POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

pl. M. Skłodowskiej-Curie 5, 60-965 Poznań

COURSE DESCRIPTION CARD - SYLLABUS

Course name
Basics of econometrics

Course

Field of study	Year/Semester
logistics	III/VI
Area of study (specialization)	Profile of study
not applicable	general academic
Level of study	Course offered in
First-cycle studies	Polish
Form of study	Requirements
full-time	elective

Number of hours

Lecture	Laboratory classes	Other (e.g. online)
Tutorials	Projects/seminars	
15		

Number of credit points

3

Lecturers

Responsible for the course/lecturer:

Phd. Tomasz Brzęczek,

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phone: 61 665 33 92

Faculty of Engineering Management

2 J.Rychlewski Str., room 331,

Responsible for the course/lecturer:

Prerequisites
Student knows basic statistics

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Course objective

To teach student knowledge about estimation of economic relations. To create skills of econometric modelling and learn how to use it in practice.

Course-related learning outcomes

Knowledge

1. Student knows terms of econometric linear model, linearisable model, goodness of fit, significancy and typical implementations of econometric models in logistics [P6S_WG_04].

2. Knows ordinary and general least squares methods (OLS and GLS) of data analysis [P6S_WG_04].

3. Studnt knows trends and the types of time series fluctuations [P6S_WG_04].

4. Student knows forecasting theory terms (forecast, simulation, forecasting process, error, accuracy) and apply them in logistics problems [P6S_WK_08].

Skills

1. Student can use econometric modeling and forecasting in logistics. Student matches a model to empirical data and logistics theory [P6S_UO_02; P6S_UU_01].

2. Can estimate a model using OLS and GLS methods also with usage of Excel and GRETL [P6S_UW_02].

3. Assess statistical significancy and the fitness of model to data [P6S_UW_03].

4. Estimates error of forecast ex ante and ex post [P6S_UO_02].

Social competences

1. Student is concious about forecasting role and meaning in logistics [P6S_KO_01-02].

2. Is ready to work in forecasting field projects and teams [P6S_KR_02].

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Forming mark is based on questions about already taught topics repetition.

Summary mark (pass) is based on written test with tasks and theoretical questions or topic presentation.

Programme content

1. Econometrics and its terms. Econometric model concept and usage. Regression and correlation

2. Estimationa and veryfication of econometric model, ordinary least squares method, determination coefficient, multiple regression

3. Forecasting theory. Terms, forecast, simulation, forecasting process, error, accuracy

4. Forecasting software. Functionality and examples

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5. Analysis of time series and choice of an appropriate model

6. Trends

7. Calculus of safe stock quantity to ensure a given level of demand satisfied

Teaching methods

case study, tutorial, project elements

Bibliography

Basic

1. Borkowski B., Dudek H., Szczesny W., Ekonometria. Wybrane zagadnienia, WN PWN, Warszawa 2004.

2. Cieślak M. (red.), Prognozowanie gospodarcze. Metody i zastosowania, WN PWN, Warszawa 2002.

3. Kufel T., Ekonometria. Rozwiązywanie problemów z wykorzystaniem programu GRETL, WN PWN, Warszawa 2011.

4. Witkowska D., Podstawy ekonometrii i teorii prognozowania, Oficyna Ekonomiczna, Kraków 2006.

Additional

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.

Breakdown of average student's workload

	Hours	ECTS
Total workload	75	3,0
Classes requiring direct contact with the teacher	25	2,0
Student's own work (literature studies, preparation for tutorials, preparation for tests) [1]	50	1,0

[1] delete or add other activities as appropriate