Syllabus
Course description

Course title	**APPLIED STATISTICS FOR ACCOUNTING AND FINANCE**
Course code	**25408**
Scientific sector	SECS-S/01
Degree	Master in Accounting and Finance
Semester and academic year	1st semester 2018-2019
Year	1
Credits	6
Modular	No

Total lecturing hours	36
Total lab hours	-
Total exercise hours	-
Attendance	Strongly suggested, but not required
Prerequisites	The pre-requisite for this course is a bachelor-level introductory course in statatistcs.
Course page	https://www.unibz.it/en/faculties/economics-management/master-accounting-finance/

Specific educationl objectives	The course refers to the specialised educational activities and belongs to the scientific area of mathematics and statistics. After reviewing basic probability distributions and explorative data analysis methods, this course covers point estimation and hypothesis testing methods needed to extract information from business and financial data. The methods will be implemented and applied using the R statistical computing environment. The main goal of this course is to apply statistical tools to a range of common data sets and interpret results in the context of real business and finance problems.

Lecturer	Davide Ferrari Office SER E205 https://www.unibz.it/it/faculties/economics-management/academic-staff/
Scientific sector of the lecturer	SECS-S/01
Teaching language	English

Office hours	please refer to the lecturer's timetable
Lecturing assistant	None
Teaching assistant	None
List of topics covered	1. Explorative analysis of financial data and their properties 2. Introduction to probability and main probability distributions in finance 3. Review of estimation, confidence intervals and hypothesi testing 4. Lnear models for financial time series 5. Asset volatility and volatility models 6. High-frequency financial data 7. Value at risk and extreme values
Teaching format	The course will combine in-class explanations of statistical methods, problem-solving and discussion of case studies. Students will be expected to participate actively in class work, which will give them the opportunity to develop their problem-solving skills in the context of realistic situations. In order to benefit from this approach, it is important that all students come to class fully prepared.

Learning outcomes	Knowledge and understanding: • Advanced knowledge and understanding of statistical methods related to common types of financial and business data. Applying knowledge and understanding: • Ability to apply statistical methods to real financial data sets using statistical software. • Ability to interpret the results of the analyses in the context of common finance and business problems. Making judgments • Ability to think critically and make effective decisions based on appropriate statistical analyses Communication skills • Ability to communicate effectively the results from statistical analyses, even to a non-specialised audience.

Assessment	Final Exam (60%): The final exam consists of problems related to the analysis and interpretations of various financial data sets Assignments (40%): Problems to be handed in will be assigned three times during the semester. They will be announced one week in advance. The problems included in the final exam are aimed at assessing the acquisition of knowledge and understanding and the ability to apply them to new situations. The essay questions of the exam and the assignments also evaluate the ability of the student to analyse and report on complex business transactions. The assignments also measure the student's ability to search for the relevant regulatory and economic information that apply to a specific situation.
Assessment language	English

Evaluation criteria and criteria for awarding marks	Final exam: 60% Assignments: 40% Students must pass the exam to have a passing grade in the course. The assignments are compulsory and must be handed even by non-attending students. The exam will be offered in February, June and September 2017.

Required readings	Main textbook: Tsay, R.S., 2014. *An introduction to analysis of financial data with R*. John Wiley & Sons.
Supplemen-tary material	For each topic, practice problems from the textbook will be recommended on a weekly basis. Additional reference textbook on statistical methods and statistical computing for financial data are: Ruppert, David. *Statistics and finance: an introduction*. Springer, 2014. Madsen, Henrik, Erik Lindström, and Jan Nygaard Nielsen. "Statistics for finance." (2015). Carmona, René. *Statistical analysis of financial data in R*. Vol. 2. New York: Springer, 2014. Selected chapters from CFA Institute Curriculum 2018 edition, Level I –III