

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Introduction to Econometrics		Code 1011101461011130552
Field of study Logistics - Full-time studies - First-cycle studies	Profile of study (general academic, practical) general academic	Year /Semester 3 / 6
Elective path/specialty -	Subject offered in: Polish	Course (compulsory, elective) elective
Cycle of study: First-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 15 Classes: - Laboratory: - Project/seminars: -		No. of credits 3
Status of the course in the study program (Basic, major, other) other		(university-wide, from another field) university-wide
Education areas and fields of science and art social sciences		ECTS distribution (number and %) 3 100%
Responsible for subject / lecturer: dr Tomasz Brzęczek email: tomasz.brzeczek@put.poznan.pl tel. 61 665 33 92 Wydział Inżynierii Zarządzania ul. Strzelecka 11 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Student knows economics terms and laws.
2	Skills	Student can use computer and Excel.
3	Social competencies	Student can work on his own and in a group.
Assumptions and objectives of the course: C1 Acquiring knowledge about statistical methods of economic estimation. C2 Working out skills of estimation and verification of an econometric model. C3 Working out skills of an econometric model usage in forecasting and simulation.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Student knows Econometrics and its terms and typical economic models. - [K1A_W04] 2. Knows linear and not-linear models. - [K1A_W04] 3. Knows ordinary and generalised least squares methods (OLS, GLS). - [K1A_W04] 4. Knows problem of statistical significance problem. - [K1A_W04] 5. Knows analytical and smoothing methods of estimation. - [K1A_W04] 6. Knows forecast theory and its terms (forecast term, process and rules, error ex ante and ex post, accuracy)). - [K1A_W26]		
Skills:		
1. Solves logistics problem using an econometric model. - [K1A_U05] 2. Can estimate an econometric model using Excel and GRET software. - [K1A_U07] 3. Can assess statistical significance and fitness of model to data. - [K1A_U09] 4. Can calculate a forecast or simulation and their errors ex ante and ex post. - [K1A_U09] 5. Matches econometric methods to empirical data an logistics theory. - [K1A_U15]		
Social competencies:		
1. Student is conscious about role and meaning of econometric modeling in logistics. - [K1A_K01] 2. Is ready to work in forecasting team. - [K1A_K03] 3. Promotes forecasting in entrepreneurship. - [K1A_K06]		

Assessment methods of study outcomes		
Forming mark on a basis of questions concerning worked over problems.		
Summary mark (pass) on a basis of written test with tasks.		
Course description		
1. Econometrics and its basic terms. Econometric model and its terms. 2. Model estimation and verification with OLS method. Model function, ordinary least squares method (OLS) and its assumptions, determination coefficient R ² , Statistical significance test. Forecast and its error. Residuals series test. 3. Linear model with many explanatory variables. 4. Forecast theory and terms: rule and error ex ante and ex post, accuracy. 5. Examination of autocorrelation and unity roots. Stationary series forecasting (average and autoregression 6. Stationary process forecasting (naive method, moving average, exponential smoothing). 7. Trends. Linear and non-linear. Residuals autocorrelation. 8. Seasonality effects. Additive (mechanical and seasonal dummies method) and multiplicative (seasonality indices) and Winters' smoothing model. Didactics methods: lecture with analysis of problems		
Basic bibliography:		
1. Borkowski B., Dudek H., Szczesny W., Ekonometria. Wybrane zagadnienia, WN PWN, Warszawa 2004. 2. Kufel T., Ekonometria. Rozwiązywanie problemów z wykorzystaniem programu GRET, WN PWN, Warszawa 2011. 3. Prognozowanie gospodarcze. Metody i zastosowania, Cieślak M. (red.), WN PWN, Warszawa 2002. 4. Witkowska D., Podstawy ekonometrii i teorii prognozowania, Oficyna Ekonomiczna, Kraków 2006.		
Additional bibliography:		
1. Brzęczek T., Ocena efektów dywersyfikacji portfela produktowego w zakresie ryzyka sprzedaży całkowitej i trafności jej prognoz, Ekonometria I (55) 2017, s. 112-124. 2. Dittmann P., Prognozowanie w przedsiębiorstwie, PWE, Warszawa 2003. 3. Kufel T., Ekonometryczna analiza cykliczności procesów gospodarczych o wysokiej częstotliwości obserwowania, WN UMK w Toruniu, Toruń 2010.		
Result of average student's workload		
Activity	Time (working hours)	
1. Lectures	15	
2. Consultation	5	
3. Student	20	
Student's workload		
Source of workload	hours	ECTS
Total workload	40	3
Contact hours	20	2
Practical activities	0	0