POZNAN UNIVERSITY OF TECHNOLOGY

COURSE DESCRIPTION CARD - SYLLABUS

Course name
Basics of econometrics

Course

Field of study
Logistics

Area of study (specialization)

Level of study
First-cycle studies

Form of study
part-time

Year/Semester
3/6

Profile of study
general academic

Course offered in
Polish

Requirements
elective

Number of hours

Lecture

Laboratory classes

Other (e.g. online)

Tutorials
16

Projects/seminars

Number of credit points
3

Lecturers

Responsible for the course/lecturer:

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ul. J.Rychlewskiego 2, 60-965 Poznań

Responsible for the course/lecturer:

Prerequisites
Student knows basic statistics

POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

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

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:

Partial grades:

1) tasks of model fitness to data measuring, forecasting errors calculus and of data deflating in Excel

2) mid-semester test including closed questions answering and short tasks solving

3) analysing case of modeling and forecasting of time series including seasonal effects.

Final grade (pass) results from sum of points of activities (1-3).

Programme content

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

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

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

4. Forecasting software. Functionality and examples

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	1,0
Student's own work (literature studies, preparation for tutorials, preparation for tests) [1]	50	2,0

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[1] delete or add other activities as appropriate