## **Finance and banking**

## Proff. Peter Cincinelli; Francesca Lenoci

**Module: Finance (40 hours)**

**Lecturer**: Peter Cincinelli, [peter.cincinelli@unibg.it](mailto:peter.cincinelli@unibg.it) (40 hours)

**Lecturer (Tutor)**: Andrea Roncella, [andrea.roncella@unicatt.it](mailto:andrea.roncella@unicatt.it) (30 hours)

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

The course aims to provide students with a broad knowledge of corporate finance, with a strong focus on data and applied valuation. We make use of statistical/mathematical and economic features together with applicative programs.

The course will deal with the main economic capital “Valuation Methods”, mainly from an applied point of view, considering empirical valuation problems, with particular attention to capital budgeting, capital market theory, capital structure valuation and options. These issues will be approached in depth taking care of data and applied valuation with case studies. We will also dedicate to application and empirical aspects, also through the help of various databases.

*KNOWLEDGE AND UNDERSTANDING*

At the end of the course, students will be able to: (i) appreciate the relevance of the main theoretical and empirical issues of corporate finance; (ii) know the most relevant methods of assessing and valuating corporate capital, as well as issues related to the relevant financial structure; (iii) identify and understand the main problems concerning valuation issues, proposing applied solution on specific topics.

Students will analyse data concerning applied valuation and make choices about these features. The students will be able to apply the different knowledge acquired to theoretical and empirical cases related to business situations, also through the knowledge and use of different databases and applicative programs.

***COURSE CONTENT***

After an initial overview of the main concepts regarding the value of the money, the course will provide an in-depth study of advanced capital budgeting methods and the evaluation of the firm. Subsequently, the course will focus on the capital market theory and on the capital structure valuations. At the end, the course will also provide concepts concerning options with a special focus on real options. The course is structured as follows:

***Valuation methods:*** (i) valuation using the Net Present Value Framework; (ii) the cost of capital; (iii) advanced capital budgeting; (iv) estimating project cash flows.

***Firm valuation:*** (i) Dividend Discount Model (DDM); (ii) Constant Growth Dividend Discount Model (CGDDM) (stock prices and investment opportunities); (iii) life cycles and Multistage Growth Models; (vi) applications to DDM and CGDDM; (vi) valuation using Multiples; (vii) Valuation of Mergers and Acquisitions – Market reactions to public offerings.

***Capital Market Theory:*** (i) quick review on return and risk, Markowitz model; (ii) Capital Asset Pricing Model (CAPM); (iii) CAPM and Index models; (iv) multifactor models – Fama and French three factor model with empirical applications;

***Capital Structure and Valuation:*** (i) quick overview of basic concepts; (ii) capital structure in a perfect market; (iii) debt and taxes; (iv) advanced topics in capital budgeting;

**Options:** (i) review of basic option pricing theory; (ii) identifying real options; (iii) implication of real options on the traditional valuation of enterprises; (iv) potential approaches to valuation; (v) practical considerations when valuing real options.

***READING LIST***

D. Hillier-s.a. Ross-rw. Westerfiled-j.f. Jaffee-b.d. Jordan, Corporate Finance: European Edition, Mc Graw-Hill, 2018, 3rd English Ed.

J. Berk - P. De Marzo, Corporate Finance: Global Edition, Pearson, 2019, 5th English Ed.

Further reading list references and other study material may be provided during lectures. Any supplementary material (slides, data, etc.) will be made available to students on the blackboard platform on a weekly basis.

***TEACHING METHOD***

Lectures will be held both face-to-face. Lectures introduce the underlying theory, while empirical applications through econometrics software allow Students to apply the techniques introduced and test their understanding. There also be 30 hours of tutorials.

***ASSESSMENT METHOD AND CRITERIA***

The final assessment, for attending and non-attending Students, will be composed of: (i) 70% written exam: length 60 minutes, 5 open questions (exercises); (ii) 30% applied assignments on a set of predetermined current financial market issues.

***PREREQUISITES***

Knowledge of finance, financial mathematics, statistics and econometrics.

## **Module Banking (40 hours): Prof.ssa Francesca D. Lenoci**

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

Following an introduction describing the European banking system, the course will focus on major applications of data science to banking. Banks are integrating data analytics in their decision-making process, risk management and are developing strategies based clients’ data to gain competitive advantage. Furthermore, we will investigate the banking sector potential growth from the extensive adoption of data analytics. Case studies will support examples on the use of data analytics.

*Knowledge and understanding*

At the end of the course, students will be able to recognize the current development of data analytics in banking and to identify the applications of data science in different areas of the banking business. Students will also be able to assess the drivers of the investments in data analytics (efficiency, cost reduction, profit maximization, targeting clients, increasing market share) and to assess in which banking areas data analytics could be exploited further.

*Ability to apply knowledge and understanding*

Using programming languages (R, Python), statistical software (Stata), and data providers (Bloomberg, Eikon, BankFocus) students will be able to apply knowledge acquired to empirical cases.

***COURSE CONTENT***

## Module: *Prof.ssa Francesca Daniela Lenoci*

Nowadays banks, as well as other financial institutions, have strong incentives in using data and automated processes. Following a short introduction on the banking business, the course will focus on the usage of analytics in risk management, decision making, and computation of regulatory metrics.

The structure of the course will be the following:

1. The European banking system
   1. commercial vs. investment banks
   2. M&A, trend in branches and banks’ market shares
   3. Trend profitability and NPLs
2. Banking Union and banking supervision
3. Conventional and Unconventional monetary policy
4. Transmission channel of monetary policy via banks
5. Basel agreement and capital requirements
6. Credit risk
7. Liquidity risk
8. Market risk
9. Use of analytics in banking by business areas: commercial, risk, innovation, communication and decision making
   1. Use of analytics is sales management
   2. Use of analytics for profit enhancement and efficiency
   3. Use of analytics in financial risk management
   4. Use of analytics for regulatory compliance
   5. Use of analytics in non-financial risk management

***READING LIST***

There is not any textbook used as main reference. Classes and the material presented via slides will rely on official websites, research papers and business cases.

Any supplementary material (slides, data, etc.) will be made available to the students via Blackboard on a weekly basis.

***TEACHING METHOD***

The course includes both frontal lectures, consisting of theoretical lectures and empirical exercises (90%), and possible speeches by field experts (10%).

The course includes the possibility of carrying out group projects/assignments.

***ASSESSMENT METHOD AND CRITERIA***

Knowledge and skills will be assessed via a written exam, which is composed by two theoretical and two empirical questions as *short-answer or essay*. The exam lasts 60 minutes. This module includes also the possibility to develop *case studies and assignments* which will be part of the overall exam of the module and weigh between 25% and 40% of the final mark.

The exam will be assessed on the relevance of the students’ answers, their appropriate use of the specific terminology, an argumentative and consistent structure, the ability to identify conceptual links, as well as the rigorous application of the methodology and empirical investigations.