**Microeconomics (for Finance)**

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***COURSE AIMS AND INTENDED LEARNING OUTCOMES***

The course exploits the results of Macroeconomic theory and of the calculation of probabilities to provide students with detailed knowledge of the foundations of modern financial economics.

The theoretical part is constantly accompanied by numerical exercises, which are intended to help students study in-depth and assimilate the economic-financial concepts and the analytical results discussed in the course. The computer lectures (optional for exam purposes), in contrast, aim to stimulate the independent analysis of financial data in students.

At the end of the course, students will be able to:

1. know and understand the theory of updating beliefs, investment choices based on the probabilistic relationships between different *assets*, the possible advantages deriving from the presence of evolved financial markets, the determinants of *asset* prices, and the psychological factors that can induce investors to make "irrational" choices. This will enable students to develop investment strategies adopted to the needs of the customer and effectively manage financial advisory relationships.
2. use their knowledge of the modern financial economy to identify the most appropriate investment and communication strategies for their clients, also considering the psychological factors that can create a gap between the objective quality of a strategy and investors' perceptions.
3. independently interpret and analyse, including with the use of statistical programmes, the enormous amount of economic-financial data available on numerous specialised platforms, as well as develop alternative probabilistic scenarios.
4. communicate clearly and rigorously - and, if necessary, even formally - the conclusions of their analyses and the reasons for their decisions, both to experts in the sector and to investors with limited financial expertise.
5. interpret economic and financial phenomena that will help them understand the complexity of both the markets and the human mind, and in some cases, even develop new theories.

***COURSE CONTENT***

*– Decision theory.* Theories of expected utility and expected subjective utility.

– *Uncertainty and information.* Subjective probability and information. Information value and choice between information structures. Markets and information: analysis of an economic model of imitative behaviour.

– *Risk and return*. Expected value. Stochastic dominance of first order. Risk attitude. Wealth and utility. Absolute and relative risk aversion. Prudence and temperance. The most used utility functions in economics. Stochastic dominance of second order. Monotonous stochastic dominance of second order. Economic applications: insurance and portfolio choice.

– *Mean-variance approach (overview)*. Correlation between *assets* and efficient frontier. Portfolio choice and separation theorem. CAPM. Mean-variance approach *vs.* expected utility: critique and justification.

– *Investment, insurance and savings choices.* Optimal portfolio choice. Expected utility and diversification. Optimal insurance choice. Risk and optimal savings choice.

– *Competitive equilibrium and prices of securities*. Markets and exchanges of wealth between periods and states of the world. Competitive equilibrium with contingent goods to the states of the world and with *Arrow’s securities*. Incomplete markets, arbitrage and inefficiency. The additive theorem of value. Options and complete markets. Analysis of an economic model of intermediation and financial crisis.

– *Behavioural finance*. “Anomalous” financial behaviours. Behavioural economics. Psychological factors that influence the behaviour of investors in financial markets.

The part in parentheses refers to the pages of the reading list. A more detailed course programme is available on Blackboard.

***READING LIST***

F. Colombo, *Fondamenti di economia finanziaria,* Giappichelli, 2021.

F. Colombo, *Rischio, informazione, equilibrio. Esercizi di economia finanziaria,* Giappichelli, 2021.

R.B. Myerson (RM), *Probability Models for Economic Decisions,* Thomson Brooks/Cole, 2005.

S. Bikhchandani e S. Sharma (BS), “Herd Behavior in Financial Markets”, *IMF Staff Papers*, 47, 2001

A. Franklin e D. Gale, *Understanding Financial Crises*, Oxford University Press, parr. 3.1-3.5, 2007

M. Rabin e R. Thaler (2001): “Anomalies. Risk Aversion”, *Journal of Economic Perspectives*, 15(1)

N. Barberis-R. Thaler, *A Survey of Behavioral Finance,* in Constandinides *et al*, Handbook of the Economics of Finance, Vol. 1, Parte 2, Elsevier, 2003.

N. Barberis: “Thirty Years of Prospect Theory in Economics: A Review and Assessment’’, *Journal of Economic Perspectives*, 27(1), 2013

D. Kahneman-M.K. Riepe, *Aspects of Investor Psychology,* Journal of Portfolio Manager, 24(4), 1998.

In early 2023, I will most probably publish a volume to be used as reference manual, which will replace the book *Fondamenti di economia finanziaria*, presently in the Reading List.

***TEACHING METHOD***

Lessons and frontal exercises, in the classroom. Furthermore, four sessions will be held in the computer lab (optional for exam purposes) with the use of Microsoft Excel software and add-in Simtools.

***ASSESSMENT METHOD AND CRITERIA***

The exam comprises: a 100-minute written test to assess students’ understanding of theoretical course content, also through the resolution of numerical exercises similar to those presented in class and/or assigned, and to assess students’ ability to use their knowledge to discuss economic and financial phenomena, not necessarily covered during the course. All questions and exercises are open-ended. Each question/exercise will be marked out of thirty. The weight assigned to each question counting towards the final mark will be indicated in the exam paper.

There will also be the opportunity to pass the exam by taking written interim tests, also consisting of theoretical questions and numerical exercises, similar to those mentioned above. The first test (mark I) will take place during the seventh week of the course, while students will decide whether to take the final test, (mark C) during the first or the second call (appello) of the Summer session. Both exams last 80 minutes. The final vote is calculated using the following formula: V = 0,529\*I+0,529\*C, rounding up to the nearest whole number.

***NOTES AND PREREQUISITES***

During the course, students will apply mathematical and statistical concepts studied during the undergraduate degree. For example, students must be able to calculate derivatives of composite functions, identify the maximum function of a variable, know that the integral of a function can be represented graphically by the area under a curve, be acquainted with and identify a density function or a distribution function, calculate conditional probability using Bayes’ Theorem, solve a system of two equations with two unknowns, understand when two or more vectors are linearly dependent and identify their relationship, calculate and interpret the correlation coefficient between two random variables.

Constant and active class attendance is fundamental and highly recommended, in consideration of a gradual assimilation of the illustrated concepts and of the employed analytic tools.

In case the current Covid-19 health emergency does not allow frontal teaching, remote teaching will be carried out following procedures that will be promptly notified to students.

Further information can be found on the lecturer's webpage at http://docenti.unicatt.it/web/searchByName.do?language=ENG, or on the Faculty notice board.