

SYLABUS PRZEDMIOTU W SZKOLE DOKTORSKIEJ

Tytuł	Microeconometrics
Tytuł w jęz. ang.	

Status przedmiotu	obowiązkowy dla: <i>ogólny SzD</i>
	do wyboru dla: <i>.....</i>

Autor/autorzy sylabusa:	Zespół :	koordynator: prof. Marek Gruszczyński
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		członek zespołu: dr Maja Rynko
		członek zespołu: dr Lucas van der Velde

Sygnatura przedmiotu:

Część A

1. Syntetyczna charakterystyka przedmiotu (główne hasła – około 400 znaków):

The course aim is to develop the ability of specifying, estimating and verifying econometric models based on microdata. Course on econometric methods dedicated to microdata. The subject of high practical context, important for Economics and management sciences (Nobel in economics in 2000 for J. Heckman and D. McFadden). Program of the course includes topics on modeling the qualitative and limited dependent variables as well as treatment effects estimation.

2. Słowa kluczowe (3 – 6 słów):

Keywords given by each topic (part C)

Część B

Przedmiotowe efekty uczenia się

Powiązanie z efektami uczenia się dla SzD

Wiedza (liczba efektów od 2 do 5)

W.1	Student describes the potential as well as drawbacks/ advantages and similarities/ differences of modelling binomial as well as multinomial (ordered and unordered) variables.	W_1, W_3, W_4
W.2	Student describes and assesses estimation results for the models	W_1, W_3, W_4

	explaining limited-dependent variable as well as for the models explaining count variable.	
W.3	Student describes the problem of endogeneity in microeconometrics and also demonstrates various experimental and quasi-experimental methods.	W_1, W_3, W_4
W.4	Student describes the methodology of treatment effects and assesses the results of treatment effects estimation.	W_1, W_3, W_4
Umiejętności (<i>liczba efektów od 2 do 5</i>)		
U.1	Student is able to: 1. Distinguish between micro- and microdata in statistics and econometrics. 2. Indicate the examples of microdata and the examples of macrodata which are created by aggregating the microdata. 3. Find the microdata bases concerned with social issues.	U_1, U_2
U.2	Student defines and describes models that explain: qualitative binomial variable, (b) qualitative ordered multinomial variable, (c) qualitative unordered multinomial variable, (d) limited-dependent variable, (e) count variable. Student defines and describes: (f) quantile regression, (g) question of endogeneity in microeconometrics, (h) method of instrumental variables, (i) experimental and quasi-experimental methods, (j) models of treatment effects.	U_1, U_2
U.3	Student executes basic estimation and testing exercises in Stata for the models explaining: (a) qualitative binomial variable, (b) qualitative ordered multinomial variable, (c) qualitative unordered multinomial variable, (d) limited dependent variable, (e) count variable. Student performs tasks of: (f) estimation with the use of quantile regression, (g) discussing the issue of endogeneity in examples of microeconomic models, (h) applying the instrumental variable in the regression model, (i) discussing the methodology of causation research, (j) estimation of treatment effects by matching.	U_1, U_2
U.4	Student prepares the written report on microeconomic project, indicating the theory, methodology, data sources and the results of estimation and verification of the models used.	U_1, U_2
Kompetencje społeczne (<i>liczba efektów od 1 do 3</i>)		
K.1	Student is aware of operational and research possibilities of microeconomic methodology in economics and management. In advocating the use of microeconometrics in economics and management student displays appropriate professional ethics.	K_1, K_3
K.2	Student is responsive to various types of data prevailing in economic research and also in management science, i.e. knows how to deal with micro vs. macrodata, as well as to their appearance in time: time series vs. cross section. Student is creative in advocating team research for modelling microdata with the use of methodology of microeconometrics	K_1, K_3

Część C

Semestralny plan zajęć:
1. Microeconomic models: introduction. Modelling binomial variables (1). Linear probability model (LPM). Logit model. Probit model. Keywords: microdata, binomial variable, linear probability model, logit, probit.
2. Modelling binomial variables (2). Accuracy table. Goodness-of-fit. Logit model for macrodata. Keywords: marginal effects and odds ratio, classification table, pseudo-R-squared, ROC curve.
3. Modelling ordered multinomial variables (1). Parallel regressions. Keywords: ordered variable, multinomial ordered model, parallel regressions, Brant test.
4. Modelling ordered multinomial variables (2). Generalized ordered model. Sequential data Keywords: generalised ordered model, sparse data, compensation effect, sequential model.
5. Modelling unordered multinomial variables (1). Multinomial logit. Conditional logit. Keywords: specific regressions, additive random utility, multinomial logit, conditional logit.
6. Modelling unordered multinomial variables (2). Mixed logit. Nested logit. Keywords: IIA assumption, Hausman test, nested logit, mixed logit, multinomial probit.
7. Corner solution models. Tobit models. Keywords: limited dependent variable, censored observation, corner solution model, tobit model.
8. Sample selection models. Truncated regression Keywords: truncated sample, Heckman selection model, selection equation, outcome equation.
9. Quantile regression Keywords: quantiles, quantile function, median regression, quantile regression.
10. Endogeneity in microeconometrics Keywords: endogeneity, omitted variable bias, simultaneous causality, missing data.
11. Experiments and quasi-experiments Keywords: treatment effects, selection bias, validity of experiments, differences-in-differences.
12. Method of instrumental variables Keywords: instrumental variable, instrument relevance, instrument exogeneity, 2SLS, LATE.
13. Regression discontinuity design (RDD) Keywords: discontinuity and RDD, sharp RDD, fuzzy RDD, RDD and IV.
14 Treatment effects estimation: matching estimation (1). Conditional independence assumption and overlap assumption. Metric matching. Propensity score matching Keywords: treatment effect, matching estimation, conditional independence, propensity score matching.
15. Treatment effects estimation: matching estimation (2). Matching methods. Properties of estimators. STATA procedures for matching. Keywords: nearest neighbour, caliper matching, radius matching, kernel estimation.
Literatura podstawowa (jeśli wybrane fragmenty publikacji zwartych, to wskazane podanie rozdziałów, ew. stron):
1. Class materials.
2. R. Winkelmann, S. Boes, Analysis of microdata, 2nd ed., Springer, 2009.
3. J.D. Angrist, J.-S. Pischke, Mastering ‘Metrics. The Path from Cause to Effect, Princeton University Press, 2015.
Literatura uzupełniająca (jeśli wybrane fragmenty publikacji zwartych, to wskazane podanie rozdziałów, ew. stron):
1. A.C. Cameron, P.K. Trivedi, Microeconometrics. Methods and applications, Cambridge University Press, 2005.
2. A.C. Cameron, P.K. Trivedi, Microeconometrics using Stata, revised edition, Stata Press, 2010.

3. D. A. Hensher, J.M. Rose, W.H. Greene, Applied choice analysis, Cambridge University Press, 2005.
4. J. S. Long, J. Freese, Regression models for categorical dependent variables using Stata, 2nd ed., Stata Press, 2006.
5. J. M. Wooldridge, Econometric analysis of cross section and panel data, 2nd ed., MIT Press 2010.
6. Mikroekonometria, ed. by M. Gruszczyński, authors: M. Bazyl, M. Gruszczyński, M. Książek, M. Owczarczuk, A. Szulc, A. Wiśniowski, B. Witkowski, 2nd edition, Wolters Kluwer 2012.

Część D	
Forma zajęć:	Wymiar zajęć w godz.:
Ogółem godzin <i>w tym:</i>	30
wykład	15
ćwiczenia	15
Elementy oceny końcowej (ogółem 100%), w tym:	
egzamin pisemny	65%
projekt mikroekonometryczny	35%
Liczba punktów ECTS	3,5

Część E
Metody dydaktyczne (nauczania) stosowane przez prowadzącego
M.1. wykład tradycyjny M.2. wykład z wykorzystaniem technik multimedialnych M.16. ćwiczenia z wykorzystaniem oprogramowania i sprzętu komputerowego

Część F
Metody weryfikacji (sprawdziany) osiągnięcia przedmiotowych efektów kształcenia
W.1. egzamin pisemny (<i>pytania otwarte, zadania</i>) W.7. projekt