

Number of ECTS credits : 4

Course language : Anglais

Course leader : KALAITZOGLOU Iordanis

Speakers : KALAITZOGLOU Iordanis

≡ COURSE DESCRIPTION

This module aims at addressing the key aspects of business valuation in the current economic climate. The first part focuses on the contexts of evaluation, the main methods and the importance of the evaluation process. An important part is devoted to the cost of capital and the components of various sources of capital. It is then possible to present the main evaluation methods and implement them in practical examples and actual case studies. Some case studies are carried out by professionals. The final session will open the debate through a reflection on the contributions and limitations of the method of real options.

≡ COURSE OBJECTIVES

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

- Compute the WACC and its components
- Use different techniques to value a firm
- Understand, search-look and extract relevant information from various data sources
- Extract Information from the main financial statements
- Update and Adjust current figures
- Estimate Discount Rates
- Estimate Cash Flows
- Estimated Discount Rates
- Decide on what is the most appropriate evaluation for different companies
- Develop a group report

≡ LEARNING GOALS

LG01 - Analysis : Make use of critical analysis/critical thinking skills

LG03 - Analysis : Use cross-disciplinary approaches

LG04 - Action : Make proposals, take initiatives

LG12 - CSR : Take a decision from economic, social and environmental perspectives

LG14 - Cooperation : Work effectively in a team

≡ TACKLED CONCEPTS

- Discount Rates
 - o Cost of Equity
 - o Cost of Debt
 - o WACC
- Estimate Cash Flows
 - o Measure and Update Earnings
 - o From Earnings to Cash Flows
- Estimate Growth
 - o Stable
 - o 2-stage Growth Models
 - o 3-stage Growth Models
- Relative Valuation
 - o Earnings Multiples
 - o Book Value Multiples
 - o Sales Multiples
- Real Options
 - o Option to Expand
 - o Option to Abandon
 - o Option to Delay
 - o Equity as an option to liquidate

≡ LEARNING METHODS

10 x 3 hour lectures will be used to introduce new material and to expand areas of financial theory but much of the learning will be done through case study work. Students will be required to analyse a situational problem and to put forward a solution for discussion.

≡ ASSIGNMENTS

Mid-term exam : Group Coursework 30% of the final mark

Final Exam : Written Exam, 70% of the final mark, open book, calculator needed

For the group project, you will know your group and group members by the end of the first week of the module.

Late submissions will be penalized by 10%/day (max 30%) reduction of the final grade.

≡ BIBLIOGRAPHY

Damodaran on Valuation, Willey, 2nd edition <http://www.scholarvox.com/reader/index/docid/10051129/searchterm/damodaran>

Investment Valuation, A. Damodaran, Willey, 2nd edition

Corporate Finance, European edition, HILLIER et al., 2010

≡ EVALUATION METHODS

30 % : Continuous assessment (Team Project) - Iordanis KALAITZOGLOU

70 % : Final exam - Iordanis KALAITZOGLOU

≡ SESSIONS

1 Introduction LECTURE : 03h00

2 DCF I LECTURE : 03h00

- Discount Rates
 - o Cost of Equity
 - o Cost of Debt
 - o WACC
 - o Case Studies

3 DCF II LECTURE : 03h00

- Estimate Cash Flows
 - o Measure and Update Earnings
 - o From Earnings to Cash Flows
 - o Case Studies

4 DCF III LECTURE : 03h00

- Estimate Growth
 - o Stable
 - o 2-stage Growth Models
 - o 3-stage Growth Models

5 DCF case studies LECTURE : 03h00

- DCF Examples - Complete Case Studies – Full Valuations

6

Relative valuation

LECTURE : 03h00

- Introduction to Relative Valuation
 - o Earnings Multiples
 - o Book Value Multiples
 - o Sales Multiples
-

7

Relative valuation case studies

LECTURE : 03h00

- Relative Valuation and DCF Examples - Complete Case Studies – Full Valuations
-

8

Real options

LECTURE : 03h00

- Introduction to Real Options
 - o Option to Expand
 - o Option to Abandon
 - o Option to Delay
-

9

Real options case studies

LECTURE : 03h00

- Equity as an option to liquidate
 - Real Option, Relative Valuation and DCF Examples - Complete Case Studies – Full Valuations
-

10

Recoup and Revision

LECTURE : 03h00

Number of ECTS credits : 4

Course language : Anglais

Course leader : NOCERA Giacomo

Speakers : NOCERA Giacomo

≡ COURSE DESCRIPTION

The course deals with the theory and the application of portfolio management techniques.

The aim is to survey the major theories, tools and results in portfolio management.

As the course emphasizes not only the theory, but also its practical application, by the end of this course, students are expected to have a good understanding of the asset management market, the financial instruments, and the market practitioners' terminology.

In addition, they should be able to develop a fair knowledge and understanding of key issues in asset allocation and portfolio composition and management and to implement adequate portfolio management strategies.

The course is designed to cover most of the "Portfolio Management and Wealth Planning" topic area and many concepts of some of the other topic areas of the CFA Candidate Body of Knowledge.

≡ COURSE OBJECTIVES

The main objective of this course is to learn the key theory with practical applications relevant to portfolio management.

After completing this course students will be able to:

- Measure and manage portfolio risk and return
- Select and monitor an investment and build a portfolio
- Practically understand and apply asset pricing basics

≡ LEARNING GOALS

LG02 - Analysis : Analyse complex situations

LG05 - Action : Evaluate, prevent and manage short, medium and long-term risks

LG14 - Cooperation : Work effectively in a team

≡ TACKLED CONCEPTS

Portfolio mathematics

Risk - return - utility functions

Asset pricing models

Index models

Portfolio performance evaluation

Passive and active portfolio management

Allocation of funds to portfolios

≡ LEARNING METHODS

Lectures

Practical lab applications

Team project

Homework and self-assessed work

Classroom discussion

≡ ASSIGNMENTS

Facultative homework

Group coursework

≡ BIBLIOGRAPHY

Z. Bodie; A. Kane; A.J. Marcus, Investments. McGraw-Hill International

≡ EVALUATION METHODS

30 % : Continuous assessment (Team Project) - Giacomo NOCERA

70 % : Final exam - Giacomo NOCERA

1 Introduction: the asset management industry

LECTURE : 03h00

This session offers a description of the course (aims and objectives, teaching and learning methods, topics to be covered, class rules) and provides an introduction to the asset management industry.

2 Quantitative tools for portfolio management

LECTURE : 03h00

This session is devoted to a review of the quantitative tools: the basics of return calculation, a review of basic statistics, regression analysis, and matrix algebra.

3 The mean-variance framework

LECTURE : 03h00

This session introduces the concepts of return and risk as the main inputs of any asset allocation strategy and highlights the advantage (and the drawbacks) of using expected returns and variance of returns as the only indicators of return and risk. It also shows how individuals' preferences can be represented in such a mean-variance framework.

4 Portfolio Selection: the theory

LECTURE : 03h00

This session presents the Markowitz's model and shows how to build the optimal portfolios by using (i) 2 risky assets; (ii) a risky asset and a riskless one; (iii) n risky assets; (iv) n risky assets and a riskless one. It also shows how investor's preferences enter the portfolio selection.

5 Portfolio Selection: MS Excel application

LECTURE : 03h00

This session completes the previous one by showing how to generate the efficient frontier of financial portfolios using real data on Excel. The quadratic optimization approach (through Excel solver) is discussed.

6 CAPM and index models

LECTURE : 03h00

In this session the Capital Asset Pricing Model, a centerpiece of the modern financial economics, is introduced and discussed critically. This session also introduces the index models (single-index and multi-index models), their advantages and limitations, how to estimate them and how to interpret this information. Practical examples of index model applications are presented and the link between the market model and the CAPM is discussed.

7 APT and multifactor models of risk and return

LECTURE : 03h00

In this session the Arbitrage Pricing Theory is outlined. The Fama-French multifactor model of risk and return is introduced and compared to the standard CAPM.

8 The frontiers of portfolio diversification

LECTURE : 03h00

This session illustrates the benefits of a portfolio diversification across different markets, sectors, and different asset classes. An analysis of the main alternative asset classes is provided.

9**Practical issues in portfolio management (I)**LECTURE : 03h00

This session deals with some practical issues in portfolio management: the rationale of the existence of different mutual funds, the need for benchmarks, the costs and benefits of two alternative investment approaches (active vs passive portfolio management), the performance evaluation measures (risk adjusted measures such as the Sharpe ratio, the Treynor ratio, the Jensen's alpha, the appraisal or information ratio are presented).

10**Practical issues in portfolio management (II)**LECTURE : 03h00

This session completes the previous one as it deals with the performance analysis of mutual funds and shows the standard approaches to decompose performances and identify investment styles. It also discusses the modern portfolio management process and its ethics as well as the different stages of the portfolio process. Finally, it deals with the remuneration of the asset management activity, through an analysis of the management fees and the mutual funds' expense ratios.

Number of ECTS credits : 4

Course language : Anglais, Français

Course leader : ALEXIS Frédéric

Speakers : COINCE Stéphane

≡ COURSE DESCRIPTION

After completing this course you will be able to:

- Modelling future financial environment
- Create models of asset valuation and derivatives
- Calculate all the parameters of position risk / portfolio
- Establish arbitrage strategies
- Use the tools in the trading room
- Develop tools alert

≡ COURSE OBJECTIVES

The objective of this course is to understand the business of trading in financial markets: market maker, manager on own account or Hedge Fund Manager

≡ LEARNING GOALS

LG01 - Analysis : Make use of critical analysis/critical thinking skills

LG04 - Action : Make proposals, take initiatives

LG07 - Entrepreneurship and Innovation : Identify needs and draw up an appropriate offer

LG10 - CSR : Identify and understand stakeholder interests

LG15 - Cooperation : Act with flexibility, adaptability and intellectual curiosity

≡ TACKLED CONCEPTS

Concepts taught:

- Curves of expected returns
- Risk Premiums
- Statistical Tools
- Probabilistic models
- Determinants and sensitivities
- Duration of assets
- Arbitration vs Active Active
- Arbitration vs Active Derivatives
- Arbitration vs Derivatives Derivatives
- Calculate P & L
- Risk Management

≡ LEARNING METHODS

Case Study, Setting, Personal research

≡ ASSIGNMENTS

Personal work before each session

≡ BIBLIOGRAPHY

Options, Futures, and Other Derivatives, John C. Hull, Ninth Edition (ISBN: 978-0-13-345631-8)

≡ EVALUATION METHODS

100 % : Final exam - Stephane COINCE

≡ SESSIONS

1**reminders**

LECTURE : 03h00

Curves of expected returns, risk premiums and financial calculations

2**Statistical Tools**LECTURE : 03h00

3**Probabilistic models**LECTURE : 03h00

4**Determinants and sensitivities**LECTURE : 03h00

5**Duration of assets**LECTURE : 03h00

6**Arbitrage Actif vs Actif**LECTURE : 03h00

7**Arbitrage Actif vs Derivatives**LECTURE : 03h00

8**Arbitrage Derivatives vs Derivatives**LECTURE : 03h00

9**Calculate P & L**LECTURE : 03h00

10**Risk Management**LECTURE : 03h00

Number of ECTS credits : 4

Course language : Anglais

Course leader : GUYOT Alexis

Speakers : GUYOT Alexis

≡ COURSE DESCRIPTION

The aim of this course is to give knowledge to students about default risk and skills to assess it. Students will apply credit scoring techniques used in the banking industry as well as within companies to assess borrowers' risk of default.

Prerequisites for this course:

- Financial analysis course (basic level, such as the one offered in Semester 3 of the Grande Ecole programme)
- Basic math, probability theory & statistics

A brief reminder of these topics will take place within the course.

≡ COURSE OBJECTIVES

Upon completion of the module, you should have:

- advanced knowledge and critical understanding in rating, scoring and default prediction techniques applied in the banking & corporate industry
- demonstrated ability to exercise critical judgment on complex situations
- the ability to assess a company's financial position and risk of bankruptcy through a solid and detailed analysis of its financial statements, business environment, strategy and financing decisions
- the understanding of the impact of ESG dimensions on credit rating

≡ LEARNING GOALS

LG02 - Analysis : Analyse complex situations

LG05 - Action : Evaluate, prevent and manage short, medium and long-term risks

LG12 - CSR : Take a decision from economic, social and environmental perspectives

≡ TACKLED CONCEPTS

Default risk

Rating

Scoring

ESG dimensions and credit rating

Covenant package

Technical default & insolvency

Default prediction models

≡ LEARNING METHODS

Case studies

Numerical applications

Softwares used in this class:

- Excel (extensively used)

≡ ASSIGNMENTS

Both formative (in class) and summative (final exam) assessments.

30% of the final grade is assessed by a coursework.

70% of the final grade is assessed by an individual final exam (closed books, 1 non programmable calculator authorized)

≡ BIBLIOGRAPHY

Damadoran, A. Corporate Finance: Theory and Practice. John Wiley & sons

Tan, P. N., Steinbach M., Kumar V. Introduction to data mining. Pearson

≡ EVALUATION METHODS

30 % : Continuous assessment - Alexis GUYOT

70 % : Final exam - Alexis GUYOT

≡ SESSIONS

1

Rating & scoring

LECTURE : 03h00

Rating methodology

- Assessing a business profile
- Assessing a financial profile

Scoring

2

Moody's credit risk assessment (part 1)

LECTURE : 03h00

Moody's standard adjustments

3

Moody's credit risk assessment (part 2)

LECTURE : 03h00

Moody's standard adjustments

4

Moody's credit risk assessment (part 3) / ESG & credit rating

LECTURE : 03h00

Moody's adjustments

Total SA case study

Integration of ESG factors into credit risk assessment

5

Covenant package

LECTURE : 03h00

6

Default prediction models: linear regression classifiers

LECTURE : 03h00

7

Default prediction models: naïve Bayesian classifiers

LECTURE : 03h00

8

Default prediction models: Linear Discriminant Analysis (part 1)

LECTURE : 03h00

9

Default prediction models: Linear Discriminant Analysis (part 2)

LECTURE : 03h00

Number of ECTS credits : 4

Course language : Français

Course leader : SAMBROOK Timothy

Speakers : MIFFRE JOËLLE

≡ COURSE DESCRIPTION

This module aims to provide students with the necessary training to develop an advanced understanding of derivatives and commodities.

≡ COURSE OBJECTIVES

Upon completion of the module, you should:

- have specialist knowledge of the different types of derivative instruments,
- be able to describe the strategies that can be implemented in derivative markets and understand their risk characteristics,
- have an in depth knowledge of the pricing of derivatives products.

≡ LEARNING GOALS

LG02 - Analysis : Analyse complex situations

LG04 - Action : Make proposals, take initiatives

LG05 - Action : Evaluate, prevent and manage short, medium and long-term risks

LG07 - Entrepreneurship and Innovation : Identify needs and draw up an appropriate offer

LG10 - CSR : Identify and understand stakeholder interests

≡ TACKLED CONCEPTS

- Topic 1: Forward and futures
- Topic 2: Commodity futures
- Topics 3-8: Options
 - Topic 3: Options markets and strategies
 - Topic 4: Put-call parity
 - Topic 5: Binomial pricing
 - Topic 6: Mathematical foundations: Stochastic calculus and Monte-Carlo simulations
 - Topic 7: Black-Scholes-Merton model
 - Topic 8: Hedging and the Greeks
- Topic 9: Swaps and swaptions

≡ LEARNING METHODS

30 hours face to face

Group coursework

Readings

Practical exercises

≡ ASSIGNMENTS

Readings, Exercises and Group coursework

≡ BIBLIOGRAPHY

I base my lecture notes on the 8th edition of J. Hull, "Options, Futures and Other Derivatives".

≡ EVALUATION METHODS

100 % : Final exam - Tim SAMBROOK

≡ SESSIONS

1 Forward and futures

LECTURE : 03h00

- Concepts
- Strategies
 - Hedging
 - Speculation
 - Arbitrage

2 Commodity futures

LECTURE : 03h00

- Performance, asset under management and investment practice
- The case for long-only commodity investing
- The case for long-short commodity investing

3 Options markets and strategies

LECTURE : 03h00

- Options markets
- Strategies involving one or more options and a stock
- Strategies involving two or more options of the same class: spreads
- Strategies involving options from different classes

4 Options markets and strategies II

LECTURE : 03h00

- Options markets
- Strategies involving one or more options and a stock
- Strategies involving two or more options of the same class: spreads
- Strategies involving options from different classes

5 Arbitrage and binomial pricing

LECTURE : 03h00

- Introduction to option pricing
- Arbitrage pricing
- Binomial pricing
 - A one-step binomial model
 - Increasing the number of steps

6 Mathematical foundations: Stochastic calculus and Monte-Carlo simulations

LECTURE : 03h00

- Wiener process
- Geometric Brownian motion
- Itô's lemma

7 Black-Scholes-Merton model

LECTURE : 03h00

- Black-Scholes-Merton differential equation
- Black-Scholes pricing formulas
- Risk-neutral valuation

8**Hedging and the Greeks**LECTURE : 03h00

- Naked position, covered position, stop-loss strategy
 - The “Greeks”
 - Portfolio insurance
-

9**Swaps and swaptions**LECTURE : 03h00

- Interest rate swaps
 - Currency swaps
 - Non plain vanilla swaps
 - Swaptions
-

10**Revisions**LECTURE : 03h00

Exercises

Number of ECTS credits : 4
Course language : Anglais
Course leader : BEDENDO Mascia
Speakers : BEDENDO Mascia

≡ COURSE DESCRIPTION

The first part of the course covers the market pricing of credit risk implied from bond yields, CDS spreads, and equity prices. The second part of the course deals with the measurement of market risk (Value at Risk, Expected Shortfall) in portfolios of financial assets.

≡ COURSE OBJECTIVES

The course aims at providing a technical and hands-on approach to credit risk and market risk measurement. At the end of the course students should be able to extract information on the credit quality of an entity from market prices of bonds and credit derivatives. In addition, they should be able to estimate the market risk of a portfolio of assets in terms of Value at Risk and Expected Shortfall.

≡ LEARNING GOALS

LG01 - Analysis : Make use of critical analysis/critical thinking skills
LG05 - Action : Evaluate, prevent and manage short, medium and long-term risks
LG14 - Cooperation : Work effectively in a team

≡ TACKLED CONCEPTS

Financial concepts:
Credit risk and credit derivatives. Market pricing of credit risk. Structural models of credit risk. Market risk measures: Value at Risk and Expected Shortfall.
Technical tools:
Multivariate distributions. Principal component analysis. Historical (non-parametric) simulation. Monte Carlo simulation. Bootstrapping techniques and calibration. Poisson default processes.

≡ LEARNING METHODS

Standard Lectures. Exercises. Computer-based applications.

≡ ASSIGNMENTS

One mid-term group empirical assignment (groups of 5 students)
The mid-term assignment accounts for 30% of the final grade. The final exam (exercises and open questions) accounts for the remaining 70% of the grade.

≡ BIBLIOGRAPHY

Textbook: "Options, Futures, and Other Derivatives", John C. Hull, Pearson Education
"Risk Management and Financial Institutions", John C. Hull, Wiley.
Primary reading material: Instructor's slides, exercise sets, programming examples.

≡ EVALUATION METHODS

30 % : Continuous assessment (Team Project) - Mascia BEDENDO
70 % : Final exam - Mascia BEDENDO

≡ SESSIONS

1

Credit risk components
LECTURE : 03h00

Credit risk. Credit risk components: Country risk, sector risk, firm-specific risk. Recovery rates. Credit risk and the business cycle.

2 **Market measures of credit risk**

LECTURE : 03h00

Market measures of credit risk: Bond yields and credit default swap spreads. An introduction to credit derivatives.

3 **Credit default swaps**

LECTURE : 03h00

Credit default swaps pricing: The asset swap approach and the full valuation approach.

4 **Reduced-form models of credit risk**

LECTURE : 03h00

Default-intensity or reduced-form models. Bootstrapping default probabilities from CDS spreads and bond prices. Liquidity risk premium.

5 **Structural models of credit risk**

LECTURE : 03h00

How to imply credit risk measures from the equity market. The Merton's approach.

6 **Market risk**

LECTURE : 03h00

Market risk. Dimension reduction techniques. Principal component analysis and applications.

7 **Value-at-Risk: parametric**

LECTURE : 03h00

Value at risk. Parametric approach: volatility and correlation estimation.

8 **Value-at-Risk: non-parametric**

LECTURE : 03h00

Value at risk. Simulation approaches: Historical simulation and Monte Carlo simulation.

9 **Expected Shortfall**

LECTURE : 03h00

Beyond Value at risk: Expected shortfall. Backtesting and stress-testing of VaR and ES.

10 **Regulation**

LECTURE : 03h00

Market risk and credit risk regulatory developments. Counterparty risk.

Number of ECTS credits : 4

Course language : Anglais

Course leader : GUYOT Alexis

Speakers : MEZERET Thierry

≡ COURSE DESCRIPTION

This course will explore the links between money, financial intermediaries, financial markets and the policies that affect them. In particular, it focuses on the effects of monetary policy on financial markets and through them, on the economy as a whole.

≡ COURSE OBJECTIVES

- Get an understanding of how interest rates, money supply and central bank actions affect the decisions of economic agents, financial markets and prices
- Get an understanding of the goals, functioning and operations of central banks
- Introducing students to the concepts and issues linked with monetary policy and regulation

≡ LEARNING GOALS

LG04 - Action : Make proposals, take initiatives

LG05 - Action : Evaluate, prevent and manage short, medium and long-term risks

LG10 - CSR : Identify and understand stakeholder interests

LG15 - Cooperation : Act with flexibility, adaptability and intellectual curiosity

≡ TACKLED CONCEPTS

- Interest rates, yield curve and Interest rate parity
- Fisher effect
- Law of one price and Purchasing Power Parity
- Bonds and shares
- Theory of Efficient markets
- Central banking
- Monetary policy
- Government Multiplier

≡ LEARNING METHODS

- 30 hours face to face
- Lectures
- In class tutorials and practical exercises
- 45 hours of personal work

≡ ASSIGNMENTS

- 30%: Mid term exam
- 70%: Final exam

≡ BIBLIOGRAPHY

KRUGMAN, P R. -- OBSTFELD, M. International economics : theory & policy. Boston: Pearson, 2009. ISBN 978-0-321-55398-0.

EITEMAN, D K. -- STONEHILL, A I. -- MOFFETT, M H. Multinational business finance. Boston: Prentice Hall, 2010. ISBN 978-0-13-609668-9.

- Mishkin F., The Economics of Money, Banking and Financial Markets, 10th Edition, 2012, Pearson.

≡ EVALUATION METHODS

30 % : Continuous assessment - Thierry MEZERET

70 % : Final exam Thierry MEZERET

1

Financial system and financial markets - part 1

BRIEFING : 03h00

Financial system and financial markets

Creditors, borrowers, financial flows, financial markets, financial intermediaries, economic efficiency.

Banking regulations

2

Financial system and financial markets - part 2

BRIEFING : 03h00

3

International Parity conditions - part 1

BRIEFING : 03h00

International Parity conditions

Law of one price / Purchasing Power Parity

Fisher effects

Interest rate Parity

4

International Parity conditions - part 2

BRIEFING : 03h00

5

Behaviour of interest rates

BRIEFING : 03h00

Behaviour of interest rates

Demand and supply of financial instruments; factors affecting the demand and supply; market equilibrium and changes in the equilibrium.

Risk and term structure of interest rates

Risks of financial operations; risk and demand; maturity of financial instruments; maturity and demand /supply; comparative equilibrium analysis.

6

Stock market, information and market efficiency

BRIEFING : 03h00

Stock market, information and market efficiency

Expectations and market prices; rational expectations; informational efficiency of financial markets Valuation of shares

7**Role, functions and objectives of Central Banks - part 1**BRIEFING : 03h00

Role, functions and objectives of Central Banks

Monetary system; supervision and regulation; bank for banks; bank for government.

8**Role, functions and objectives of Central Banks - part 2**BRIEFING : 03h00

9**Monetary policy - part 1**BRIEFING : 03h00

Targets and tools of monetary policy

Required reserves, open market operations and discount policy; goals of economic and monetary policy; intermediate and long-term targets; targeting monetary aggregates versus targeting interest rates.

Transmission mechanisms of monetary policy

Money market; interest rate channel for money market influence; multi-asset prices channel; credit channel.

Financial markets, monetary policy and the aggregate economic activity

Aggregate economic equilibrium; money and aggregate output; money and inflation; expectations and inflation.

Monetary policy and Currency wars**10****Monetary policy - part 2**BRIEFING : 03h00
