



Anno Accademico 2020/2021

## MATHEMATICAL METHODS FOR BUSINESS

Anno immatricolazione	2020/2021
Anno offerta	2020/2021
Normativa	DM270
SSD	SECS-S/06 (METODI MATEMATICI DELL'ECONOMIA E DELLE SCIENZE ATTUARIALI E FINANZIARIE)
Dipartimento	DIPARTIMENTO DI SCIENZE ECONOMICHE E AZIENDALI
Corso di studio	INTERNATIONAL BUSINESS AND ENTREPRENEURSHIP - MANAGEMENT INTERNAZIONALE E IMPRENDITORIALITÀ
Curriculum	International Management
Anno di corso	1°
Periodo didattico	Primo Semestre (28/09/2020 - 22/12/2020)
Crediti	6
Ore	44 ore di attività frontale
Lingua insegnamento	English
Tipo esame	SCRITTO
Docente	MAGGI MARIO ALESSANDRO (titolare) - 6 CFU
Prerequisiti	Calculus: limits, functions, derivatives, optimization Linear algebra: vector and matrices, matrix operations Statistics: common distributions, parameter estimate, confidence intervals, hypothesis test
Obiettivi formativi	The course aim at providing models and methods to analyze practical business problems. Numerical applications are presented using spreadsheet computation.
Programma e contenuti	<ul style="list-style-type: none"><li>- Quantitative background</li><li>- Introductio to spreadsheet computation</li><li>- Descriptive analysis with spreadsheets</li><li>- Analysis of financial returns</li><li>- Volatility, correlation and portfolios</li></ul>

	<ul style="list-style-type: none"> <li>- Portfolio theory and diversification</li> <li>- The market model</li> <li>- Market efficiency</li> <li>- The OLS estimate</li> <li>- Some applications</li> <li>- Extension: dummy variables and transformations, variable selection</li> <li>- Linear optimization and business application</li> </ul>
<b>Metodi didattici</b>	<p>For each topic, after a short introduction of the theoretical notions and models, the practical applications are presented, discussed with the help of examples and data.</p> <p>In line with the course objective, a strong importance is given to the computations, the data download and analysis.</p>
<b>Testi di riferimento</b>	<p>Reading list</p> <ul style="list-style-type: none"> <li>- Bodie-Kane-Markus, Investments, 10th Edition, McGraw-Hill, 2014. Chapters 7 and 8.</li> <li>- E.J. Elton, M.J. Gruber, S.J. Brown, W.N. Goetzman, Modern Portfolio Theory and Investment Analysis, Wiley, 2014.</li> <li>- T. Wegner, Applied Business Statistics, Juta Academics, 2013</li> <li>- J.M. Wooldridge, Introductory Econometrics, South-Western Cenage Learning, 2013</li> <li>- S.P. Bradley, A.C. Hax, T.L. Magnanti, Applied Mathematical Programming, Addison-Wesley Publishing Company (1977)</li> </ul>
<b>Modalità verifica apprendimento</b>	<p>Teamworks to assess the students' skills in using spreadsheets for data analysis and problem solving</p> <p>Written exam to assess the theoretical notions, the models and the applications</p>
<b>Altre informazioni</b>	
<b>Obiettivi Agenda 2030 per lo sviluppo sostenibile</b>	<a href="#"><u>\$lbl_legenda_sviluppo_sostenibile</u></a>