

Syllabus

Course Description

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| Course Title | Risk Management and Derivatives |
| Course Code | 25437 |
| Course Title Additional | |
| Scientific-Disciplinary Sector | STAT-04/A |
| Language | German |
| Degree Course | Master in Accounting and Finance |
| Other Degree Courses (Loaned) | |
| Lecturers | <p>Prof. Alex Weissensteiner, Alex.Weissensteiner@unibz.it https://www.unibz.it/en/faculties/economics-management/academic-staff/person/1080</p> <p>dr. Silvia Bressan, Silvia.Bressan@unibz.it https://www.unibz.it/en/faculties/economics-management/academic-staff/person/37763</p> |
| Teaching Assistant | |
| Semester | Second semester |
| Course Year/s | 2 |
| CP | 6 |
| Teaching Hours | 36 |
| Lab Hours | 6 |
| Individual Study Hours | - |
| Planned Office Hours | 18 |
| Contents Summary | <p>The course Risk Management and Derivatives introduces students to the world of financial risks and the tools to manage them effectively. You will explore how to identify, measure, and hedge market, credit and liquidity risks by applying theory to real-world data. Through hands-on use of the software R, you'll practice techniques like Value-at-Risk, stress testing, and credit risk modeling. Topics range from hedging with derivatives such as</p> |

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| | options, futures, and swaps to analyzing financial disasters and their lessons. With a mix of analytical methods and practical applications, the course equips you with the skills needed for a career in finance or further academic research. |
| Course Topics | <p>(A) structure and mechanics of OTC and exchange markets</p> <p>(B) (coherent) risk measures</p> <p>(C) market risk: bond fundamentals, derivatives, introduction to market risk, sources of market risk (interest rate risks, equity risks, currency risks, commodity risks), hedging linear risk (forwards, futures, swaps), nonlinear risk (options), modeling risk factors, Value-at-Risk (VaR) and Conditional Value-at-Risk (CVaR or expected shortfall), VaR mapping, historical and parametric VaR estimation, back testing, stress testing and scenario analysis.</p> <p>(D) credit risk: introduction to credit risk, actuarial default risk (credit rating), default risk from market prices (Merton model, bonds with embedded prices), credit VaR, expected and unexpected credit losses, credit derivatives,</p> <p>(E) liquidity risk</p> <p>(F) financial disasters and risk management failures will be discussed.</p> <p>(G) climate risk</p> |
| Keywords | market risk, credit risk, liquidity risk, climate risk, value-at-risk |
| Recommended Prerequisites | |
| Propaedeutic Courses | |
| Teaching Format | Lectures |
| Mandatory Attendance | Suggested, but not required |
| Specific Educational Objectives and Learning Outcomes | <p>ILO (Intended Learning Outcomes)</p> <p>ILO 1 – Knowledge and Understanding:</p> <p>ILO 1.1 Understanding of issues and techniques related to the organisation and financial management of companies and financial intermediaries</p> <p>ILO 1.2 Knowledge of the fundamentals of corporate finance for the correct application, for example, of decision-making models and the management of financial data and risks in treasury management</p> <p>ILO 1.3 Understanding of management models and cost-effectiveness of different types of intermediaries, market</p> |

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| | <p>microstructure, operational efficiency of financial markets, and the impact of financial markets on the economic conditions of intermediaries</p> <p>ILO 1.4 Knowledge of specific Finance topics that characterise the roles of Financial Analyst, Portfolio Manager, Chief Financial Officer (CFO), Administrative Manager, Controller, Internal Auditor, and Business Consultant</p> <p>ILO 2 – Applying Knowledge and Understanding: ILO 2.1 Ability to identify, evaluate, and manage investments in financial markets ILO 2.2 Ability to design coherent financial management strategies in companies or financial intermediaries, applying acquired knowledge in risk management techniques, asset valuation, and derivative handling</p> <p>ILO 3 – Making Judgements: ILO 3.1 Ability to relate models and empirical evidence in the study of companies, intermediaries, and financial markets</p> <p>ILO 4 – Communication Skills: ILO 4 Ability to communicate effectively, both orally and in writing, the specialised content of individual disciplines, using different registers depending on the audience and the communicative and educational purposes, and to assess the educational impact of such communication</p> <p>ILO 5 – Learning Skills: ILO 5.3 Ability to frame a new problem systematically and to generate appropriate taxonomies</p> |
| <p>Specific Educational Objectives and Learning Outcomes (additional info.)</p> | |
| <p>Assessment</p> | <p>Written exams after 2/3 of the semester and at the end of the semester. ILOs assessed 1-5</p> |
| <p>Evaluation Criteria</p> | <p>The assesment is based on a mid-term exam (33%, applicable for the June exam) and a final exam, where either the better result from 66% of the final exam or 100% of the final exam is</p> |

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| | considered. After the June exam, the final exam counts for 100% of the evaluation. A minimum score of 18 out of 30 points is required for a positive result. |
| Required Readings | Philippe Jorion, Financial Risk Manager Handbook (GARP), 6th Edition, Wiley, 2011. |
| Supplementary Readings | <ul style="list-style-type: none"> • John C. Hull, Risk Management and Financial Institutions, Wiley, 2015. • René Stulz, Risk Management & Derivatives Thomson South-Western, 2002. • P. Wilmott, S. Howison and J. Dewynne, The Mathematics of Financial Derivatives: A Student Introduction, Cambridge University Press, 1995 • Steve Allen, Financial Risk Management: A Practitioner's Guide to Managing Market and Credit Risk, Wiley, 2013. • Selected chapters from CFA Institute Curriculum 2018 edition, Level I –III |
| Further Information | |
| Sustainable Development Goals (SDGs) | Climate action, Quality education |