Syllabus

Course Description

Course Title	AI and Financial Decision Making (FIN III)
Course Code	25407
Course Title Additional	
Scientific-Disciplinary Sector	ECON-09/A
Language	Italian
Degree Course	Master in Accounting and Finance
Other Degree Courses (Loaned)	
Lecturers	Prof. Claudia Curi, Claudia.Curi@unibz.it https://www.unibz.it/en/faculties/economics-management/academic-staff/person/31602 Dott. Carlo Milani, Carlo.Milani@unibz.it https://www.unibz.it/en/faculties/economics-management/academic-staff/person/45265
Teaching Assistant	
Semester	First semester
Course Year/s	2
CP	6
Teaching Hours	36 Online
Lab Hours	-
Individual Study Hours	-
Planned Office Hours	18
Contents Summary	- This course explores the application of artificial intelligence (AI) in financial decision-making processes. - Students learn machine learning techniques, using R software at an intermediate level. - The programme includes predictive models, classification, regression, neural networks, clustering and dimensionality reduction.

	- Teaching activities combine lectures, tutorials, practical projects and expert talks. - Assessment is based on written examination, presentation of a paper with generative AI support and development of a data science project.
Course Topics	The course is divided into two parts: Part 1: Artificial Intelligence (AI) in Financial Services - Main technological trends in financial services - Definition of AI, machine learning, and deep learning, and their role in influencing decision-making processes in financial services - AI applications in financial services - AI versus other emerging FinTech trends - Changes in the competitive landscape of financial systems and financial stability issues Part 2: Machine Learning Models -Data collection and preparation -Classification and regression models -Ensemble learning -Deep learning -Clustering -Dimensionality reduction The detailed syllabus will be provided at the beginning of the course.
Keywords	Artificial Intelligence, Machine leanring, fintech
Recommended Prerequisites	
Propaedeutic Courses	
Teaching Format	lectures
Mandatory Attendance	The regular attendance of the lectures is strongly recommended
Specific Educational Objectives and Learning Outcomes	ILO (Intended Learning Outcomes) ILO 1 – Knowledge and Understanding: ILO 1.1 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 ILO 1.2 of management models and cost-effectiveness of different types of intermediaries, market microstructure, operational efficiency of financial markets, and the impact of financial markets on the cost-effectiveness of intermediaries ILO 1.3 of a wide range of investment, financing, and risk management instruments, starting from the fundamentals of portfolio diversification and the classic models for asset pricing and risk measurement ILO 1.4 of specific Finance topics that characterize the profession of Financial Analyst, Portfolio Manager, Chief Financial Officer (CFO), Administrative Manager, Controller, Internal Auditor, and Business Consultant ILO 2 – Applying Knowledge and Understanding: ILO 2.1 for the identification, evaluation, and management of investments in financial markets ILO 2.2 for setting coherent financial management strategies in companies or financial intermediaries, competently applying the acquired knowledge in risk management techniques, asset valuation, and derivative handling ILO 3 – Making Judgments: ILO 3.1 ability to relate models and empirical evidence in the study of companies, intermediaries, and financial markets ILO 4 – Communication Skills: ILO 4 Ability to effectively communicate, both orally and in writing, the specialized content of individual disciplines, using different registers depending on the audience and the communicative and educational purposes, and to assess the educational impact of one's communication ILO 5 – Learning Skills: ILO 5.1 ability to develop general models based on the phenomena studied
Specific Educational Objectives and Learning Outcomes (additional info.)	

Assessment	The final grade will be based on a combination of: a written exam, project work, and active participation in the course (presentations, case study discussions, and forums). ILOs assessed 1-5
Evaluation Criteria	There are two components. The written exam consists of questions related to real-world cases and financial theory, as well as quantitative problems. The second component consists of designing a data science project applied to the banking and financial sector.
Required Readings	Articles, business cases, and other readings provided in class Lantz, Brett (2019). "Machine Learning with R: Expert techniques for predictive modeling", 3rd Edition. Packt Publishing.
Supplementary Readings	
Further Information	
Sustainable Development Goals (SDGs)	Industry, innovation and infrastructure