

Syllabus

Descrizione corso

Titolo insegnamento	Analisi di regressione applicata alle politiche pubbliche
Codice insegnamento	27605
Titolo aggiuntivo	
Settore Scientifico-Disciplinare	SECS-P/05
Lingua	Inglese
Corso di Studio	Corso di laurea magistrale in Politiche Pubbliche e Governance innovativa
Altri Corsi di Studio (mutuati)	
Docenti	dr. Jan Ditzen, Jan.Ditzen@unibz.it https://www.unibz.it/en/faculties/economics-management/academic-staff/person/44644
Assistente	
Semestre	Secondo semestre
Anno/i di corso	1
CFU	6
Ore didattica frontale	36
Ore di laboratorio	-
Ore di studio individuale	
Ore di ricevimento previste	18
Sintesi contenuti	The aim of the course 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 aim of the course is to introduce to the practice of econometrics by illustrating the methods and how they may be applied to problems of management and social science research.
Argomenti dell'insegnamento	1. Introduction to regression analysis for the public sector: The role of regression analysis in the context of the public sector.

	Formulating research questions and hypotheses. 2. The simple linear regression model: Model specification, interpretation, and assumptions. Estimation methods, least squares estimation, and assessment of model uncertainty. 3. Multiple linear regression: Inclusion of multiple predictors, variable selection, model building, model diagnostics. 4. Extensions of the linear regression model: Extending the multiple linear regression model by including non-linear terms and interaction effects. Linear regression methods for categorical output variables. 5. Methods for spatially and temporally correlated data: Linear methods for time series analysis, regression methods for spatially correlated data. 6. Recent developments in regression analysis: Robust estimation methods and outlier detection. Machine learning methods for high dimensional data from a regression perspective. Sparse regression models and penalized least squares methods.
Parole chiave	Econometrics; Data Science; Regression; Statistical Software
Prerequisiti	
Insegnamenti propedeutici	
Modalità di insegnamento	Lectures and exercises will be in person, streaming and recordings will also be available.
Obbligo di frequenza	Attendance is recommended, but not mandatory.
Obiettivi formativi specifici e risultati di apprendimento attesi	
Obiettivi formativi specifici e risultati di apprendimento attesi (ulteriori info.)	
Modalità di esame	Group Work (voluntary; 30%) : Attending and non attending students can participate in a data research project which counts 30% of the final grade. Students will work on a practical empirical project using real data and the statistical software R. The task will involve data management, writing R script files and the interpretation of results. Project work are valid for 1 academic year and cannot be carried over beyond that time-frame.

	Final written exam (70% if students participated in group work, 100% otherwise): students will have to solve theoretical, practical, and computational issues concerning a given concrete problem showing knowledge and understanding of the covered theories and methods. The assessment mode is the same for attending and non-attending students.
Criteri di valutazione	All students must reach a passing grade on the combined grade of the written exam and the take home research project. The following aspects are relevant for the exam: correctness of answers, ability to interpret R outputs and a critical assessment of regression results considering econometric and economic theory. The following aspects are relevant for the take home research project: correctness of answers, ability to run successfully an econometric project in R, interpretation of R outputs and critical assessment of results.
Bibliografia obbligatoria	J. M. Wooldridge, <i>Introductory Econometrics: A Modern Approach</i>, Cengage, 6th Ed. ISBN 9781305270107
Bibliografia facoltativa	Stock, James H., and Mark W. Watson. <i>Introduction to econometrics</i>. Pearson, 2020.
Altre informazioni	
Obiettivi di Sviluppo Sostenibile (SDGs)	Istruzione di qualità, Innovazione e infrastrutture, Buona occupazione e crescita economica