



ECONOMETRICS

Basic data of the subject			
Academic Unit:	Faculty of Life and Environmental Sciences		
Course title:	Econometrics		
Study program:	Agribusiness Management		
Level:	Master (MSc)		
Course status:	Obligatory (O)		
Study year:	1 year / 1 semester		
Number of hours per week:	3 + 2		
Credit value – ECTS:	6 ECTS		
Time / location:	To be announced		
Lecturer:	Prof. Ass. Dr. Anera Musliu		
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Course description:	Econometrics is an elementary, but comprehensive, introduction to the empirical research of economic problems using (mostly linear) regression methodology. The course deals with the application of statistical methods for testing and evaluating economic hypotheses by being focused on the topics of agribusiness. The main topics covered include review of issues on statistical data analysis, statistical probability and inference, linear regression model, and problems related to regression analysis in agribusiness. Also, the use of statistical and econometric software to analyze data is an integral part of the course.		
Course objectives:	The aims of this course include providing a more detailed presentation of statistical concepts compared to those offered in course of the basic statistics, providing the basics of econometric analysis focusing on one- and multi-factor regression methodology (mainly the OLS method), providing a comprehensive understanding of data analysis on economic problems and how to implement this knowledge in the topics of agribusiness. Another aim of this course is to gain knowledge of a computer data analysis package.		
Learning outcomes:	Upon successful completion of this course, students will be able to demonstrate understanding and application of the following skills to: ▪ Interpret the key concepts of econometrics, ▪ Formulate an empirical model from various economic phenomena, ▪ Collect quantitative data from national and international databases, ▪ Conduct an empirical analysis through the OLS method, ▪ Execute diagnostic tests of linear regressions, ▪ Evaluate the results from the empirical analysis, ▪ Demonstrate proficiency in using econometric software (STATA).		
Contribution on student load (must correspond with learning outcomes)			
Activity	Hours	Days/week	Total
Lectures	3	13	39



Exercise theoretical/laboratory	2	13	26
Practice work	/	/	/
Contact with lecturer/consultations	1	15	15
Field exercises	/	/	/
Mid-terms, seminars	3	2	6
Homework	1	15	15
Individual time spent studying (at the library or home)	1	15	15
Final preparation for the exam	1.5	15	22
Time spent in evaluation (tests, quiz, final exam)	3	2	6
Projects, presentations, etc.	3	2	6
Total			150 hours (6 ECTS)
Teaching methods:	Lectures, exercises, discussions, consultations, course projects, homework, intermediate tests, exams, STATA exercises		
Evaluation methods:	▪ Regular attendance: 10%, ▪ Intermediate test I: 30%, ▪ Intermediate test II: 30%, ▪ Exercises: 10%, ▪ Course project: 20%.		
Literature			
Basic Literature:	Abazi, H. (2022) Hyrje në Ekonometri. Wooldridge, J. (2018) Introductory Econometrics: A Modern Approach. CENGAGE Learning Custom Publishing. Wooldridge, J. (2011) Solutions Manual and Supplementary Materials for Econometric Analysis of Cross Section and Panel Data. MIT Press.		
Additional Literature:	Gujarati, D. (2011) Basic Econometrics. Mcgraw Hill Education. Baltagi, B.H. (2011) Econometrics. Springer. Osmani, M. (2004) Metodat e Ekonometrisë, Universiteti i Tiranës. Wooldridge, J. (2010) Econometric Analysis of Cross Section and Panel Data. MIT Press.		

Designed study plan:		
Week	Lectures	Exercises
<i>First week:</i>	Introduction to the basics of	Discussion and distribution of



	econometrics (Understanding econometrics, Econometrics and applied statistics, Practical use of econometrics)	the course project topics.
<i>Second week:</i>	Econometrics and economic data (What is econometrics; Application of econometrics; Steps in empirical economic analysis; Structure of economic data; Causality, ceteris paribus and counterfactual reasoning)	Computer Exercises
<i>Third week:</i>	Simple regression analysis (Definition of the simple regression model; The benefit of estimations according to the OLS method; Regression with an independent variable; Interpretation)	Computer Exercises
<i>Fourth week:</i>	Simple regression analysis (Characteristics of OLS estimates in each data sample; Algebraic properties; Goodness of fit; Examples)	Computer Exercises
<i>Fifth week:</i>	Properties of regression coefficients and hypothesis testing (Random components of regression coefficients; Gauss-Markov assumptions; Impartiality of regression coefficients; Accuracy of regression coefficients)	Computer Exercises
<i>Sixth week:</i>	Properties of regression coefficients and hypothesis testing (Formulation of hypotheses; Hypothesis testing (t-test); F test of goodness of fit)	Computer Exercises
<i>Seventh week:</i>	Multiple Regression Analysis: Evaluation (Motivation for multiple regressions; Mechanics and interpretation of OLS)	Computer Exercises
<i>Eighth week:</i>	Intermediate test I	Consultations
<i>Ninth week:</i>	Expected value of the OLS estimators (Inclusion of irrelevant variables; Variance of OLS estimators; Efficiency of OLS; Suggestions about terminology)	Computer Exercises



<i>Tenth week:</i>	Nonlinear models and transformation of variables (Linearity; Logarithmic transformations; Semi-logarithmic models (lin-log and log-lin); Distribution term; Non-linear regression; Use of logarithmic functional forms)	Computer Exercises
<i>Eleventh week:</i>	Statistical Inference	Computer Exercises
<i>Twelfth week:</i>	Binary Variables (Description of qualitative information; Regressions with a binary variable; Spanning more than two categories and multiple sets of dummy variables; Slope dummy variables)	Computer Exercises
<i>Thirteenth week:</i>	Diagnostic Tests (Multicollinearity; Heteroscedasticity)	Computer Exercises
<i>Fourteenth week:</i>	Diagnostic Tests (Normality; Model specification)	Computer Exercises
<i>Fifteenth week:</i>	Intermediate test II	Presentation of the course projects
Academic policies and rules of conduct:		
▪ Students should be aware of and respect the institution and Code of ethics. ▪ Students should respect the schedule of lectures, and exercises and be attentive. ▪ It is mandatory to possess and presents a student ID card in the mid-terms and exam, ▪ During the compilation of course projects, students must adhere to the instructions given by the professor. ▪ During the exam is forbidden the use of mobile phones.		