Syllabus

Course Description

Course Title	Econometrics for Economics
Course Code	27347
Course Title Additional	
Scientific-Disciplinary Sector	ECON-05/A
Language	English
Degree Course	Bachelor in Economics and Management
Other Degree Courses (Loaned)	
Lecturers	Prof. Francesco Ravazzolo, Francesco.Ravazzolo@unibz.it https://www.unibz.it/en/faculties/economics-management/academic-staff/person/36066 Dr. Gery Andres Diaz Rubio, GeryAndres.DiazRubio@unibz.it https://www.unibz.it/en/faculties/economics-management/academic-staff/person/51046
Teaching Assistant	
Semester	First semester
Course Year/s	3
CP	6
Teaching Hours	36
Lab Hours	20
Individual Study Hours	-
Planned Office Hours	
Contents Summary	- Matrix Algebra, Stochastic Issues and Distribution Theory - Linear Regression with a Single Regressor and with¿ Multiple Regressors - Hypothesis Tests and Confidence Intervals in Linear¿Regression Models

	- Special topics in linear regressions, such as¿ heteroscedasticity and autocorrelation - Regression with Panel Data (Advantages and limitations of¿ fixed and random effects regression) - Regression with a Binary Dependent Variable, Categorical¿ data analysis
Course Topics	This introductory econometrics course provides a comprehensive overview of statistical methods for analyzing economic data. It starts with the foundational concepts of Matrix Algebra, Stochastic Issues, and Distribution Theory, which are essential for understanding the underlying principles. The core of the course focuses on Linear Regression, beginning with a single regressor and expanding to models with multiple regressors. The students will learn to perform Hypothesis Tests and construct Confidence Intervals to draw valid conclusions from your data. The curriculum also addresses common real-world challenges in regression, such as heteroscedasticity and autocorrelation. Finally, the course covers advanced topics in data analysis, including a detailed examination of Regression with Panel Data, exploring the differences between fixed and random effects, and methods for analyzing qualitative data through Regression with a Binary Dependent Variable and Categorical Data Analysis.
Keywords	Linear Regression, Hypothesis Testing, Panel and Binary Data, Econometric models
Recommended Prerequisites	Basic knowledge of statistics and mathematics
Propaedeutic Courses	
Teaching Format	Lectures, practical labs, group project, face-to-face coaching and mentoring, guest lectures from external experts.
Mandatory Attendance	Attendance not compulsory but recommended
Specific Educational Objectives and Learning Outcomes	ILO (Intended Learning Outcomes) ILO 1 Knowledge and understanding ILO 1.1 knowledge of basic and intermediate level mathematical tools for understanding and analysing economic mechanisms

	through theoretical models and empirical applications ILO 1.2 knowledge of tools for static, dynamic, and comparative analysis of data on individuals, enterprises and economies ILO 1.3 knowledge and understanding of descriptive statistics, the fundamentals of probability theory and sample methods, standard distributions and their application to economic analysis as well as linear and non-linear regression ILO 2 Ability to apply knowledge and understanding ILO 2.1 know how to analyse economic data using descriptive statics, parametric and non-parametric methods as well as linear and non-linear regression and interpret the results ILO 2.2 know how to set up and carry out an empirical project using econometric software and financial or economic databases ILO 2.3 knowing how to use IT tools for the analysis of economies ILO 3 Making judgements ILO 3.1 choose the most appropriate quantitative and qualitative methods of analysis ILO 3.2 find the necessary information in databases, legal sources and scientific literature ILO 3.3 using logical reasoning to combine information and analytical methods, also using modern software packages, to arrive at a solution ILO 4 Learning ability ILO 4.1 retrieve information from databases, scientific literature, laws and regulations as required in professional life ILO 4.2 to analyse, critically process and integrate data, information and future experience, also using advanced software
Specific Educational Objectives and Learning Outcomes (additional info.)	
Assessment	For attending students doing the mid-term assignment: written exam and a mid-term assignment. The written exam includes an essay and practitcal questions to test knowledge of theory, method

	and application skills. Oral group assignment carried in groups in the mid-term in a form of a presentation. For non-attending students or attending students without mid-term assignment: written exam. The written exam includes two essays and several practical questions to test knowledge of theory,
Evaluation Criteria	Final mark for students doing the mid-term assignment is a sum of marks from the group assignment and a written exam. Student will analyse econometric problems in both academic and practical contexts, displaying effective quantitative problem-solving skills. With a clarity of answers and mastery of research method, ability to collect and process the data, make critical comparisons and judgements, summarize, establish and measure the relationships within the project. An assignment also test student's ability to work in a team, creativity, IT and communication skills, critical thinking, cooperation and demonstrate individual's reflection and judgement. Final written exam. Final mark for students without the mid-term assignment is the result of the written exam.
Required Readings	Slides provided by professor.
Supplementary Readings	Christiaan Heij, Paul de Boer, Philip Hans Franses, Teun Kloek, and Herman K. van Dijk, Econometric Methods with Applications in Business and Economics, Oxford University Press. Marno Verbeek, A Guide to Modern Econometrics, Wiley 4th Edition. Jim H. Stock and Mark W. Watson, Introduction to Econometrics, Pearson International 3d Edition.
Further Information	
Sustainable Development Goals (SDGs)	Quality education, Gender equality, Partnerships fot the goals, Industry, innovation and infrastructure, Climate action, Decent work and economic growth