Freie Universität Bozen
Libera Università di Bolzano
Università Liedia de Bulsan

Syllabus
Course description

Course title	Econometrics for PPE
Course code	27221
Scientific sector	SECS-P/05
Degree	L-33 Bachelor in Economics and Social Sciences
Semester and academic year	2nd semester 2023/2024
Year	2
Credits	8
Modular	No

Total lecturing hours	48 (20 hours F. Ravazzolo + 28 hours G. Goracci)
Total lab hours	---
Total exercise hours	24 (TBA)
Attendance	suggested, but not required
Prerequisites	Probability and Statistics course strongly suggested
Course page	https://www.unibz.it/en/faculties/economics-management/bachelor-economics-social-sciences/

Specific educational objectives	The course refers to the typical educational activities and belongs to the scientific area of Economics. The aim of the module is to develop specific skills in applied econometric research by a mix of lectures, computer classes, and tutorials where each topic is discussed in both methodology and application. The intention is to provide a description of a number of different research methods and examples of how they may be applied to management and social science research problems for the collection and analysis of data. More specifically educational objective include: - Ability to interpret the results of econometric analysis and draw appropriate conclusions. - Ability to apply theoretical and empirical models to a real world context. - Learn specialised statistical/econometric software to perform econometric analysis. - Ability to efficiently plan and manage independent economic and business study. - Enhance organisational, analytical and communication skills through participation in group project work

Lecturer	Francesco Ravazzolo Office E2.07 Tel.: 0471 013133 Email: francesco.ravazzolo@unibz.it Web: https://www.unibz.it/it/faculties/economics-management/academic-staff/person/36066-francesco-ravazzolo

	Greta Goracci Office I 3.06 Email: greta.goracci@unibz.it Web: https://www.unibz.it/de/faculties/economics-management/academic-staff/person/46136-greta-goracci
Scientific sector of the lecturer	SECS-P/05
Teaching language	English
Office hours	24 hours (9 hours F. Ravazzolo + 15 hours G. Goracci) Cockpit – students' zone – individual timetable Webpage: https://www.unibz.it/en/timetable/?sourceId=unibz&department=26&degree=13141%2C13182
Lecturing assistant	*TBA*
Teaching assistant	---
Office hours	---
List of topics covered	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 Forecasting Heteroscedasticty and Autocorrelation Regression with Panel Data (Advantages and limitations of fixed and random effects regression) Regression with a Binary Dependent Variable, Categorical data analysis
Teaching format	Lectures, practical labs, group project, face-to-face coaching and mentoring.

Learning outcomes	The course will equip students with the following analytical skills: Analysis, Synthesis, Evaluation, Application; Numeracy and business research skills; Managing information and knowledge; Research related skills. In addition the course will develop the following behavioral, organizational and communication skills: personal effectiveness, learning, autonomy, technical expertise, communication and information technology, IT architecture and problem-solving using IT softwares R/Python. More precisely, the learning outcomes include: - Knowledge and understanding quantitative methodologies used by students in economics, business and management field, including data collection, data processing and analysis, model design and analytics - Applying knowledge and understanding to techniques for analysing quantitative data in economics, business and management - Making judgments regarding the suitability of particular methods to research in economics and business.

	- Making informed choices in regard to quantitative methods for decision-making, selection and application of research methods using statistical software, IT and communication skills, available statistical information and data. - Can communicate with their peers, research community, public and policy-makers on making necessary judgement and corrections to policy and research. Can be expected to be able to promote, within academic and professional contexts, technological and socio-economic advanced knowledge

Assessment	Written exam and a mid-term assignment (optional): written exam includes an essay and a review questions to test knowledge of theory, method and application skills. Written group assignment (optional) carried in groups in the mid-term in a form of report.
Assessment language	English
Evaluation criteria and criteria for awarding marks	Final mark 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.

Required readings	Readings provided by teacher.
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.