Syllabus

Course Description

Course Title	Econometrics
Course Code	27278
Course Title Additional	
Scientific-Disciplinary Sector	ECON-05/A
Language	Italian
Degree Course	Bachelor in Economics, Politics and Ethics
Other Degree Courses (Loaned)	
Lecturers	dr. Greta Goracci, Greta.Goracci@unibz.it https://www.unibz.it/en/faculties/economics-management/academic-staff/person/46136 Dr. Gery Andres Diaz Rubio, GeryAndres.DiazRubio@unibz.it https://www.unibz.it/en/faculties/economics-management/academic-staff/person/51046 dr. Aldo Paolillo, Aldo.Paolillo@unibz.it https://www.unibz.it/en/faculties/economics-management/academic-staff/person/48246
Teaching Assistant	
Semester	Second semester
Course Year/s	2
CP	7
Teaching Hours	42 (18 Dr. Goracci, 24 Dr. Diaz Rubio)
Lab Hours	21
Individual Study Hours	-
Planned Office Hours	21 (9 Dr. Goracci, 12 Dr. Diaz Rubio)
Contents Summary	The course explores various aspects of econometric analysis with the aim of providing analytical tools useful for the study and interpretation of complex phenomena in the economic and social

	sciences. The programme is divided into the following modules: (1) matrix algebra; (2) the linear regression model and its main extensions; (3) ARCH and GARCH models for volatility analysis; (4) panel data analysis; (5) the Logit model. Each topic is treated in a rigorous theoretical manner and accompanied by application examples. The teaching includes assisted exercises, aimed at fostering an in-depth understanding of the content, and the elaboration of empirical analyses on real data using the statistical software R
Course Topics	Fundamentals of matrix algebra for econometrics Linear regression models: single and multiple regressors Statistical inference in linear regression: hypothesis tests and confidence intervals The maximum likelihood method Extensions of linear regression: autocorrelation and heteroschedasticity Volatility models: ARCH and GARCH Regression models for panel data Logit model
Keywords	Linear regression; volatility, panel data, Logit model
Recommended Prerequisites	probability and statistics
Propaedeutic Courses	Probability and Statistics course strongly recommended
Teaching Format	Lectures, practical workshops, group project
Mandatory Attendance	Participation is recommended, but not compulsory
Specific Educational Objectives and Learning Outcomes	ILO (Intended Learning Outcomes) ILO 1 Knowledge and understanding ILO 1.1 estimation and interpretation of econometric models for

	empirical analysis of previous problems; ILO 1.2 ability to model social and economic phenomena; ILO 1.3 ability to give an economic interpretation to the results of various mathematical-statistical models applied to economics; ILO 1.4 basic knowledge of data management and computer programming for statistical and econometric analysis of socio-economic data; ILO 1.5 knowledge of the technical vocabulary of the subjects in this learning area. ILO 2 Ability to apply knowledge and understanding: ILO 2.1 ability to interact with native speakers fluently and spontaneously on economic topics; ILO 2.2 ability to independently analyse data and detect and explain relationships between real phenomena; ILO 2.3 ability to construct and verify simple statistical and econometric models; ILO 2.4 ability to use quantitative methods to solve problems in economics; ILO 2.5 ability to read, write and communicate in the technical language of quantitative methods in the three official languages of instruction ILO 3 Making judgement ILO 3.1 Acquisition of the capacity for judgement and methodological tools useful for the critical analysis of data, sources, assumptions and implications of scientific practice, the political, ethical and legal context within which economic phenomena are set and with which they interact ILO 4 Communication skills ILO 4.1 Fluency (oral and written) in Italian, German and English, including translation between these languages. Intercultural competence. Conceptual awareness, synthesis and written expression, particularly in the drafting of scientific or science-based documents

	ILO 5 Learning skills ILO 5.1 Promotion of critical thinking and analytical skills to focus on complex problems in their long-term dynamics and the variety of their implications, including ethical ones
Specific Educational Objectives and Learning Outcomes (additional info.)	
Assessment	(60% of the final subject grade): Final written examination ILOs assessed: 1, 2, 3, 5 (40% of the final subject grade): Group project Analysis of a real data set using the R ILOs assessed: 1, 2, 3, 4, 5
Evaluation Criteria	Final written examination: 60% Project: 40% Students must pass the final examination (i.e. correctly answer at least 60% of the questions in the questions in the examination) to obtain a passing grade in the course
Required Readings	Jim H. Stock and Mark W. Watson, *Introduction to Econometrics*, Pearson International 3d Edition.
Supplementary Readings	
Further Information	
Sustainable Development Goals (SDGs)	Gender equality, Quality education