COURSE OUTLINE

(1) GENERAL

SCHOOL	SCHOOL OF INFORMATION SCIENCES & TECHNOLOGY		
ACADEMIC UNIT	DEPARTMENT OF STATISTICS		
LEVEL OF STUDIES	1st Cycle (UNDERGRADUATE)		
COURSE CODE	**6175**	**SEMESTER**	**7th**
COURSE TITLE	**Econometrics**		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**CREDITS**
Lectures	4	8
Workshops		
Labs	2	

COURSE TYPE	Elective
PREREQUISITE COURSES:	
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	GREEK
IS THE COURSE OFFERED TO ERASMUS STUDENTS	YES
COURSE WEBSITE (URL)	https://www.dept.aueb.gr/en/stat/content/econometrics-8-ects

(2) LEARNING OUTCOMES

Learning outcomes
The aim of this course is to provide students with the learning of using appropriate econometric methods, models and techniques required for data analysis. After successfully completing the course, students will be able to: • Know and apply a wide range of econometric models to empirical economic and financial problems • Learn the fundamentals in econometric inference allowing them to understand which type of analysis is necessary and how it can be correctly implemented • Estimate the parameters of econometric models • Conduct diagnostic tests of autocorrelation and heteroskedasticity of residuals, and solve these problems by using appropriate models and techniques • Conduct structural break-point tests, and estimate structural change-point models • Estimate seemingly unrelated regression equations (SURE) models, and panel data models and apply them to empirical economic problems • Be able to apply, using the R package, econometric models to empirical economic/financial problems and applications
General Competences
• Search, analysis and synthesis of data and information, using the necessary technologies • Adaptation to new situations

- Decision-making
- Autonomous work
- Teamwork
- Working in an international environment
- Working in an interdisciplinary environment
- Generating new research ideas
- Respect for diversity and multiculturalism
- Respect for the natural environment
- Demonstrating social, professional and ethical responsibility and sensitivity to gender issues
- Exercising criticism and self-criticism
- Promoting free, creative and inductive thinking

(3) SYLLABUS

The course introduces and presents the fundamental theory of econometric models, methods and techniques, which are necessary in the research and empirical analysis of economic and financial data. First, the theory of multiple regression models is presented. The variable/model selection problem, the use of dummy variables, and the problem of multicollinearity are examined. Emphasis is given on the application of the theory, estimation of the model parameters, examination of the assumptions of residuals using diagnostic tests, and the interpretation of results. The autocorrelation and heteroskedasticity tests of residuals are introduced and presented in detail, and the generalized least squared (GLS) methods and techniques are developed in real empirical applications. Break-point models and the corresponding tests for structural changes in economic data are presented and developed. Seemingly unrelated regression equations (SURE) models and panel data models, and the techniques for estimating their parameters are presented. The underline theory, methods and models are implemented to empirical economic and financial problems using the statistical package R.

Knowledge of Regression and Introduction to economic analysis, will be useful

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	Face-to-face
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	**YES**
TEACHING METHODS	

Activity	***Semester workload***
Lectures	40
Lab Exercise	20
Studying and Analyzing Bibliography	50
Tutorial	15
Project	15
Assignment	10
Self Study	50
Course Total	**200**

STUDENT PERFORMANCE EVALUATION .	Written examination at the end of the semester: 80% Written Assignment (Project): 20%

	Information is available at eclass

(5) ATTACHED BIBLIOGRAPHY

- Τζαβαλής Η., (2008). «Οικονομετρία», Εκδόσεις Οικονομικού Πανεπιστημίου Αθηνών.
- Stock, J.H., and Watson, M.W. (2017). Introduction to Econometrics, 3rd edition, Pearson
- Gujarati, D.N. (2008). Basic Econometrics. New York: McGraw-Hill
- Pindyck, R.S. and Rubenfeld, D.S. (1991). Econometric Models and Economic Forecasts. New York: McGraw-Hill