Syllabus

Descrizione corso

Titolo insegnamento	Metodi quantitativi e analisi statistica per l'accounting e la finanza
Codice insegnamento	25408
Titolo aggiuntivo	
Settore Scientifico-Disciplinare	SECS-S/01
Lingua	Inglese
Corso di Studio	Corso di laurea magistrale in Accounting e Finanza
Altri Corsi di Studio (mutuati)	
Docenti	prof. Fabrizio Cipollini, Fabrizio.Cipollini@unibz.it https://www.unibz.it/en/faculties/economics-management/academic-staff/person/48977
Assistente	dr. Patrick Osatohanmwen
Semestre	Primo 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 course provides statistical and computational tools useful in accounting and finance applications. The main objectives are: 1) learn R as a computing environment; 2) apply statistical tools already familiar to students (exploratory statistics, statistical distributions, statistical inference, correlation and linear regression) on real data using R; 3) learn new statistical methods frequently used in accounting and finance: logistic regression, repeated cross sections, panel data analysis, difference-in-difference inference, propensity score matching, Heckman model; this is achieved in a practical way by

	applying them to real data using R.
Argomenti dell'insegnamento	- R computing environment - Quarto with R - Exploratory statistics - Statistical distributions - Statistical inference (point estimation, confidence intervals, test of hypothesis) - Linear regression, including model diagnostics and inference - Logistic regression, including model diagnostics and inference - Panel data analysis, including model diagnostics and inference - Difference-in-difference inference - Propensity score matching - Heckman model
Parole chiave	R, exploratory statistics, statistical distributions, statistical inference, correlation, cross-section data, time series data, linear regression, logistic regression, repeated cross sections, panel data analysis, difference-in-difference inference, propensity score matching, Heckman model
Prerequisiti	At least a first course in statistics, covering both descriptive analysis and inference (point estimation, interval estimation, test of hypothesis).
Insegnamenti propedeutici	
Modalità di insegnamento	Traditional classes, mixing statistical theory and practice using R.
Obbligo di frequenza	Strongly suggested, but not mandatory
Obiettivi formativi specifici e risultati di apprendimento attesi	
Obiettivi formativi specifici e risultati di apprendimento attesi (ulteriori info.)	
Modalità di esame	Option 1) mid-term + final-term exams. Mid-term topics: statistics, linear and logistic regressions. Final-term topics: panel data analysis, difference-in-difference inference, propensity score matching, Heckman model. This option is valid only for students receiving a sufficient grade at the mid-term exam, and doing the final exam (with sufficient grade) in February, Any other situation leads to option 2).

	Option 2) final-term exam only. Topics: statistics, linear and logistic regressions, panel data analysis, difference-in-difference inference, propensity score matching, Heckman model. All exams are composed by questions concerning the analysis of real data to be answered using R.
Criteri di valutazione	Option 1) mid-term exam: 40%, final-term exam: 60% Option 2) final-term exam: 100% The two options are defined in the Assessment field.
Bibliografia obbligatoria	Since there is not a unique textbook covering all topics to a level suitable for the course students, the main reference to prepare the exam are lesson notes delivered by the teacher.
Bibliografia facoltativa	Dalpiaz D. (2022). Applied Statistics with R, https://book.stat420.org/applied_statistics.pdf Wasserman L. (2011), All of Statistics: A Concise Course in Statistical Inference https://egrcc.github.io/docs/math/all-of-statistics.pdf Wooldridge, J. M. (2019). *Introductory Econometrics: A Modern Approach.* Nelson Education, 7th ed Ruppert and D. S. Matteson (2015). Statistics and Data Analysis for Financial Engineering, 2nd ed. Springer https://ethz.ch/content/dam/ethz/special-interest/math/statistics/sfs/Education/Advanced%20Studies%20in%20Applied%2 material-1921/FinancialData/2710528_1_ruppert.pdf
Altre informazioni	All course material is made available in OLE
Obiettivi di Sviluppo Sostenibile (SDGs)	Buona occupazione e crescita economica