# Syllabus
# Course description

| Course title | **Financial Econometrics** |
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| **Course code** | **25423/27505** |
| **Scientific sector** | SECS-P/05 |
| **Degree** | Master in Accounting and Finance/Master in Data Analytics for Economics and Management LM-Data (curriculum Data Analytics for Economics) |
| **Semester** | 1st semester |
| **Year** | 2023/2024 |
| **Credits** | 6 |
| **Modular** | No |

| Total lecturing hours | 36 |
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| **Total lab hours** | - |
| **Total exercise hours** | - |
| **Attendance** | Strongly suggested, but not required |
| **Prerequisites** | |
| **Course page** | https://www.unibz.it/en/faculties/economics-management/master-accounting-finance/course-offering/ <br><br> https://www.unibz.it/en/faculties/economics-management/master-data-analytics-economics-management/ |

| Specific educational objectives | The course covers the tools of financial econometrics and empirical finance, with the focus on correlation analysis, classical linear regression and advanced time-series analysis. Strong emphasis is placed on the application of the models to real financial data. |
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| **Lecturer** | Greta Goracci <br> greta_goracci@unibz.it <br> mailto:francesca.papagni@unibz.it |
| **Scientific sector of the lecturer** | SECS-S/01 |
| **Teaching language** | English |

| Office hours | please refer to the lecturer's timetable |
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| **Lecturing assistant** | None |
| **Teaching assistant** | None |

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| **List of topics covered** | - Basics of stochastic processes theory, <br> - Correlation analysis of the financial series. <br> - Models and methods for predicting the level of future returns (Classical Linear Regression) and Time-Series Analysis (ARMA models): specification, inference and forecasting. <br> - Models for volatility analysis and prediction (ARCH and GARCH models): specification, inference and forecasting. Other advanced topics include unit-root testing, tests for non-linearity and introduction to non-linear and threshold models |
| **Teaching format** | The course will combine in-class explanations of the background material, problem-solving and case discussions. Students will be expected to participate actively in class work, which will give them the opportunity to apply theoretical concepts to realistic situations. In order to benefit from this approach, it is important that all students come to class fully prepared. |

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| **Learning outcomes** | **1) Knowledge and understanding** <br> The aim of the course is to equip students with a working knowledge of important econometric techniques used in international finance and financial economics. <br> 2) Applying knowledge and understanding: Students will learn how apply the econometric methods by correctly specifying, estimating and testing the econometric models discussed during the lectures; they will also learn how to properly interpret the results provided by these <br> Procedures within practical situations. Students will learn how to use essential tools for working with financial data and will be able to apply the above econometric techniques using appropriate software such as R). <br> **3)Making judgments** <br> Ability to formulate models and to implement appropriate econometric tools for the analysis and forecasting of financial data. <br><br> **4)Communication skills** <br> Ability to present in a consistent and precise manner the results obtained from the econometric analysis. <br><br> **5)Learning skills** <br> The course provides the methodological and applied knowledge of econometrics applied to finance, necessary to address subsequent advanced quantitative studies in finance and economics, iapplied projects in laboratories and internships, and empirical analyses in the final thesis. |

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| **Assessment** | Final Exam (60%): <br>     The final exam is a combination of problems, cases and essay questions. <br> Assignment (40%): <br>     Case studies will be assigned during the semester to be completed in writing and presented in class by groups of students. <br><br> The questions included in the final exam are aimed at assessing the acquisition of knowledge and understanding (Skill 1) and the ability to apply them to new situations as well as to evaluate the ability of the student to analyse and report on complex financial and business transactions (Skills 2, 3 and 4).  The case studies also measure the student's ability to search for the relevant regulatory and economic |

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| | information that apply to a specific situation. Skill 5 is assessed indirectly because passing the final exam is possible by the autonomous execution of the class and home activities. |
| **Assessment language** | English |
| **Evaluation criteria and criteria for awarding marks** | Final exam: 60%<br>Assignment: 40%<br><br>**The student must pass the exam to have a passing grade in the course**.<br><br>The **assignments are compulsory** and must be handed in (also electronically) **even by non-attending students** who can find all the necessary information, including due dates, in the Reserve Collections. |

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| **Required readings** | **Main textbooks**:<br>Selection of papers provided by the teacher. |
| **Supplementary material** | CFA Institute Curriculum 2018 edition, Level II, Readings 9-11.<br>Koop G. (2003). Bayesian Econometrics. Wiley.<br>Stock J.M. and Mark W. Watson, *Introduction to Econometrics*. Pearson International 3$^{rd}$ Edition.<br>Diebold F. X. (2006). Elements of Forecasting. Mason 4$^{th}$ Edition. |