Syllabus

Course Description

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	Prof. Alex Weissensteiner, Alex.Weissensteiner@unibz.it https://www.unibz.it/en/faculties/economics-management/academic-staff/person/1080 dr. Silvia Bressan, Silvia.Bressan@unibz.it https://www.unibz.it/en/faculties/economics-management/academic-staff/person/37763
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	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

	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	(A) structure and mechanics of OTC and exchange markets (B) (coherent) risk measures (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. (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, (E) liquidity risk (F) financial disasters and risk management failures will be discussed. (G) climate risk
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	Knowledge and understanding: Master's degree graduates should be able to acquire an advanced level of preparation that allows for an articulate and integrated view of the finance issues of companies, financial intermediaries, financial institutions and markets. These learning outcomes are achieved through an advanced knowledge and understanding - of the economic-financial planning and evaluation of new investments; - of the characteristics associated with extraordinary moments in corporate management, such as capital transactions, recourse to financial markets, mergers and acquisitions, corporate crisis and reorganisation;

	- the problems and techniques of the organisation and financial management of companies and financial intermediaries; - the fundamentals of corporate finance for the correct application of, for example, decision-making models and financial data and risk management to treasury management; - the management and economic models of the different types of intermediaries, market microstructure, the operational efficiency of financial markets and the impact of financial markets on the economic conditions of intermediaries; - a wide range of investment, financing and risk management instruments, starting with the fundamentals of portfolio diversification and classical asset pricing and risk measurement models; - the specific finance issues that characterise the profession of financial analyst, portfolio manager, chief financial officer (CFO), chief administrative officer, controller, internal auditor and business consultant." Applying knowledge and understanding: Ability to apply knowledge in the area of Finance to be able to carry out analysis of complex problems in a national and international interdisciplinary context Ability to apply knowledge in the area of Finance for the design and implementation of corporate restructuring and other extraordinary operations Ability to apply knowledge in the area of Finance for the identification, evaluation and management of investments in financial markets Ability to apply knowledge in the area of Finance for the design of coherent financial management strategies in companies or financial intermediaries, competently applying acquired knowledge in risk management techniques, asset valuation, handling of derivatives Making judgements: Ability to apply acquired knowledge to make managerial and operational decisions and to solve problems in the administration and finance of companies, intermediaries and financial markets, jointly taking into account multiple perspectives of analysis, from economic to legal, financial, strategic, managerial Ability to select data and use appropriate information to describe a

	problem concerning the management of companies, intermediaries and financial markets. Ability to relate models and empirical evidence in the study of companies, intermediaries and financial markets. Communication skills: Ability to communicate effectively in oral and written form the specialised contents of the individual disciplines, using different registers according to the recipients and the communicative and didactic purposes, and to evaluate the formative effects of its communication Learning skills: a) ability to use information technology autonomously to carry out bibliographic research and investigations and for one's own training and updating b) ability to identify thematic links and establish relationships between different cases and contexts of analysis c) ability to frame a new problem systematically and to generate appropriate taxonomies d) ability to develop general models from the phenomena studied.
Specific Educational Objectives and Learning Outcomes (additional info.)	
Assessment	Written exams after 2/3 of the semester and at the end of the semester.
Evaluation Criteria	The assessement 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 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	• 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