

Syllabus

Course description

Course title	APPLIED STATISTICS FOR ACCOUNTING AND FINANCE
Course code	25408
Scientific sector	STAT-01/A (Former SECS-S/01)
Degree	Master in Accounting and Finance
Semester and academic year	1 st semester 2025/2026
Year	1
Credits	6
Modular	No

Total lecturing hours	36
Total lab hours	-
Total exercise hours	-
Attendance	Highly recommended, but not mandatory
Prerequisites	A bachelor-level introductory course in statistics. An introductory course in econometrics and knowledge of R are helpful bonuses
Course page	Laurea magistrale in Accounting e Finanza / Libera Università di Bolzano (unibz.it)

Specific educational objectives	<p>The course provides statistical and computational tools useful in accounting and finance applications. The main objectives are:</p> <ol style="list-style-type: none"> 1) learn R as a computing environment; 2) apply well known statistical tools (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), in a practical way by applying them to real data using R.
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Lecturer	Prof. Fabrizio Cipollini
Scientific sector of the lecturer	STAT-02/A (Former SECS-S/03)
Teaching language	English

Learning outcomes	<p>Knowledge and understanding:</p> <ul style="list-style-type: none"> • Learn R • Revise well known statistical methods by applying them • Learn some new statistical methods frequently used in accounting and finance applications <p>Applying knowledge and understanding:</p> <ul style="list-style-type: none"> • Read, manage and summarize data; • Apply suitable statistical methods to real data; • Interpret the results of the analyses in light of the empirical context. <p>Making judgments:</p> <ul style="list-style-type: none"> • Choose the suitable statistical methods for an empirical problem; • Take effective decisions in light of the results obtained. <p>Communication skills</p> <ul style="list-style-type: none"> • Communicate effectively the results obtained, even to a non-specialised audience.
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Assessment	<p>Mid-term + final-term exams.</p> <p>The mid-term exam is composed of questions concerning analysis of real data to be answered using R: the topics involved are statistics, linear and logistic regressions.</p> <p>The final-term exam is composed of questions concerning analysis of real data to be answered using R: the topics involved are panel data analysis, difference-in-difference inference, propensity score matching, Heckman model.</p> <p>For students without a sufficient mid-term, the exam is composed of questions concerning analysis of real data to be answered using R: the topics involved are statistics, linear and logistic regressions, panel data analysis, difference-in-difference inference, propensity score matching, Heckman model.</p>
Assessment language	English
Evaluation criteria and criteria for awarding marks	<p>Mid-term exam: 40%</p> <p>Final-term exam: 60%</p>

Required readings	<p>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.</p>
Supplementary material	<p>Additional references on computing and statistical methods proposed in the course are:</p> <ul style="list-style-type: none"> • 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). <i>Introductory Econometrics: A Modern Approach</i>. Nelson Education, 7th ed

	<ul style="list-style-type: none"> • 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%20Statistics/course-material-1921/FinancialData/2710528_1_ruppert.pdf