Freie Universität Bozen
Libera Università di Bolzano
Università Liedia de Bulsan

Syllabus
Course description

Course title	**Risk Management and Derivatives**
Course code	**25437**
Scientific sector	SECS-S/06
Degree	Master in Accounting and Finance
Semester and academic year	2nd semester 2022/2023
Year	2
Credits	6
Modular	NO

Total lecturing hours	36
Total lab hours	6
Total exercise hours	-
Attendance	suggested, but not required
Prerequisites	not foreseen
Course page	https://www.unibz.it/en/faculties/economics-management/master-accounting-finance/

Specific educational objectives	The purpose of the class is to introduce students to the topic of financial risk management and to the use of financial derivatives in order to hedge risks. Students should the able to identify, measure and manage, especially (but not exclusively) market risks and credit risks. In order to apply the concepts on concrete examples and *real* data, the software package "R" will be used.

Lecturer	Alex Weissensteiner Office E206 e-mail: Alex.Weissensteiner@unibz.it Tel: 0471/013496 http://www.unibz.it/en/economics/people/StaffDetails.html?personid=1080&hstf=1080
Scientific sector of the lecturer	SECS-S/06
Teaching language	English
Office hours	please refer to the lecturer's web page
Lecturing assistant	TBD
Teaching assistant	Not foreseen
Office hours	
List of topics covered	Students will learn concepts: (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.
Learning outcomes	• Knowledge and understanding: Knowledge of the major risk sources. Understand the principles of how to identify, measure (with appropriate models) and hedge (with appropriate instruments) financial risks. • Applying knowledge: Ability to measure financial risks and to hedge them with financial derivatives. Practical examples will be analyzed together in class by using the software package "R". • Making judgments: Relevant examples should encourage students to express their own judgments in classroom and to improve their problem-solving skills. • Communication skills: The applied teaching method (mix of theory and applications) should stimulate the participation of students in classroom discussions. • Learning skills: The course should provide the necessary foundations in financial risk management, such that students could either continue their academic career in a PhD program or work for the industry.

Assessment	Written exam at the end of the semester. The questions included in the final exam are aimed at assessing the acquisition of knowledge and understanding (identify, measure and manage different risks), and the ability to apply them to new situations. A mock exam is provided toward 2/3 of the lecture.

Assessment language	English
Evaluation criteria and criteria for awarding marks	Assessment based on final exam (100%). Threshold (18 out of 30+ points).

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