



# Master in Finance

Second year – Corporate Finance - Syllabus 2019-2020

## UE1: ASSET PRICING

Semester: 3

Language: English

ECTS Credits: 5

Lecture Hours: 30

### Presentation and intended learning outcomes

This course covers the fundamentals and practice of asset pricing.

The first part of the course will pay special attention to fixed income products. Financial institutions and corporations use fixed income products to manage their assets and liabilities. They can use financial derivatives such as futures, options, and swaps to hedge their risks or to change the returns of their portfolios. The purpose is to provide students with the necessary skills to value and to employ fixed income instruments. We will specifically focus on instruments that are mostly used by portfolio managers, treasurers and traders, namely interest rate derivatives, currency forward contracts, interest rate swaps and options. The approach will be very market oriented in order to offer a link between the theory (pricing models) and the market practices.

The second part of the course will uncover the fundamentals of asset pricing models, starting from notions of market efficiency and anomalies linked to return predictabilities. We start by introducing basic concepts and dynamic asset pricing models building on the CAPM, with the aim of understanding how these models can be used to explain asset prices. We develop consumption-based asset pricing models and explore how asset prices depend on future expected payoffs and investors' preferences about consumption and risk, and how they are affected by consumption and payoff shocks. We introduce factor models and give an outlook on their use and role in practice.

By the end of this course, students should be able to:

- apply consumption-based asset pricing models to assess risk premia
- explain the market efficiency hypothesis and its empirical validity
- discuss the use and role of factor models
- apply asset pricing models to evaluate investment performance

- compute the value of fixed income instruments
- choose the right fixed income instrument according to a financial objective

### Prerequisite

Students are expected to have a minimum preparation in mathematics, statistics and econometrics. An introductory course of Asset Pricing is a plus. Students are expected to have a basic knowledge of standard financial instruments (bonds, forward contracts, options).

### Bibliography

- John Cochrane, Asset Pricing, Princeton University Press, 2005.
- Lionel Martellini, Philippe Priaulet, Stéphane Priaulet, Fixed-Income securities, Wiley
- A guide to the ACI dealing certificate
- Websites: BIS, ECB, FED, ISMA, ICMA, SIFMA

## UE2: CORPORATE FINANCE

Semester: 3

Language: English

ECTS Credits: 5

Lecture Hours: 30

### Presentation and intended learning outcomes

The course covers several topics in corporate finance and emphasizes the interaction between financial decisions and strategic choices of corporations. The objective of the course is to apply concepts and tools from finance theory to analyze actual problems faced by firms, and to provide insights on the practice of corporate finance.

At the end of this course, students should be able to:

- apply standard conceptual frameworks used in finance to major corporate events (like e.g. IPOs, M&A, dividend distribution, corporate governance decisions, early stage fund raising, ...)
- evaluate the financial implications of these events
- identify the ethical issues at stake for corporations
- appreciate the role of corporate governance.
- provide concise summaries of complex cases in both written and oral form
- work effectively in a group

### Prerequisite

Foundations on corporate finance theory (Modigliani-Miller, trade-off theory, agency issues, asymmetric information and financial decisions)

Basics of corporate valuation and accounting (financial statements, valuation methods: DCFs, multiples, cost of capital)

## Bibliography

- Brealey, Myers and Allen (2017) Principles of Corporate Finance, 12th edition, McGraw-Hill / Irwin

## UE3-1: INFORMATION TECHNOLOGY FOR FINANCE (INTRODUCTION TO SAP)

Semester: 3

Language: English

ECTS Credits: 2

Lecture Hours: 12

### Presentation and intended learning outcomes

Enterprise resource planning (ERP) systems are used by organizations looking to manage their business functions within a centralized and integrated system. The course is intended to explain how the fundamental business processes interact within an ERP system in the different functional areas such as sales and distribution, materials management, production planning, financial accounting, controlling, and human resource management. Special attention will be dedicated to SAP as it is the most common ERP system which is used among large enterprises. The course is given on a hands-on approach: after an introductory part, students learn to use an ERP through practical applications in computer lab.

By the end of the course, students should be able to:

- explain the main concepts of an ERP and discuss its opportunities and challenges
- describe the structure of an SAP system
- navigate through an SAP system
- execute simple SAP transactions.
- work effectively in a team

### Prerequisite

- Basic knowledge in business processes
- Basic knowledge of personal computer

## Bibliography

- Material will be distributed in class.

## UE3-2: INFORMATION TECHNOLOGY FOR FINANCE (VBA FOR FINANCE)

Semester: 3

Language: English

ECTS Credits: 3

Lecture Hours: 18

## Presentation and intended learning outcomes

Visual Basic for Applications (VBA) is an implementation of Microsoft's programming language Visual Basic, and associated development environment, built into Microsoft Office applications. Excel VBA is widely used in the finance industry, to create complex financial spreadsheet models. This intermediate course aims at providing students with a solid background and understanding of VBA structured and event-driven programming techniques, along with best programming practices, such that students write good quality, easy to maintain code.

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

- maintain an existing application through bug fixing, code cleanup, and feature developments
- develop new applications using event-driven and object oriented programming techniques
- enhance code quality through good coding practices
- synthesize information and present the results in a written form.
- work effectively in a group

## Prerequisite

- General knowledge of personal computer.
- Excel (intermediate).
- Programming (beginner).

## Bibliography

- Chandan Sengupta, Financial Modeling Using Excel and VBA, 2nd edition, Wiley Finance, 2009.
- Pachamanova, Dessimlava A., and Frank J. Fabozzi. Simulation and Optimization in Finance Modeling with MATLAB, @Risk, or VBA. Wiley, 2010.
- John Tjia, Building Financial Models, 2nd revised edition, McGraw-Hill, 2009.
- Simon Benninga, Financial Modeling, 4th revised edition, The MIT Press, 2014.

## UE4: FINANCIAL ECONOMETRICS

Semester: 3

Language: English

ECTS Credits: 5

Lecture Hours: 30

## Presentation and intended learning outcomes

Financial econometrics is the application of statistical methods to financial data. It provides a set of tools that are useful for modeling financial data

and testing hypothesis about how markets work and prices are formed. The course is designed to cover the essential tools of financial econometrics and empirical finance with a moderate degree of sophistication. In this sense, the course will be applied to give students the useful tools to become fully autonomous when carrying out empirical analysis in a professional context.

On completion of this course, students should be able to:

- describe the statistical properties of the OLS estimator
- translate an economic argument into a formal econometric test
- implement simple statistical tests of hypothesis
- use statistical packages to estimate econometric models
- provide an economic and statistical interpretation of a regression output
- communicate effectively in oral and written form
- work effectively in a group

### Prerequisite

Intermediate knowledge in finance theory and in econometrics.

### Bibliography

#### Course Material

Lecture slides will be posted in Google Classroom. The slides are not a complete record of what we will discuss in class. Paper copies of the lecture notes will not be made available in class; if you want a printed copy, it is your responsibility to print them in advance. All courses announcements will be made in class and posted on Google Classroom. Please check the course page regularly.

#### Main Reading

- Brooks, C. (2018) *Introductory Econometrics for Finance, Second Edition*. Cambridge University Press.
- Croissant, Y. (2019). Package plm. <https://cran.r-project.org/web/packages/plm/plm.pdf>
- Hornik, K. (2019). Package tseries. <https://cran.rproject.org/web/packages/tseries/tseries.pdf>
- Kleiber, C., & Zeileis, A. (2008). *Applied econometrics with R*. Springer Science & Business Media.
- Tsay, R. S. (2014). *Financial Time Series*. Wiley.

Additional reading material might be provided if necessary.

## UE5: ECONOMICS FOR FINANCE

Semester: 3

Language: English

ECTS Credits: 5

Lecture Hours: 30

### Presentation and intended learning outcomes

This course introduces some fundamental economic concepts and tools and shows how these can be used to understand financial behaviors as well and the functioning of financial markets.

Upon completion of this course, students will be able to:

- describe the drivers of international trade and capital flows
- analyze the functioning of global financial markets (exchange rates, parity relations, international arbitrage)
- master the fundamental tools for international risk management
- work with economic models that underpin theories of intermediation and corporate finance
- understand the interactions between financial markets and financial decisions
- undertake a model-based analysis of financial decision-making by companies, investors and intermediaries
- apply ethical considerations to global issues
- provide concise summaries of complex cases in written form

### Prerequisite

Previous exposure to basic finance concepts is a plus.

### Bibliography

#### Part 1 – Macro

- [BH] Bekaert, Geert and Robert Hodrick, International Financial Management. Pearson, 2nd edition.
- [MSB] Miles, David, Andrew Scott, Francis Breedon, Macroeconomics - Understanding the Global Economy, Wiley, 3rd edition

#### Part 2 – Micro

These two textbooks can be used interchangeably, you only need to read one. They are the best textbooks covering the economic foundations of modern corporate finance.

- [BD] Berk, Jonathan and Peter DeMarzo, Corporate Finance, Global Edition (3rd edition) Pearson 2013 (ISBN 978-0273792024)
- [HGT] Hillier, David, Mark Grinblatt and Sheridan Titman, Financial Markets and Corporate Strategy – 2nd European Edition, McGraw-Hill, ISBN 978-0077129422

## UE6: CORPORATE VALUATION

Semester: 4

Language: English

ECTS Credits: 4

Lecture Hours: 24

## Presentation and intended learning outcomes

The objective of this course is to allow students to review financial analysis and valuation techniques, and to apply them to the context of private companies.

At the end of the course, students should be able to

- describe valuation methods for non listed companies
- conduct the financial analysis of a private company
- apply appropriate valuation methods depending on context
- assess financial and extra financial value drivers of a business
- work effectively in a group
- adapt communication for a managerial audience
- synthesize information and make focused presentation

## Prerequisite

A first course on financial analysis and corporate valuation methods.

## Bibliography

- "Corporate Finance", Pierre Vernimmen, Pascal Quiry, Yann Le Fur, Maurizio Dallocchio, Antonio Salvi, Wiley; 5 edition (December 11, 2017)

## UE7: FINANCIAL INTERMEDIATION

Semester: 4

Language: English

ECTS Credits: 4

Lecture Hours: 24

## Presentation and intended learning outcomes

The course will provide students with a general knowledge in cash management and financial intermediation and its environment.

At the end of the course, students should be able to

- describe the role of banks as liquidity providers
- explain the source of fragility of banks
- illustrate how banks reduce risk through asset-liability management
- describe how banks implement recent financial stability regulation
- describe tools offered by banks for corporate cash management
- work effectively in a group
- adapt communication for a managerial audience
- synthesize information and make focused presentation

## Prerequisite

None.

## Bibliography

- Bank management, 8 th edition, S. Macdonald, Timothy W. Koch
- Risk Management and financial institutions, 4th edition, John c Hull (Willey)

## UE8: ADVANCED CORPORATE FINANCE

Semester: 4

Language: English

ECTS Credits: 4

Lecture Hours: 24

## Presentation and intended learning outcomes

The purpose of this course is to help students acquire the necessary skills to identify, value and assess corporate risks, as well as to employ futures, swaps, options and related financial instruments to hedge these risks. The course covers both theoretical principles as well as practical approaches. For this reason, it includes readings, case studies and a practical project.

By the end of this course, students should be able to:

- classify the different sources of corporate risk
- calculate some risk measures
- formulate recommendations for corporate risk management
- classify the different types of real options
- identify real options embedded in a corporate decision
- compare and contrast real options analysis with traditional valuation methods
- work effectively in a group
- provide concise summaries of complex cases in both written and oral form

## Prerequisite

The course builds on introductory courses in market finance and derivatives. Students are expected to have a basic knowledge of standard derivative instruments (forward contracts, options), of the notion of pricing by arbitrage, and of the Black and Scholes option pricing formula. More precisely, the following introductory Finance courses are recommended: M1 Finance, TSM: Financial Derivatives and Financial Markets  
M1 in Economics, TSE: Market Finance

The course is not highly technical in the sense that it does not focus on the pricing of derivatives instruments but on their use as risk management instruments. It also applies option pricing formulas to price real options. Students are therefore expected to have a

minimum preparation in mathematics, statistics, econometrics, and programming, and to use knowledge from the VBA and Asset Pricing courses.

## Bibliography

- A Framework for Risk Management, by Kenneth Froot, David Scharfstein, and Jeremy Stein, Harvard Business Review, November- December 1994; reprinted in the Journal of Applied Corporate Finance
- Hedging with Foreign Currency Options at Pearson Inc, Southeast Missouri State University, Case Center JIACS15-01-13
- Foreign Exchange Hedging Strategies at General Motors: Competitive Exposures, Harvard Business School 9-205-096.
- Risk Management and insurance, by Harrington and Niehaus, Mc Graw Hill

## UE9-1: FINANCIAL REPORTING (INTERNATIONAL FINANCIAL REPORTING STANDARDS (IFRS))

Semester: 4

Language: English

ECTS Credits: 2

Lecture Hours: 12

## Presentation and intended learning outcomes

The objective of this course is to introduce students to International Financial Reporting Standards.

At the end of the course, students should be able to

- execute consolidation of simple financial statements
- describe principles and characteristics of IFRS/IAS for consolidated financial statements
- evaluate differences between IFRS/IAS and local GAAPs
- apply intricate IFRS/IAS requirements (e.g. IAS 12, IAS 21)

## Prerequisite

A first course in financial accounting and consolidated financial statements.

## Bibliography

### I – Books:

- IFRS: Interpretation and Application, Barry J. Epstein and Eva K. Jermakowicz, John Wiley & Sons Inc., One Wiley Drive
- Somerset, NJ 08875 USA
- Financial Accounting and Reporting, FT Prentice Hall, Pearson Education, Barry Elliot and Jamie Elliot
- Corporate Finance: Theory and Practice, Pierre Vernimmen Dalloz

## II - Websites:

- International Federation of Accountants (IFAC): <http://www.ifac.org>
- International Accounting Standards Committee (IASC): <http://www.iasc.org.uk>
- IAS Plus: <http://www.iasplus.com>
- Securities and Exchange Commission (SEC): <http://www.sec.gov>
- Financial Accounting Standard Board (FASB): <http://www.fasb.org>

## UE9-2: FINANCIAL REPORTING (STATUTORY AUDIT)

Semester: 4

Language: English

ECTS Credits: 2

Lecture Hours: 12

### Presentation and intended learning outcomes

The objective of this course is to familiarize students with legal audit procedures and regulation.

At the end of the course students should be able to explain the principles and regulatory framework of audit and to describe the legal audit procedure. Students should also be able to assess the importance of ethics and compliance in audit procedures.

### Prerequisite

A first course in financial reporting and consolidated statements.

### Bibliography

#### Official regulation:

- Official Journal of the European Union, Commission regulation 1725/2003, 29 september 2003
- Official Journal of the European Union, Directive 2003/71, 4 november 2003, published on the 31 december 2003
- Official Journal of the European Union, Directive 2004/109, 15 december 2004, published on the 15 december 2004 Official Journal (France), AMF, General regulation, Arrêté 4 january 2007, published on the 20 january 2007

#### Books:

- "Corporate Finance", Pierre Vernimmen, Pascal Quiry, Yann Le Fur, Maurizio Dalocchio, Antonio Salvi, Wiley; 5 edition (December 11, 2017)

#### Web sites:

- Focus IFRS <http://www.focusifrs.com>
- International Accounting Standards Committee (IASB) <http://www.iasb.org>
- Securities and Exchange Commission (SEC) <http://www.sec.gov>
- International Accounting Standards Committee (IASB) <http://www.iasb.org>
- Financial Accounting Standard Board (FASB) <http://www.fasb.org>

## UE10: PSYCHOLOGY FOR FINANCE

Semester: 4

Language: English

ECTS Credits: 4

Tutorial Hours: 24

### Presentation and intended learning outcomes

Traditional finance typically considers that financial markets are efficient because populated by rational investors who maximize their expected utility from consumption. This course departs from this view by showing how inefficiencies can arise due to investors' psychology and limits to arbitrage. Psychology shapes investors' preferences: Anticipatory utility, others-regarding preferences and mood are important in understanding investors' behavior. Psychology also affects investors' perception: overconfidence, confirmation bias and several heuristics may impair their judgment. Whether these psychological factors have an impact on financial markets ultimately depends on rational speculators' ability to fight against mispricings. These topics will be covered through lectures and class experiments and will trigger discussions of issues such as momentum, bubbles and crashes.

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

- identify the sources of financial markets' inefficiencies
- list the various types of investors' preferences
- describe the various types of investors' cognitive biases
- use cognitive biases to design trading strategies
- critically evaluate the impact of psychology on corporate decision-making
- work effectively in a group

### Prerequisite

Basic mathematics and statistics.

### Bibliography

- Investments (Eighth edition), Zvi Bodie, Alex Kane and Alan J. Marcus, Publisher: Irwin McGraw-Hill
- Irrational Exuberance (latest edition), Robert J. Shiller, Publisher: Random House Inc.
- Inefficient Markets---An Introduction to Behavioral Finance, Andrei Shleifer, Publisher: Cambridge University Press
- Efficiently Inefficient, Lasse Pedersen, Publisher: Princeton University Press.

## UE11: INTERNSHIP/ENTREPRENEURIAL PROJECT

Semester: 4

Language: English

ECTS Credits: 15

### Presentation and intended learning outcomes

The objective of the internship is to help students develop social, communication and technical skills useful for their future career.

At the end of the internship students should be able to

- apply academic concepts in a practical situation in a professional environment
- expand content specific and transferable skills
- reinforce the professional network
- respect and integrate the opinion of others
- synthesize information and make focused presentation
- apply ethical considerations to management decisions

### Prerequisite

Students should have attended the M2 classes before starting the internship.