UBBFSEGA
Universitatea Babeș-Bolyai | Facultatea de Științe Economice și Gestiunea Afacerilor
FSEGA CLUJ-NAPOCA

UNIVERSITATEA BABEȘ-BOLYAI
TRADIȚIE ȘI EXCELENȚĂ

Facultatea de Științe Economice și Gestiunea Afacerilor
Str. Teodor Mihali nr. 58-60
Cluj-Napoca, RO-400951
Tel.: 0264-41.86.52-5
Fax: 0264-41.25.70
econ@econ.ubbcluj.ro
www.econ.ubbcluj.ro

Subject: Econometrics

SYLLABUS

Topic 1. Introduction and background

1.1. Data structures in econometrics
1.2. Random variable, vector of random variables
1.3. Conditional expectations: properties, partial effect, elasticities
1.4. Linear projections
1.5. Asymptotic theory: convergence in probability/ in distribution
1.6. Law of large numbers, central limit theorem
1.7. Asymptotic properties of estimators
1.8. Introduction to econometric software: Stata, R, Eviews.

Topic 2. The single equation linear model

2.1. Ordinary least squares estimation (OLS): assumptions
2.2. Asymptotic properties and inference using OLS
2.2. Instrumental variables estimation: motivation, solutions
2.3. Two-stage least squares estimator
2.4. Solutions to omitted variables problem.

Topic 3. Specification tests in single equation linear model

3.1. Testing linear restrictions on coefficients, Wald statistic, LM tests
3.2. Testing functional form
3.3. Hausman test for endogeneity
3.4. Tests for heteroskedasticity.

Topic 4. Nonlinear econometric models

4.1. M-estimation methods, assumptions, properties
4.2. Hypothesis Testing: Wald tests, LR test, Score/LM tests
4.3. Maximum likelihood estimation
4.4. Discrete/ Counts response models
4.5. Generalized linear models
4.6. Duration models.

Topic 5. Panel data econometrics-introduction

5.1. Assumptions for pooled OLS
5.2. Linear unobserved effects models
5.3. Random/ Fixed effects methods.

References:

1. Wooldridge, J.M., *Econometric Analysis of Cross Section and Panel Data*, MIT Press, 2010.
2. Gujarati, D.N. and Porter, D.C., *Basic Econometrics*, McGraw-Hill, 2009.
3. Kleiber, C. and Zeileis, A. *Applied Econometrics with R*, Springer, 2008.
4. Baum, C.F., *An Introduction to Modern Econometrics Using Stata*, Stata Press, 2006.
5. Davidson, R. and MacKinnon, J.G., *Econometric Theory and Methods*, Oxford University Press, 2004.