric model and verify and interpret it	[SU4] test/exam - oral or written
[EKONMU2_W06] has an in-depth understanding of statistical and econometric methods and tools for describing and modelling macro- and microeconomic economic structures and public institutions, as well as the processes taking place within them.	knows the basic types of single-equation econometric models, methods of their estimation, tools for their verification and ways of interpreting them in relation to specific relationships in economics and other social sciences	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion

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<tr><td>Subject contents</td><td>1) Introduction - reminder of the most important concepts and principles from the basics of econometrics.

2) Macroeconomic function of consumption (cross-sectional and time-wise) on the example of the Polish economy and all European Union countries. Elements of the theory of dynamic econometric models.

3) Hedonic price model on the example of the Tricity real estate market.

4) Convergence hypothesis in the neoclassical growth model - cross-sectional and panel. absolute and conditional convergence models for the European Union countries and for the global economy. Elements of the panel modeling theory.

5) Modeling company bankruptcy and scoring models - examples of logit and probit modeling.

6) Forecasting based on time series for annual and seasonal data using dummy variables

The course is delivered both during scheduled classes and outside class through students' independent completion of problem-solving tasks and projects, which are regularly discussed and consulted with the course instructor.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Student should previously acquire knowledge in the field of: basics of econometrics, basics of statistics, basics of macroeconomics, basics of microeconomics.</td></tr>
<tr><td>Assessment methods and criteria</td><td><table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Practical test</td><td>51.0%</td><td>30.0%</td></tr>
<tr><td>Project</td><td>51.0%</td><td>20.0%</td></tr>
<tr><td>Written or oral exam</td><td>51.0%</td><td>50.0%</td></tr>
</table></td></tr>
<tr><td>Recommended reading</td><td><table>
<tr><td>Basic literature</td><td>M. Gruszczyński, M. Podgórska (red.), (2004), Ekonometria, Szkoła Główna Handlowa w Warszawie

M. Gruszczyński (red.), (2012), Mikroekonometria. Modele i metody analizy danych indywidualnych, Wydawnictwo: Wolters Kluwer SA

A.Zeliaś, B.Pawełek, S.Wanat (2003) Prognozowanie ekonomiczne Teoria, Przykłady, Zadania, PWN, Warszawa</td></tr>
<tr><td>Supplementary literature</td><td>Ciołek, D., Brodzicki, T. (2016). Determinanty produktywności polskich powiatów. Bank i Kredyt, 47 (5), 463-494;
Ciołek, D., Brodzicki, T. (2016). Determinanty działalności eksportowej polskich firm produkcyjnych, Gospodarka Narodowa, 282(2), 59-76;
Nickell, S. (1997). Unemployment and Labor Market Rigidities: Europe versus North America, The Journal of Economic Perspectives, 11(3), 55-74.</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
</table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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