Syllabus

Course Description

Course Title	OFA-Mathematics
Course Code	27361
Course Title Additional	
Scientific-Disciplinary Sector	NN
Language	English
Degree Course	Bachelor in Economics and Management
Other Degree Courses (Loaned)	L-33 Economics, Politics and Ethics
Lecturers	Dott. Thi Khanh Linh Ha, ThiKhanhLinh.Ha@unibz.it https://www.unibz.it/en/faculties/economics-management/academic-staff/person/46385
Teaching Assistant	
Semester	First semester
Course Year/s	1
CP	0
Teaching Hours	20
Lab Hours	-
Individual Study Hours	-
Planned Office Hours	-
Contents Summary	Basic mathematical knowlegdge and skills.
Course Topics	Basic mathematics. rational numbers: fractions and decimal representation percentages division with remainder absolute value powers, logarithms and rules for both manipulation of algebraic expressions (expanding, factoring, canceling) intersections, unions, di¿erences of sets

	Equations. solving linear equations with one variable solving quadratic equations ¿nding equations of straight lines in the plane Functions. graphs of linear, quadratic, logarithm and power functions graph of absolute value function relationship between roots of functions and solving equations
Keywords	
Recommended Prerequisites	
Propaedeutic Courses	
Teaching Format	
Mandatory Attendance	Attendance not compulsory, but recommended
Specific Educational Objectives and Learning Outcomes	ILO 1 Knowledge and understanding ILO 1.1 Knowledge of basic and intermediate mathematical tools for ILO ILO 1.2 Understanding and analysis of economic mechanisms through theoretical models and empirical applications ILO 1.3 Knowledge of tools for static, dynamic, and comparative analysis for the analysis of data on individuals, businesses, and economies ILO 1.4 Knowledge and understanding of descriptive statistics, the fundamentals of probability theory and sampling methods, standard distributions and their application to economic analysis, as well as linear and non-linear regression Understanding of parametric estimation and hypothesis testing ILO 1.5 knowledge of the IT tools needed to read and analyse economic data and models ILO 1.6 knowledge of the structure of IT networks, their main applications and security techniques, as well as techniques for collecting, presenting and analysing data with the aid of appropriate software ILO 1.7 knowledge of international accounting systems and the double-entry method for recording and evaluating business management operations ILO 1.8 Understanding of financial statements ILO 1.9 In-depth knowledge of accounting data recording or management control ILO 1.10 Knowledge of the analysis method for estimating present

	values and discount factors to estimate the cost of capital and the valuation of bonds and shares ILO 1.11 Knowledge of medium- and long-term financial forecasting methodologies and sensitivity analysis with simulation under conditions of uncertainty to manage corporate and international finance risks ILO 1.12 Knowledge and understanding of the international financial environment, techniques for defending against multinational risks, and competitive strategies adopted by global banks ILO 1.13 Knowledge of the mechanisms underlying effective communication of quantitative topics in three languages: Italian, German and English ILO 2 Quantitative methods for decision-making ILO 2.1 Ability to analyse (unconstrained) optimisation problems and mathematically interpret models of social and economic dynamics ILO 2.2 Ability to formalise economic problems through mathematical models, solve such problems and interpret the results conceptually ILO 2.3 Ability to analyse economic data using descriptive, parametric and non-parametric statistical methods as well as linear and non-linear regression and interpret the results ILO 2.4 Ability to apply international accounting standards to different business contexts ILO 2.5 Ability to extract and interpret economic information from the web ILO 2.6 Ability to use computers and computer networks to analyse large amounts of data in solving complex problems and to write theses and articles ILO 2.7 Ability to evaluate fixed-income financial instruments and shares of companies listed on stock markets using spreadsheet programmes ILO 2.8 Ability to analyse financial statements using balance sheet ratios and communicate the results in accordance with international professional standards ILO 2.9 Ability to apply the main theories on the capital, foreign exchange and commodity markets to actual data, including at international level

	ILO 2.10 be able to establish the structure and implementation of an empirical project using econometric software and financial or economic databases ILO 2.11 be able to use financial investment performance evaluation techniques and understand the mechanisms of pricing risky financial assets and spot and forward interest rates ILO 2.12 Ability to work with basic and intermediate mathematical tools and basic statistical tools to study the behaviour of economic agents from a theoretical and empirical perspective ILO 2.13 Ability to analyse economic datasets using spreadsheets or other appropriate software ILO 2.14 Ability to use IT tools for economic analysis ILO 2.15 Ability to communicate the results of quantitative analyses prepared in accordance with international professional standards in three languages: Italian, German and English
Specific Educational Objectives and Learning Outcomes (additional info.)	-
Assessment	Written test.
Evaluation Criteria	Correctly solving a number of elementary mathematical exercises in English (ILO 1.1, 2.15).
Required Readings	Will be notified
Supplementary Readings	
Further Information	Further information: The test can be repeated during the semester; OFA can also be passed by successfully completing the written Mathematics for Economists exam at the end of the fall semester.
Sustainable Development Goals (SDGs)	Reduced inequalities, Quality education