Financial Economics Track

Master of Science in Financial Markets
2019-2020

Make an impact
# MSc in Financial Markets

## Semester 1 - Concentration in Asset Management

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>CTS</th>
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<th>QTEM</th>
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<tr>
<td>NICE ED MSc F MKT 1 OPT 3667</td>
<td>Research Seminar (for Student Research Team ONLY)</td>
<td>15</td>
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<tr>
<td>NICE ED MSc F MKT 1 CC 5661</td>
<td>Socially Responsible Investing</td>
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<tr>
<td>NICE ED MSc F MKT 1 CC 5403</td>
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## Semester 2 - Concentration in Trading

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## Electives

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## Overall Credits

- INCOMING: 150 CTS
- QTEM: 600 CTS

* replaced by Research Seminar for Student Research Team
### SEMESTER 1

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<tr>
<td>20_M2_NI_FE_S1_SEM_4374</td>
<td>TAKE OWNERSHIP OF YOUR ENVIRONMENT (for IC &amp; Incoming students)</td>
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<td>20_M2_NI_FE_S1_SEM_4375</td>
<td>PREPARING YOURSELF FOR LEARNING WITH CASES (For IC &amp; incoming students)</td>
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<tr>
<td>20_M2_NI_FE_S1_SEM_2742</td>
<td>INTERCULTURAL SEMINAR</td>
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<td>20_M2_NI_FMK_S1_REM_6222</td>
<td>REMEDIAL IN MATHEMATICS: FOUNDATION OF MATHEMATICS FOR FINANCE</td>
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<td>20_M2_NI_FMK_S1_SEM_I&amp;IT_1059</td>
<td>PROGRAMMING FOR FINANCE WITH VBA AND R **</td>
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<td>20_M2_NI_FMK_S1_HUM_744</td>
<td>PYTHON FOR FINANCE *</td>
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<td>20_M2_NI_FMK_S1_CCO_FIN_799</td>
<td>ADVANCED FINANCIAL THEORY **</td>
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<td>20_M2_NI_FMK_S1_CCO_FIN_797</td>
<td>EMPIRICAL METHODS IN FINANCE</td>
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<td>20_M2_NI_FMK_S1_CCO_FIN_2764</td>
<td>ADVANCED FIXED INCOME SECURITIES **</td>
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<td>ADVANCED DERIVATIVES **</td>
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<td>COMPLIANCE **</td>
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<td>20_M2_NI_FMK_S1_CCO_FIN_5662</td>
<td>MARKET MICROSTRUCTURE - IMPLEMENTING PORTFOLIO DECISION</td>
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<td>20_M2_NI_FMK_S1_CCO_5859</td>
<td>BLOOMBERG MARKET CONCEPTS (BMC)</td>
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<td>20_M2_NI_FMK_S1_CCO_HUM_INCOMNODD_173</td>
<td>VALUES, COOPERATION AND TRUST (for Incoming students)</td>
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<td>20_M2_NI_FMK_S1_LVX_LV2_FLE_INCOMINGNODD_1351</td>
<td>FRENCH COURSE (For IC &amp; Incoming students)</td>
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### SEMESTER 2

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<tr>
<td>20_M2_NI_FMK_S2_CCO_5661</td>
<td>SOCIALLY RESPONSIBLE INVESTING * / Core Course</td>
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<td>20_M2_NI_FMK_S2_CCO_5403</td>
<td>DATA &amp; MACHINE LEARNING** / Fintech Certificate</td>
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<td>20_M2_NI_FMK_S2_CCO_5407</td>
<td>DATA VISUALIZATION / Fintech Certificate</td>
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<td>R FOR FINANCE / Fintech Certificate</td>
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<td>20_M2_NI_FMK_S2_SEM_1104</td>
<td>ETHICS AND FINANCE ** / Core Course</td>
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<td>20_M2_NI_FMK_S2_MAM_5658</td>
<td>REGULATION AND INNOVATION IN ASSET MANAGEMENT * / Major in Asset Management</td>
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<td>20_M2_NI_FMK_S2_MAM_5660</td>
<td>EFFICIENT EQUITY INVESTING: ADVANCED METHODS FOR ACTIVE AND PASSIVE MONEY MANAGEMENT * / Major in Asset Management</td>
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<td>20_M2_NI_FMK_S2_MAM_1161</td>
<td>INVESTMENT SOLUTIONS / Major in Asset Management</td>
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<td>20_M2_NI_FMK_S2_MAM_5665</td>
<td>PRIVATE EQUITY / Major in Asset Management</td>
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<td>20_M2_NI_FMK_S2_MAM_3673</td>
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<td>20_M2_NI_FMK_S2_MAM_1063</td>
<td>ALTERNATIVE INVESTMENTS / Major in Asset Management</td>
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<td>20_M2_NI_FMK_S2_MTM_5659</td>
<td>BANKING AND FINANCIAL MARKETS REGULATION / Major in Trading</td>
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<td>20_M2_NI_FMK_S2_MTM_2765</td>
<td>FX DERIVATIVES MARKETS AND APPLICATIONS TO TREASURY MANAGEMENT / Major in Trading</td>
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<td>20_M2_NI_FMK_S2_MTM_5667</td>
<td>STRUCTURED PRODUCTS / Major in Trading</td>
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<td>20_M2_NI_FMK_S2_MTM_842</td>
<td>MARKET RISK MEASUREMENT ** / Major in Trading</td>
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<td>20_M2_NI_FMK_S2_MTM_886</td>
<td>TRADING IN PRACTICE ** / Major in Trading</td>
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<td>20_M2_NI_FMK_S2_MTM_6309</td>
<td>ALGORITHMIC TRADING ** / Major in Trading</td>
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### ELECTIVES

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<td>20_M2_NI_FMK_S2_ELE_FIN_3943</td>
<td>COMMODITIES *</td>
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<td>20_M2_NI_FMK_S2_ELE_FIN_5668</td>
<td>BITCOIN, BLOCKCHAIN, AND CRYPTO-ASSETS</td>
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<td>20_M2_NI_FMK_S2_ELE_FIN_4507</td>
<td>MONETARY POLICY AND CENTRAL BANKS’ WATCHING</td>
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<td>20_M2_NI_FMK_S2_FMK_ELE_4899</td>
<td>MACROECONOMY, INVESTMENTS AND FINANCIAL MARKETS **</td>
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<td>20_M2_NI_FMK_S2_FMK_ELE_6310</td>
<td>COURSERA ONLINE &amp; MENTORING **</td>
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<td>20_M2_NI_FMK_S2_FMK_ELE_5369</td>
<td>FACTOR INVESTING IN EQUITY AND BOND MARKETS</td>
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<td>20_M2_NI_FMK_S2_FMK_ELE_5745</td>
<td>ADAPTIVE RISK MANAGEMENT **</td>
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*Syllabus to be updated

Please note that a presentation of the Master project & of the research seminar will take place on September 2019.
SEMESTER 1
20_M2_NL_FE_S1_SEM_4374: TAKE OWNERSHIP OF YOUR ENVIRONMENT (for IC & Incoming students)

SEMESTER: 1  
NUMBER OF HOURS: 2  
INTERNATIONAL PROGRAMME: 0 ECTS  
COURSE COORDINATOR + MAIL: jeremie.laniez@edhec.edu

COURSE OBJECTIVES
This course aims at giving the newcomer students the basic knowledge to use the computers properly on the campus, especially for foreign students.

LEARNING OUTCOMES
After having taken this course, participants will be able to:

- Use the computers of the campus
- Use the library online

More specifically, participants should be able to (skill- and competency-based outcomes)

- Use Windows in French and the French keyboard
- Use MyEdhec and especially the learning platform
- Register to the online Library of the campus
- Use some important features in the Microsoft Office Suite

PREREQUISITES
None.

COURSE CONTENT

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<th>SESSION</th>
<th>TOPIC</th>
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<tr>
<td>1</td>
<td>French keyboard and Windows file structure. Review of the services on the learning platform, how to send assignments, settings. Basics of the Microsoft Office Suite, online/offline versions, language settings. Library: Presentation &amp; registration</td>
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TEACHING & LEARNING METHODS
Lecture and practical cases in a computer room.

ASSESSMENT METHODS
None.

READING
None
COURSE OBJECTIVES
This course enables students to understand the relevance of the case study methodology both in class work and future recruitment scenarios. It teaches the theory and enables students to practice one or more case studies.

The objective is:
- Provide an overview of the theory of case studies
- Prepare students so that they perform to their highest ability during case study projects
- Explain the use of case studies in future recruitment

LEARNING OUTCOMES
After having taken this course participants should be able to:
- Understand how to read the case study efficiently
- Employ critical reasoning to analyse case studies
- Understand how to write up case study reports
- Understand how to impress future recruiters by being able to perform well in case study exercises

PREREQUISITES
Students should recognize the importance of this course in preparing them for case study use in the classroom. They should pre-watch the HBR video explaining the theory of case studies before the curse.

COURSE CONTENT

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<tr>
<th>SESSION</th>
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<tr>
<td>1</td>
<td>Introduction to Case Study Methodology and Critical Reasoning</td>
</tr>
<tr>
<td>2</td>
<td>Individual Case Presentation Example</td>
</tr>
<tr>
<td>3</td>
<td>Group Case Presentation Example</td>
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<td>4</td>
<td>Group Case Class Example</td>
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TEACHING & LEARNING METHODS
Teaching Method- Action Learning (theory, practice, then feedback)

ASSESSMENT METHODS
None

RECOMMENDED READING
HBR class notes on Blackboard
20_M2_NL_FE_S1_SEM_2742: INTERCULTURAL SEMINAR

SEMESTER: 1
NUMBER OF HOURS: 9
INTERNATIONAL PROGRAMME: 0 ECTS
COURSE COORDINATOR + MAIL: Anne WITTE

COURSE OBJECTIVES
This seminar aims at building cultural awareness and developing the cognitive and behavioural abilities to communicate effectively across cultures particularly for students pursuing careers in finance. Four learning objectives are pursued:
- Become acquainted with key concepts used in intercultural communication
- Gain practical experience with diversity by working in international teams effectively and productively
- Question stereotypes through heightened cultural awareness
- Practice coping strategies when confronted with unfamiliar cultural environments

LEARNING OUTCOMES
After having taken this course, participants will be able to/are expected to know or understand (knowledge-based outcomes):
- LO1 The main theories of culture and diversity
- LO2 How these theories apply to the self and to others
More specifically, participants should be able to (skill- and competency-based outcomes):
- LO3 Work with persons of different cultural backgrounds
- LO4 Anticipate the specific adaptations that may be required in diverse environments
- LO5 Refrain from harsh judgement and stereotyping

PREREQUISITES
Three years of general business courses or Bac + 3 Business Administration.
Proficiency in English
A background communication course can be helpful

COURSE CONTENT
Session 1 - Language, Stereotypes and diversity /The Meaning Market Simulation
http://dx.doi.org/10.9707/2307-0919.1021

Session 2 - Country Analysis: The Royal Dutch Gazelle Bicycle Case

Session 3 - Analyzing Cultures vs Individuals: Diversity

TEACHING & LEARNING METHODS
Seminar style interaction, games and self-discovery exercises

ASSESSMENT METHODS
Final Quiz 100% (30 minutes). This course issues a PASS/FAIL on the transcript. Absences to the exam can be compensated by presence for the entire course and active participation. Absences to the course can be compensated by a PASS grade on the exam (more than 10).

READING
See course Content.
20_M2_NI_FM_K_S1_REM_6222: REMEDIAL IN MATHEMATICS: FOUNDATION OF MATHEMATICS FOR FINANCE **

SEMESTER: 1
NUMBER OF HOURS: 15
INTERNATIONAL PROGRAMME: 0 ECTS
COURSE COORDINATOR + MAIL: Riccardo REBONATO

NEW COURSE - Syllabus to be completed
20_M2_NI_FMK_S1_SEM_I&T_1059: PROGRAMMING FOR FINANCE WITH VBA AND R

**

SEMESTER: 1
NUMBER OF HOURS: 15
INTERNATIONAL PROGRAMME: 1.5 ECTS
COURSE COORDINATOR + MAIL: Laurent DEVILLE

COURSE OBJECTIVES
The course is designed to teach students how to leverage the advanced facilities of Excel that are commonly used in corporate finance / capital markets. The course then shows how to use Visual Basic for Applications (VBA) to create very robust and powerful spreadsheets. The course presents and implements some of the main concepts in this area.

LEARNING OUTCOMES
After having taken this course, participants will be able to/are expected to know or understand (knowledge-based outcomes)
- Use Excel efficiently, productively and safely
- Solve and implement various financial problems in Excel and VBA
More specifically, participants should be able to (skill- and competency-based outcomes)
- Develop their own classes in VBA
- Build a personal set of useful functions for use in specific projects

PREREQUISITES
Familiarity with the Excel VBA environment.

COURSE CONTENT
To be completed - RESTRUCTURED

TEACHING & LEARNING METHODS
It is a hands-on class that uses many practical examples which will be programmed and discussed in class. Longer applications and case studies will be started in class and then have to be completed at home.

ASSESSMENT METHODS

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20_M2_NI_FMK_S1_HUM_744: PYTHON FOR FINANCE *

SEMESTER: 1
NUMBER OF HOURS: 15
INTERNATIONAL PROGRAMME: 1.5 ECTS
COURSE COORDINATOR + MAIL: TBD

COURSE OBJECTIVES
Python is a programming language that is widely used in financial markets to solve a broad range of problems, as its high-level nature and enormous set of libraries has made it extremely powerful. This course will enable the student to become familiar with python and how it can be used to do complex data analysis, derivative valuation, risk management and trading strategy analysis.

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

- Understand how to write intermediate level code in python
- Enhance speed and productivity using Numpy, Pandas and Matplotlib
- Be able to maximise the computational performance of Python using C
- Object oriented programming in Python
- Interface python with Excel.

COURSE CONTENT
The topics covered in the course will include the following

- Installation of Python and its libraries
- Use of the IPython / Jupyter notebook and Spyder
- Basic Python, arrays, programme logic, data types and functions
- Using Numpy to write fast valuation models
- Extracting and analysing financial market time series data using Pandas
- Pandas as a tool for advanced data analysis
- File I/O and Integrating python with Excel
- Databases and SQL from Python
- Using Matplotlib for data visualisation
- High performance programming in Python including optimisation
- Advanced mathematics in python
- Case Study: Valuing American options in python using Monte Carlo
- Case Study: Calculation of Value at Risk and CVA in python
- Case Study: Portfolio optimization in python
- Case Study: Trading strategy analysis in python

ASSESSMENT METHODS
The evaluation will be based on an exam (70%) and a group assignment (30%)
20_M2_NI_FMK_S1_CCO_FIN_799: ADVANCED FINANCIAL THEORY **
SEMESTER: 1
NUMBER OF HOURS: 30
INTERNATIONAL PROGRAMME: 3.5 ECTS
COURSE COORDINATOR + MAIL: Laurent CALVET

Syllabus to be completed
20_M2_NI_FMK_S1_CCO_FIN_797: EMPIRICAL METHODS IN FINANCE

SEMESTER: 1
NUMBER OF HOURS: 30
INTERNATIONAL PROGRAMME: 3.5 ECTS
COURSE COORDINATOR + MAIL: Ian Hunt, ihunt@bunhill.co.uk

COURSE OBJECTIVES
This is an econometrics course tailored for students pursuing careers in, or further study of, financial markets. The course content is modern and rigorous. The teaching approach is pragmatic – we will aim for depth in key topics rather than breadth across all of econometrics.

LEARNING OUTCOMES
1. Accurately estimate models based on econometric and statistical literature.
2. Assess empirical models properly with modern methods, with a particular focus on prediction.
3. Compare popular empirical methods with alternative approaches, criticise the “power” of conventional models, and explore the usefulness of models via simulations.

PREREQUISITES
Undergraduate statistical modelling, probability analysis and calculus is required; including knowledge of linear regression, hypothesis testing and optimisation. In addition, a working knowledge of linear (or “matrix”) algebra is required. In particular, this course builds on your prior courses in econometrics (revision of your previous courses is required before we start).

COURSE CONTENT
Theoretical Grounding
2. Hypothesis testing, p-values and the problems of multiplicity and over-fitting.
3. Sampling variance (assumption based plug-ins, delta/sandwich methods and bootstrapping).

Mathematical Grounding
1. Linear algebra essentials.
2. Derivations of bias and variance in terms of both parameter estimates and predictions.

Advanced Model Assessment
1. Cross validation, out-of-sample testing, information criteria, expected prediction error, Efron’s optimism, false discovery rates, systems-of-regressions, bootstrapping and scenario analysis.

Applications
1. Volatility, asset pricing, prediction and other topics as time and student demand permits.

TEACHING & LEARNING METHODS
There are 18 hours of lectures and 12 hours of “tutorials”. The tutorials have smaller student group sizes than the lectures. The aim of the tutorials is to encourage more interaction: both among the students, and between students and the lecturer.

ASSESSMENT METHODS
There is an assignment (15%), a tutorial participation assessment (15%) and an exam (70%). The assignment can be completed individually or in small groups. The tutorial participation grade will be based on the quality of your active participation during tutorials. The exam questions can be about any of the material discussed in lectures or tutorials, though no technical computer coding questions will be asked.

RECOMMENDED READING
Detailed class notes will be provided for the course. A selection of journal articles will also be set as reading for the tutorials and assignment. These will be introduced during lectures.
LEARNING OUTCOMES
The objective of the course is to deepen the understanding of how fixed-income markets work gained in introductory courses. The main focus is on the Government Bond Markets (nominal and inflation-protected), with a secondary emphasis on the LIBOR markets. The course aims to blend a solid understanding of fixed-income principles with the reality of market features and products such as bond futures, the repo market, bond indices, the role of liquidity, embedded options, etc.

LEARNING OUTCOMES
After having taken this course participants will be able to:
- decompose a market risk curve in its components of expectation, convexity and risk premia;
- identify the factors (macrofinancial – such as inflation, real rates, etc – and yield-curve based – such as Principal Components) that explain changes in the shape of the yield curve;
- assess the relative value of different bonds (fundamentals of cheap/dear analysis) and various classic trading strategies (“carry” trades, roll-down, steepeners, barbells, etc);
- hedge a fixed-income portfolio;
- understand the basics of a simple but realistic affine dynamic Gaussian model (such as the Diebold-Rudebush);
- gather the conceptual tools necessary to be able to read the modern fixed-income literature.

PREREQUISITES
The mathematical requirements will be kept to what is strictly necessary, but the student must
- have a solid understanding of basic calculus (partial derivatives, integrals, matrix algebra, etc);
- have taken an introductory course on Fixed Income;
- be familiar with MS Excel and with a programming language such as MatLab or Visual Basic; C++ not needed.
- be willing and happy to work with real data.

COURSE CONTENT
- **Lecture 1: Revisiting fundamental concepts.** The mechanics of coupon bonds, zero-coupon bonds, and indexed-linked bonds. Clean and dirty prices. Forward rates, forward yields, forward par rates; yields to maturity, par-coupon rates, discount factors, duration, convexity. Decomposition of yields into its expectations, convexity and risk premium components.
- **Lecture 2: The risks of a bond.** The macrofinancial variables that affect the value of bonds: inflation risk, real-rate risk, liquidity risk. Synthetic description of yield curve changes via Principal Components. First ‘informal’ introduction of a mean-reverting model (such as Vasicek’s). Its strengths and shortcomings.
- **Lecture 3: Building an exact and a smooth par yield curve.** Exact fitting versus best-fit. How to construct a par-coupon curve – Nelson Siegal and other methods. Relative value analysis. Different trading strategies: carry trades, roll-down, convexity trading, barbells, etc. The historical profitability for these trades, and economic reasons.
- **Lecture 4: Case study.** After accessing publicly available data from the Fed, the students will engage in the building of the discount curve, the evaluation of cheap/dear bonds, the assessment of the Sharpe ratios of various simple trading strategies.
- **Lecture 5: No Arbitrage: A Dynamic Affine No-Arbitrage modelling Beyond Vasicek.** Simple derivation of the conditions of no-arbitrage for bonds. Simple introduction to the stochastic discount factor. Discussion of, and theoretical results from, a non-trivial mean-reverting affine model. Analysis of the properties of the model: mean reversion, volatility, expectations, no-arbitrage, etc.
- **Lecture 6: Hedging a fixed-income portfolio.** Model-based and model-independent hedging. Hedging a complex portfolio: KRDs, risk-factor (Principal Components) hedging, “bumping”, recalibration, etc. “Reverse stress testing” of a linear fixed income portfolio.
Lecture 7: Market features and products. Liquidity, market segmentation, bond futures (conversion factor, fundamentals of delivery option, timing option, quality option), repo market. Active and passive management of fixed-income portfolios. Bond indices: construction, tracking error, introduction to “smart beta”.


Lecture 10: Case study 2: Analysis of a market event: the 2013 ‘Taper tantrum’. After downloading data from the Fed, the students will analyze the changes in the real and nominal yield curve, explore which hedges would have worked well ex-ante, and attempt to decompose the observed market changes in expectations on the real rate and inflation, liquidity, risk premia, etc.

TEACHING & LEARNING METHODS
The course will be taught through lectures, but a lively dialogue between the students and the lecturer is strongly encouraged.

The lectures will strive to create links between a solid theoretical underpinning, the applications of the theory and market instruments. The mathematical requirements will be kept to a minimum, but some simple proofs will be presented (and required!).

The students will be assigned two major case studies (probably in Lecture 4 and Lecture 10) to work on outside the classroom, and the results will be analyzed and discussed in detail in two of the lectures. However, several minor case studies will be discussed in detail during the course.

If at all possible, the students should have their laptops in class, loaded with the programming language they are going to use (e.g., MatLab, Visual Basic for Excel, etc).

ASSESSMENT METHODS
The final grade will depend on a final exam (70%) and on the performance during the case studies and class participation (30%).

The student is expected to show that he/she is capable of analysing real-life fixed-income situations, such as how to hedge a portfolio, how to “explain” changes in value of a portfolio, how to assess the relative attractiveness of different bonds. A calculator will be allowed for the final exam.
COURSE OBJECTIVES
The aim of this course is to familiarize the student with the pricing and risk management of derivative securities, starting with vanilla call and put options and going as far as products such as swaptions, variance swaps and credit derivatives.

LEARNING OUTCOMES
After having taken this course participants will be able to:
- Apply the idea of risk-neutral pricing in a real world situation
- Perform basic calculations using stochastic calculus and derive Black Scholes equation
- Be familiar with the main types of structured products across the equity, credit and fixed income markets.
- Understand the valuation methods used for different products, especially Monte Carlo
- Understand the hedging issues and how this may impact the risk and the pricing

PREREQUISITES
Some familiarity with Excel and VBA would be helpful but is not essential to start the course. A knowledge of fixed income securities and basic derivatives is required.

COURSE CONTENT
1. Introduction to structured products, the market, the buyers and the importance of the legal structure of the issuing entity in terms of issuer risk.
2. We recap the Black-Scholes framework and examine hedging simulations to understand how it works
3. The Monte Carlo pricing method is introduced as the main structured product pricing tool. We show how to implement a simple pricing model in Excel/VBA. We discuss the importance of implied volatility and the volatility smile/skew.
4. Equity options including Asian, Chooser, Lookback, Digital, Barriers and Ladder options
5. Advanced equity options such as basket products and variance swaps.
6. Fixed income products including swaps, FRAs, caps and floors and swaptions.
7. Credit derivative products, especially the credit default swap and the CDS indices.
8. We focus on Counterparty risk for derivatives. PFE, Collateral, ISDA CSAs and the CVA.
9. We cover the effect of reform on the derivatives markets with the introduction of CPPs.

TEACHING & LEARNING METHODS
Lectures and examined coursework.

ASSESSMENT METHODS
The course will be assessed by a group coursework (30%) and a 3-hour exam (70%)

RECOMMENDED READING
These are all recommended
- Options, Futures and other Derivatives, John Hull
- Structured Equity Derivatives, Harry Kat, Wiley Finance
- Exotic Options Trading by Frans de Weert, Wiley Finance
- Structured Products Magazine - online
- Guns, Traders and Money by Satyajit Das
- BNP Paribas Volatility Investing Handbook
- Modelling Single-name and Multi-name credit derivatives by D O'Kane
- The Big Short by Michael Lewis
20_M2_NI_FMKG_S1_CCO_6314: COMPLIANCE **

SEMESTER: 1
NUMBER OF HOURS: 15
INTERNATIONAL PROGRAMME: 1.5 ECTS
COURSE COORDINATOR + MAIL: TBD

NEW COURSE - Syllabus to be completed
20_M2_NL_FMK_S1_CCO_5662: MARKET MICROSTRUCTURE - IMPLEMENTING PORTFOLIO DECISION

SEMESTER: 1
NUMBER OF HOURS: 15
INTERNATIONAL PROGRAMME: 1.5 ECTS
COURSE COORDINATOR + MAIL: Fabrice RIVA, Université Paris-Dauphine, fabrice.riva@dauphine.psl.eu

COURSE OBJECTIVES
Trading securities in markets involves costs. Besides explicit costs arising from broker commissions, exchange fees and taxes, traders also incur implicit transaction costs in the form of opportunity, delay, spread costs and market impact. Implicit costs represent the bulk of overall transaction costs. One issue however is that these costs are not observable and thus must be estimated. In this course students will learn where transactions costs come from, what are their determinants, how to estimate them and how they must be accounted for in the construction of efficient portfolios and the determination of optimal trading strategies.

LEARNING OUTCOMES
After taking this course, participants will be able to/are expected to know or understand:
- The relationship between market structures and transaction costs
- The determinants of transaction costs
- How to estimate transaction costs
- Why trading transaction costs vary over time and across assets
- How to incorporate transaction costs in portfolio construction and in the implementation of optimal trading strategies

PREREQUISITES
Portfolio theory

COURSE CONTENT

<table>
<thead>
<tr>
<th>SESSION N°</th>
<th>DURATION</th>
<th>TOPIC</th>
<th>TYPE OF COURSE</th>
<th>TYPE OF GROUP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3 hours</td>
<td>Basic market structures, order types, liquidity and transaction costs</td>
<td>CM</td>
<td>P</td>
</tr>
<tr>
<td>2</td>
<td>3 hours</td>
<td>Transaction cost determinants</td>
<td>CM</td>
<td>P</td>
</tr>
<tr>
<td>3</td>
<td>3 hours</td>
<td>Estimating transaction costs</td>
<td>CM</td>
<td>P</td>
</tr>
<tr>
<td>4</td>
<td>3 hours</td>
<td>Managing transaction costs</td>
<td>CM</td>
<td>P</td>
</tr>
<tr>
<td>5</td>
<td>3 hours per P/2</td>
<td>In-class empirical session</td>
<td>Tutorial</td>
<td>P/2</td>
</tr>
</tbody>
</table>

No IT room & No Software

TEACHING & LEARNING METHODS
This course will alternate lectures, exercises and an in-class empirical session.

ASSESSMENT METHODS

<table>
<thead>
<tr>
<th>ASSESSMENT</th>
<th>NATURE</th>
<th>% OF THE TOTAL MARK</th>
<th>DETAILS</th>
<th>DURATION</th>
<th>LEARNING OUTCOME EVALUATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final exam</td>
<td>Written exam, close book</td>
<td>75%</td>
<td>1h30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homework</td>
<td>TBA</td>
<td>25%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

READING
No textbook is required but parts of the material build on the following books:
20_M2_NI_FE_S1_CCO_5859: BLOOMBERG MARKET CONCEPTS (BMC)

SEMESTER: 1
NUMBER OF HOURS: -
INTERNATIONAL PROGRAMME: 2 ECTS
COURSE COORDINATOR + MAIL: Bloomberg Market Concepts is a self-guided digital learning course

COURSE OBJECTIVES
Bloomberg Market Concepts (BMC) is a 10-hour, self-paced e-learning course that provides an interactive introduction to the financial markets. BMC consists of 5 modules—Economic Indicators, Currencies, Fixed Income, Equities, and Getting Started on the Terminal—woven together from Bloomberg data, news, analytics and television. Using the BMC digital courseware as a course companion frees up class time for more advanced topics.

LEARNING OUTCOMES
Learn the language of finance
- Supplement your university learnings with practical knowledge of the markets
- Familiarize yourself with over 70 Bloomberg Terminal functions

Discover the inner workings of the markets
- Learn what moves markets
- Familiarize yourself with key benchmarks that professionals monitor

Get Bloomberg on your resume
- Receive a certificate of completion after completing BMC
- Demonstrate your comfort with the gold standard data platform

COURSE CONTENT
THE MODULES
- Economic Indicators,
- Currencies,
- Fixed Income,
- Equities,
- and Getting Started on the Terminal

ASSESSMENT METHODS
All learners receive a certificate of completion after finishing all modules which can be used as a micro-credential on their résumés.

Students enrolled into the Major in Asset Management: The course is considered as passed or failed, but no numerical grade is recorded for the course. Credits may be awarded for the course, but it does not count towards the student’s overall average.

Students enrolled into the Major in Trading: The “Bloomberg Market Concepts” test will count for 10% of the overall grade of the course 886-Trading in Practice.
COURSE OBJECTIVES
The course proposes a comparative analysis of world cultures from the perspective of values and values change drawing essentially from the World Values Surveys. By investigating how different value systems generate economic behaviour and sustain political frameworks, it is possible to evaluate critically those that respond well or less well to competition, capitalism and social justice.

LEARNING OUTCOMES
After having taken this course, participants will be able to/are expected to know or understand (knowledge-based outcomes)
- Lo1 Values theory and the implications of these theories on businesses and society
- L02 The moral, historical and cultural factors impacting economies over history
More specifically, participants should be able to (skill- and competency-based outcomes)
- L03 Evaluate the impact of public and private institutions (education, courts, religion) on economic outcomes and the ability to generate human, cultural and social capital
- L04 Take a critical perspective on how cultural, social and ethical priorities of societies have enduring impact on economic behavior and the organization of trade

PREREQUISITES
Three years of general business courses or Bac + 3 Business Administration.

COURSE CONTENT

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Definitions of Key Concepts: Values, Cooperation &amp; Trust</td>
</tr>
<tr>
<td>2</td>
<td>Measuring &amp; Testing in the Social Sciences – the political survey + reading discussion</td>
</tr>
<tr>
<td>3</td>
<td>Comparative moralities+ reading discussion</td>
</tr>
<tr>
<td>4</td>
<td>Trust (at different aggregates of the economy) + reading discussion</td>
</tr>
<tr>
<td>5</td>
<td>Culture &amp; values+ reading discussion</td>
</tr>
<tr>
<td>6</td>
<td>Social Capital+ reading discussion</td>
</tr>
<tr>
<td>7</td>
<td>Political Systems and Values+ reading discussion</td>
</tr>
<tr>
<td>8</td>
<td>Economic Systems and Values+ reading discussion</td>
</tr>
<tr>
<td>9</td>
<td>Final Presentations</td>
</tr>
<tr>
<td>10</td>
<td>Final Presentations</td>
</tr>
</tbody>
</table>

TEACHING & LEARNING METHODS
Lecture, Reading, Cases, Discussion

ASSESSMENT METHODS

<table>
<thead>
<tr>
<th>ASSESSMENT</th>
<th>% OF THE TOTAL MARK</th>
<th>DURATION</th>
<th>LEARNING OUTCOME EVALUATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation &amp; Speed Talk</td>
<td>40</td>
<td>Semester</td>
<td>1,2</td>
</tr>
<tr>
<td>Final Oral</td>
<td>40</td>
<td>20 minutes</td>
<td>3,4</td>
</tr>
<tr>
<td>Final Exam</td>
<td>20</td>
<td>60 minutes</td>
<td>3,4</td>
</tr>
</tbody>
</table>

COMPULSORY READING


20_M2_NI_FE_S1_LVX_LV2_FLE_INCOMINGNODD_1351: FRENCH COURSE (For IC & Incoming students)

SEMESTER: 1
NUMBER OF HOURS: 30
INTERNATIONAL PROGRAMME: see page 2
COURSE COORDINATOR + MAIL: Elizabeth DICKSON, elisabeth.dickson@edhec.edu

COURSE OBJECTIVES
Acquérir le niveau “intermédiaire ou de survie “en langue anglaise tel que défini par le CECRL.
Se débrouiller dans les situations simples de la vie quotidienne.

LEARNING OUTCOMES
- Connaître la France, sa culture, ses régions.
- Saluer, remercier, féliciter, prendre congé, s’informer.
- Se présenter, présenter quelqu’un.
- Parler d’activités quotidiennes simples, comme les loisirs.
- Parler de sa famille.
- Demander un prix, l’heure, une direction.
- Comprendre des documents simples et usuels.
- Communiquer dans des situations liées aux voyages.
- Faire ses courses.

PREREQUISITES
Aucun prérequis.

COURSE CONTENT
- Saluer, se présenter, présenter quelqu’un.
- Les chiffres – demander un prix.
- L’emploi du temps : les jours de la semaine, l’heure.
- Décrire sa famille – les professions.
- Les loisirs – les activités culturelles.
- Faire ses courses - les aliments.

TEACHING & LEARNING METHODS
- Pédagogie de la tâche, telle que définie par le CECRL.
- Documents authentiques : extraits d’articles, chansons, documents audiovisuels d’actualité ou de fiction.
- Sites web.
- Documents multimédias disponibles sur la plateforme Blackboard.
- Approche inductive de la grammaire (exemples en situation puis identification et théorisation par l’apprenant).
- Exercices en situation : jeux de rôles plus ou moins dirigés, débats, simulations de réunions.
- Alternance de travail individuel et travail de groupe.

ASSESSMENT METHODS

<table>
<thead>
<tr>
<th>ASSESSMENT TYPE</th>
<th>% OF THE TOTAL MARK</th>
<th>DURATION</th>
<th>LEARNING OUTCOME EVALUATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation</td>
<td>30%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contrôle continu</td>
<td>70%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

READING
- Articles de la presse régionale ou gratuite.
SEMESTER 2
COURSE OBJECTIVES
The following 3 themes aim to provide further insight on ESG thematics in the financial industry:

1) Limiting climate change to below 2°C would require at least $100 trillion in investments by 2050
2) Obesity rates have doubled over the past 30 years, globally 1.4bn people are overweight and 500 million are obese, according to WHO.
3) We are living in the midst of the most remarkable demographic transition in history with life expectancy to reach 77.1Y by 2050E (vs. 48Y in 1950), the world’s population above 60 is expected to grow to 2.1bn by 2050E (vs. 901mn at present). We estimate global longevity risk to represent US$15-25 trillion.

A significant number of companies are at risk regarding these ESG trends. However, some are well placed to benefit from these themes. As investors, the objective is to identify these companies.

At the same time, asset managers are experiencing strong demand from pension funds and other institutional investors to tackle these ESG issues. Today it is essential for players in the financial industry to be Socially Responsible or ESG. Failure to do so could lead to US$ 22.8 trillion in missed business opportunities.

LEARNING OUTCOMES
Upon the completion of this course, participants will be able to/are expected to know or understand (knowledge-based outcomes):

- Know: ESG overview (definition, AuM, role of institutions such as European Commission, geography, type of investment, etc.) and new ESG market trends (alternative investment or impact investing)
- Evaluate: strengths and weakness of each concept/strategy: ethical, engagement, ESG integration, etc.

More specifically, participants should be able to (skill- and competency-based outcomes):

- Analyze and Assess: ESG risks/opportunities for financial industry (banks, asset managers, insurers, retail banking, etc.)
- Create: strategy/investment process/fund with an ESG profile (without technical details)

PREREQUISITES
Financial market operation (primary/secondary market, insurer, asset manager, hedge fund, etc.), Financial metrics for corporate (SALES, EBIT, ROE), Financial products (equity, bond, ETF, etc.)

COURSE CONTENT
5 sessions of 3 Hours.

<table>
<thead>
<tr>
<th>SESSION No.</th>
<th>CONTENT</th>
<th>PREPARATORY WORK</th>
<th>IT ROOMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ESG overview</td>
<td>Financial Market overview (type of players)</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>ESG integration for traditional investments</td>
<td>Financial Market overview (type of players) + financial metrics</td>
<td>Yes</td>
</tr>
<tr>
<td>3</td>
<td>ESG integration for traditional investments</td>
<td>Financial Market overview (type of players) + financial metrics</td>
<td>Yes</td>
</tr>
<tr>
<td>4</td>
<td>ESG in alternative investments</td>
<td>Financial Market overview (type of players)</td>
<td>Yes</td>
</tr>
<tr>
<td>5</td>
<td>Impact Investing</td>
<td>Financial Market overview (type of players)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

TEACHING & LEARNING METHODS
Class presentation (PowerPoint) : charts, case studies, class discussions
<table>
<thead>
<tr>
<th>ASSESSMENT</th>
<th>NATURE</th>
<th>% OF THE TOTAL MARK</th>
<th>DETAILS</th>
<th>DURATION</th>
<th>LEARNING OUTCOME EVALUATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MCQ</td>
<td>50</td>
<td>ESG MARKET</td>
<td>45mn</td>
<td>Definition, different types of strategies,</td>
</tr>
<tr>
<td>2</td>
<td>Case study</td>
<td>25</td>
<td>ESG INTEGRATION (article). The objective will be to identify risks/opportunities from article for a specific sector (utilities or automobile sector).</td>
<td>30mn</td>
<td>Evaluate ESG risk/opportunities for one specific sector</td>
</tr>
<tr>
<td>3</td>
<td>Class presentation</td>
<td>25</td>
<td>ESG INVESTMENT PRODUCT. The objective will be to create an investment product for a client with specific guidelines. For example, high sensibility to environmental thematic, equity asset class, European market, etc.</td>
<td>20mins (incl 10mins questions)</td>
<td>Create an ESG investment product (without details)</td>
</tr>
</tbody>
</table>
20_M2_NI_FMK_S2_CCO_5403: DATA & MACHINE LEARNING** / Fintech Certificate

SEMESTER: 2  
NUMBER OF HOURS: 30  
INTERNATIONAL PROGRAMME: 4 ECTS  
COURSE COORDINATOR + MAIL: TBD

**COURSE OBJECTIVES**

This course provides an overview of many concepts, techniques, and algorithms in machine learning with a special focus on financial applications. The course will start with topics such as classification and end up with more recent topics such as boosting, support vector machines, and Bayesian networks. In addition, students will learn to use the Python programming language, and the powerful Scikit-Learn library. The course will combine both theory and hands-on implementation.

**LEARNING OUTCOMES**

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

- Prepare their data for machine learning problems
- Understand supervised/unsupervised and deep learning methods
- Implement these methods using Python’s scikit-learn library
- Be able to use techniques to deal with very large datasets

**COURSE CONTENT**

The course can be decomposed into three parts:

- **Part I. Supervised Learning**
  This will begin with Regression. We then encounter the problem of Classification using methods such as logistic regression, decision Trees, k nearest neighbours, support vector machines and naïve Bayes.

- **Part II. Unsupervised Learning**
  Clustering, k-means, dimensionality reduction, PCA, IPCA, hierarchical clustering, etc.

- **Part III. Deep Learning**
  Neural network architectures

In addition, topics on “model (and variable) selection ”, ensemble methods such as Random Forests and Boosting and evaluation of learning algorithms will be covered. I will also touch on the use of parallelisation, Hadoop and AWS for big data analysis.

**ASSESSMENT METHODS**

The evaluation will be based on an exam (70%) and a group assignment (30%)
20_M2_NI_FMK_S2_CCO_5407: DATA VISUALIZATION / Fintech Certificate

SEMESTER: 2
NUMBER OF HOURS: 15
INTERNATIONAL PROGRAMME: 2 ECTS
COURSE COORDINATOR + MAIL: Prof. Christophe CROUX, Christophe.croux@edhec.edu

COURSE OBJECTIVES
In business and society in general there is an abundancy of data available. The process of retrieving useful information from these data is called data mining. In this course we focus on the visualization of data. We learn how to retrieve and visualize the main features of data structures in different forms.

LEARNING OUTCOMES
After having taken this course, participants will be able to know or understand (knowledge-based outcomes)
- Multivariate data structures: scatterplots, boxplots, biplots, outlier detection methods (i)
- Features of time series and network data (ii)
More specifically, participants should be able to (skill- and competency-based outcomes)
- Write R-scripts to import, process, and visualize multivariate data. (iii)
- Represent and visualize network data, and multiple financial series (iv)

PREREQUISITES
Students need to have a good understanding of the basic statistical theory, they should be familiar with mathematical notation and calculus, and they should have some elementary programming experience

COURSE CONTENT

<table>
<thead>
<tr>
<th>SESSION №</th>
<th>TOPIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Visualizing Univariate and multivariate data</td>
</tr>
<tr>
<td>2</td>
<td>Flagging outliers</td>
</tr>
<tr>
<td>3</td>
<td>Dimension reduction with principal components analysis</td>
</tr>
<tr>
<td>4</td>
<td>Network data</td>
</tr>
<tr>
<td>5</td>
<td>Visualizing financial time series</td>
</tr>
</tbody>
</table>

TEACHING & LEARNING METHODS
Lectures including discussions, exercises using statistical software, cases and examples.

ASSESSMENT METHODS

<table>
<thead>
<tr>
<th>ASSESSMENT</th>
<th>% OF THE TOTAL MARK</th>
<th>DURATION</th>
<th>LEARNING OUTCOME EVALUATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homeworks</td>
<td>30</td>
<td>1 day</td>
<td>(iii) and (iv)</td>
</tr>
<tr>
<td>Test Questions</td>
<td>30</td>
<td>1 day</td>
<td>(i) and (ii)</td>
</tr>
<tr>
<td>Final Homework</td>
<td>40</td>
<td>1 day</td>
<td>(iii) and (iv)</td>
</tr>
</tbody>
</table>

READING
Course notes will be distributed. There is no compulsory reading list. Some useful references:
20_M2_NI_FMK_S2_CCO_5664: R FOR FINANCE / Fintech Certificate

SEMESTER: 2
NUMBER OF HOURS: 15
INTERNATIONAL PROGRAMME: 2 ECTS
COURSE COORDINATOR + MAIL: CZELLAR Veronika, veronika.czellar@edhec.edu

COURSE OBJECTIVES
The course objective is to provide students with basic knowledge of R with a particular focus on analyzing financial data and estimating financial models with R.

LEARNING OUTCOMES
After having taken this course, participants will be able to/are expected to know or understand (knowledge-based outcomes)
- codes written in R

More specifically, participants should be able to (skill- and competency-based outcomes)
- download and analyze financial time series data
- estimate model parameters using likelihood-based and simulation-based methods
- extract hidden components in financial models using particle filters

PREREQUISITES
Having installed R from https://www.r-project.org/ on your computer.

COURSE CONTENT

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reading/exporting financial data with R</td>
</tr>
<tr>
<td>2</td>
<td>2. Likelihood-based estimation in finance</td>
</tr>
<tr>
<td>3</td>
<td>3. Random number generation</td>
</tr>
<tr>
<td>4</td>
<td>4. Simulation-based methods in finance</td>
</tr>
<tr>
<td>5</td>
<td>5. Problems suggested by students and review session</td>
</tr>
</tbody>
</table>

TEACHING & LEARNING METHODS
The course will involve the following teaching methods:
- in-class lectures
- optional presentations of individual/group work

ASSESSMENT METHODS

<table>
<thead>
<tr>
<th>ASSESSMENT TYPE</th>
<th>% OF THE TOTAL MARK</th>
<th>DURATION</th>
<th>LEARNING OUTCOME EVALUATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final exam</td>
<td>100%</td>
<td>1h30</td>
<td>Individual written exam</td>
</tr>
</tbody>
</table>

READING
COURSE CONTENT

- Basics of business ethics:
  - Role of values and norms in the functioning of individuals and society
  - Shifting values e.g. the world value studies
- Value shifts impact stakeholder relations
  - Examples for clients, stockholders, employees and suppliers
- Rise of sustainability as business model, also in finance
- A few notes on ethics
- Ethical reasoning: relativism, consequentialism, deontic reasoning, virtues
- The trust mechanism central element in functioning of financial markets
- Ethical dilemmas and how to tackle them
- Solving cases through dilemma training
- The central role of the financial system
- Ethics in financial markets
- Ethics in financial services
  - Serving clients
  - Managing financial institutions
- Individuals in organizations
  - Organizational pressure
  - Leadership
- Topics in financial ethics
  - SRI
  - Islamic finance
  - Insider trading

TEACHING & LEARNING METHODS

Group Task: Values and Norms inside the firm
Pick out a financial company and find out everything they have to say with respect to value related questions (could be about stakeholder relations, corporate social responsibility, sustainability, corporate governance, code of conduct, compliance,
Present your company and its value attitude in a short 10min presentation. Be critical (is anything missing, scandals etc.)
Values and norms = what are they? = How do they function?
Back to basics: eight concepts: Values, Norms, Morality, Ethics, Law, Culture, Religion & Technology.

ASSESSMENT METHODS

- Group work: 10min presentation on the value core of a financial company. With peer evaluation. (5/20)
- Individual take home exam: A text is mailed, you get 24/48 hours to react, try to include in your answer as many elements of the course as you can (15/20)
COURSE OBJECTIVES
This module requires participants to explore a number of data collection methods to produce qualitative and quantitative inquiries on France and its industries. A public/private business will be the focus of student research with the aim to make strategic proposals to stakeholders. Research is considered an interdisciplinary task encompassing primary and secondary data gathering, framing an original research question and arguing for a recommendation or a new way of understanding a problem or opportunity. Practice in research for consulting will allow participants to familiarize themselves with creating value through benchmarking, industry comparison and value-driven strategic analysis. It will also familiarize students with the “inside” experience of a French concern.

LEARNING OUTCOMES
After having taken this course, participants will be able to/are expected to know or understand (knowledge-based outcomes)
- L01 France - its business specificities
- L02 Adaptation strategies for public institutions to enhance their financial independence

More specifically, participants should be able to (skill- and competency-based outcomes)
- L03 Speak and write critically about the private and public sector in France
- L04 Adapt a critical perspective on the political philosophies that influence French organizations
- L05 Conduct industry specific country risk analysis concerning France

PREREQUISITES
Three years of general business courses or Bac + 3 Business Administration. A working knowledge of French is helpful, but not required.

COURSE CONTENT

<table>
<thead>
<tr>
<th>SESSION N°</th>
<th>TOPIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to the French Economy &amp; French Centers of Excellence</td>
</tr>
<tr>
<td>2</td>
<td>Field visit to company</td>
</tr>
<tr>
<td>3</td>
<td>Swot, problem statement</td>
</tr>
<tr>
<td>4</td>
<td>Mission statement</td>
</tr>
<tr>
<td>5</td>
<td>Comparison (local)</td>
</tr>
<tr>
<td>6</td>
<td>Benchmark (international)</td>
</tr>
<tr>
<td>7</td>
<td>France in Europe</td>
</tr>
<tr>
<td>8</td>
<td>Culture, management &amp; values</td>
</tr>
<tr>
<td>9</td>
<td>Final consulting reports &amp; Presentation</td>
</tr>
<tr>
<td>10</td>
<td>Final consulting reports &amp; presentation</td>
</tr>
</tbody>
</table>

TEACHING & LEARNING METHODS
Lectures, student study cohorts, Socratic dialogue, reading.

ASSESSMENT METHODS

<table>
<thead>
<tr>
<th>ASSESSMENT</th>
<th>% OF THE TOTAL MARK</th>
<th>LEARNING OUTCOME EVALUATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation</td>
<td>20</td>
<td>LO1, LO2</td>
</tr>
<tr>
<td>Consulting Report &amp; Presentation</td>
<td>50</td>
<td>LO 3, 4, 5</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30</td>
<td>LO1, LO2</td>
</tr>
</tbody>
</table>
READING

20_M2_NI_FE_S2_LVX_LV2_FLE_INCOMINGNODD_1352: FRENCH COURSE (For Incoming students)

SEMESTER: 2
NUMBER OF HOURS: 30
INTERNATIONAL PROGRAMME: 5 ECTS
COURSE COORDINATOR + MAIL: Elizabeth DICKSON, elisabeth.dickson@edhec.edu

COURSE OBJECTIVES

Level 1
- Acquire knowledge of basic grammatical structures
- Acquire vocabulary needed for basic daily communication
- Discover the socio-cultural life of France

Level 2
- Learn to master the most common communication situations, both written and oral
- Discover France, its geography, its customs, its social life
- Participate in discussions and present one’s opinions clearly
- Fill gaps in grammar

Level 3
- Discover the language of business and the life of an enterprise in the French socio-economic context
- Learn to communicate in the business world, both in writing and orally
- Learn about the working of a firm based on specific themes

LEARNING OUTCOMES

Level 1
- After having taken this course participants will be able to:
  - Master basic conversation skills
  - Carry out basic everyday tasks in the French language

Level 2
- After having taken this course participants will be able to:
  - Master written and spoken French in both a business and social context

Level 3
- After having taken this course participants will be able to:
  - Be able to use French in various business simulations
  - Master business French
  - Understand French companies and how they work

PREREQUISITES

Level 1: None
Level 2: To be able to speak, write and understand basic French
Level 3: To be able to speak, write and understand French at advanced level

COURSE CONTENT

Level 1
- Various aspects of daily life such as:
  - Introducing oneself and introducing someone to a third person
  - Speaking about oneself
  - Reserving a hotel room
  - Asking for directions or for information
  - Shopping
  - Making simple descriptions

Level 2
- The final goal of this course is to:
  - Communicate with ease by telephone,
  - Undertake administrative procedures,
Financial Economics Track – FINANCIAL MARKETS
2019-2020

- Make reservations,
- Send e-mail messages,
- Write simple letters,
- Understand texts in French and discuss a particular topic

Level 3
- Various aspects of a firm’s life internally and in its relations with the outside world, namely:
  - Legal business forms
  - Flowcharts
  - Employment
  - Advertising
  - Banking
  - Suppliers

TEACHING & LEARNING METHODS

Level 1
- Discovering the basics of language
- Applied exercises both spoken and written, individual and in groups
- Role playing

Level 2
- Applied exercises both spoken and written, individual and in groups
- Role playing
- Discussions and debates
- Grammar exercises as needed

Level 3
- Interactive approach to the business world.
- By means of a business-creation simulation (in groups of 3 or 4 students), students create and play out a fictional situation. They will have to "operate" their business, do research work, begin negotiations...
- These exercises will lead to work with grammar objectives.

ASSESSMENT METHODS

<table>
<thead>
<tr>
<th>ASSESSMENT TYPE</th>
<th>% OF THE TOTAL MARK</th>
<th>DURATION</th>
<th>LEARNING OUTCOME EVALUATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation</td>
<td>30%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contrôle continu</td>
<td>70%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

READING

Levels 1, 2, 3
- « Bescherelle – La grammaire pour tous », Laurent Nicolas, Bénédicte Delaunay, Hatier 2012
- "Le Bled, orthographe, grammaire, conjugaison, vocabulaire » Edouard Bled, Hachette 2012

Level 1
- "Comment vont les affaires" d'Anatole Bloomfield et Béatrice Tauzin. Hachette 2007

Level 2
- "Civilisation Progressive du Français ", niveau intermédiaire Ross Steele CLE INTERNATIONAL, 2004

Level 3
- "Civilisation progressive du français", niveau avancé Jacques Pêcheur CLE INTERNATIONAL, 2010
- "Affaires à suivre" d'Anatole Bloomfield et Béatrice Tauzin. Hachette 2007
20_M2_NI_FMK_S2_MAM_5658: REGULATION AND INNOVATION IN ASSET MANAGEMENT * / Major in Asset Management

SEMMESTER: 2
NUMBER OF HOURS: 15
INTERNATIONAL PROGRAMME: 2 ECTS
COURSE COORDINATOR + MAIL: Xavier PARAIN

COURSE OBJECTIVES
This course equips participants with technical, regulatory and legal tools that will allow them to understand and implement investment strategies in the highly regulated environment of asset management. How to find new investment strategies that are suitable for mutual funds? How to implement the strategies, taking into account the financial market regulation or the asset management regulation?

LEARNING OUTCOMES
After having taken this course, participants will be able to/are expected to know or understand (knowledge-based outcomes):
- Understand key drivers of innovation in asset management strategies
- Take a perspective of the very large range of assets classes providing asset management strategies and innovation
- Construct portfolio and strategies eligible with asset management regulation
- Select the appropriate type of investors and type of funds suitable for different strategies

More specifically, participants should be able to (skill- and competency-based outcomes):
- Design portfolios on different strategies
- Understand risk / potential upside & downside / underlying idea (including regulatory drivers) of different innovations in asset management
- Use regulation as key pillar in new product implementation
- Use regulation as potential source for new product and strategies

PREREQUISITES
Asset Management
Financial Theory

TEACHING & LEARNING METHODS
5 sessions of 3 hours each.
The course will be taught through lectures, but a lively dialogue between students and professor is strongly encouraged.

ASSESSMENT METHODS

<table>
<thead>
<tr>
<th>ASSESSMENT</th>
<th>% OF THE TOTAL MARK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final quiz</td>
<td>40%</td>
<td>1h</td>
</tr>
<tr>
<td>Take home case study</td>
<td>60%</td>
<td>2/3 pages analysis on the case study to provide</td>
</tr>
</tbody>
</table>

READING
- BCG : Global Asset Management 2017: The Innovator’s Advantage
- FCA : innovation sandbox – one year after
- Fiona Frick, Unigestion CEO : asset management and innovation
COURSE OBJECTIVES

For more than 50 years, the industry has focused on delivering alpha through security selection as the main source of added-value, based on the assumption that market cap weighted indices were efficient portfolios. This sole focus, which did not fare well during recent market turbulences (pension crisis, subprime crisis, oil crisis, credit crisis), has also somewhat distracted the industry from another, more significant, source of added value: beta and risk management. Twenty years of academic and professional research have shown that the average active fund manager under-performs the index. A paradigm change is currently taking place, accelerated by several years of down markets that have emphasized the weakness of current asset management practices.

This course equips participants with both the technical and conceptual tools that will allow them to take an active role in this fast-evolving environment. In particular, it provides a detailed introduction to the modern approach to equity portfolio management that advocates a clear separation between the management of normal returns (a.k.a. betas) emanating from exposure to rewarded sources of risk and the management of abnormal returns (a.k.a. alphas) emanating from active managers’ unique expertise to generate excess return above and beyond the risks taken.

The course therefore aims at building efficient equity blocks that could be later introduced in a global asset allocation exercise. The first part of the course covers advances in beta management by focusing on the technical challenges involved in portfolio optimization, i.e. the need for enhanced estimates of risk parameter. Building on these parameters, we also provide tools for scientific diversification. The second part introduces the students to active management by incorporating active views when building equity portfolios. The course concludes with performance and risk analysis of the equity solutions.

Short application cases and excel-based illustrations are systematically used throughout the course to help students synthesize concepts and master techniques.

LEARNING OUTCOMES

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

- Understand when and why modern portfolio theory fails in the real world;
- Make covariance matrix estimation manageable and improve parameter estimates;
- Introduce active views in equity portfolio construction;
- Define statistical benchmarks based on scientific diversification;
- Perform a performance and risk analysis of the equity solutions;

PREREQUISITES

- EXCEL
- Financial Theory
- Financial Modelling
- Statistics

COURSE CONTENT

LECTURE 1: Introduction: Paradigm Shifts in the Asset Management Industry — From Alpha Management to Beta Management

Asset management is (should be) the art and science of designing investment solutions that match investors’ preferences. In the face of these recent crises, and given the intrinsic difficulty in alpha generation, the question has been raised of the value-added of the asset management industry and active asset managers are wondering whether they are condemned to decrease their fees and see passive offerings dominate investors’ mandates.

The core-satellite approach is consistent with a new segmentation of management offerings that is progressively taking place between on the one hand “core producers” or “beta factories”, and on the other hand “satellite producers” or
“Alpha specialists”. The structure of this course reflects the organization of the construction/selection process of an equity portfolio corresponding to the beta management.

**LECTURES 2 & 3 / From Modern Portfolio Theory to Asset Management Practice: Towards Optimal Risk Diversification**

Modern portfolio theory was born with the efficient frontier analysis of Markowitz (1952). Unfortunately, early applications of the technique, based on naïve estimates of the input parameters, have been found of little use because leading to non-sensible portfolio allocations.

The focus of the 2nd and 3rd lectures is on bridging the gap between portfolio theory and portfolio construction by showing how to generate enhanced parameter estimates and how to use alternative techniques of diversification so as to improve the quality of the portfolio optimization outputs (optimal portfolio weights).

**LECTURE 2: Improved Covariance Estimates**

Addressing sample risk: Covariance matrix estimation and state-of-the art factor models: reducing dimensionality and estimating the covariance matrix with explicit-, implicit-, and explicit/implicit factor models; introducing Bayesian techniques and statistical shrinkage estimators.

Addressing stationarity risk: beyond rolling-window and exponentially-weighted moving average analysis; conditional estimation of parameters with autoregressive conditional heteroskedasticity and state-dependent models.

**LECTURE 3: Enhanced Index Construction and Smart Betas**

The standard practice of constructing stock market indices based on cap weighting schemes has faced severe criticism. Evidence abounds of the inefficiency of cap-weighted indices. Smart beta strategies (also known as advanced betas) attempt to deliver a better risk and return trade-off than conventional market cap weighted indices by using alternative weighting schemes based on measures such as volatility, momentum, dividends, book value, etc.

**Lecture 4 / From Passive to Active equity management**

This part provides techniques for enhanced return estimates in a passive and active setting.

**Improved Expected Return Estimates**

Expected return estimation in the absence of active views: factor model and statistical shrinkage towards the grand mean for expected return estimation; incorporating idiosyncratic risk; using total risk as a proxy for excess expected returns; rehabilitating the tangency portfolio.

Incorporating active view in a Bayesian framework: applying Bayesian analysis to combine historical estimates and non-sample views of varying reliability; the Black-Litterman model as a special case; portfolio optimization with parameter uncertainty.

**Lecture 5 / Performance and risk measurement**

The last step in the process of selecting or building an equity building block is the performance and risk measurement of the equity solution.

The last module starts with traditional measures of performance (Sharpe, Information, ratio,) and risks (tracking error, volatility) to progressively account for extreme and downside risks and for multifactor dimension of risks.

**Accounting for more General Risk Measures**

Markowitz analysis is cast in a very simplistic environment, where it is assumed that investors have preferences only over the first two moments of asset return distribution. The module introduces measures of non-normality risks: recognising when non-normality matters and when it should be taken into account; higher-moments of portfolio returns; higher-order co-moment betas and application to fund selection.

**Portfolio Alpha Measurement**

Alpha measurement has always been at the core of portfolio managers’ concerns. Abnormal returns are all the more difficult to estimate as most portfolios are exposed to many risk factors. This is why multi-factor models have been developed as an alternative to the CAPM, thereby allowing a better description of portfolio risks and an accurate evaluation of managers’ performance, in particular a better evaluation of portfolio alpha.

**TEACHING & LEARNING METHODS**

Short application cases and excel-based illustrations are systematically used throughout the course to help students synthesize concepts and master techniques.

**ASSESSMENT METHODS**

Student evaluation comes from a written individual exam on issues surrounding the construction/selection process of a sophisticated portfolio management. It might involve a direct numerical implementation of the methods presented and explained in this course.
RECOMMENDED READING

Textbooks:

Other readings will be provided in class.
COURSE OBJECTIVES
This course is intended to provide students with an in-depth appreciation of the concepts and techniques that are reshaping the future of investment management. It will also equip them with practical tools to improve asset allocation and risk management processes, and develop new investment solutions as a dedicated response to problems faced by some of the largest asset owners or asset managers.

LEARNING OUTCOMES
After having taken this course, participants will be able to/are expected to know or understand (knowledge-based outcomes):
1. Understand how to use factor investing to efficiently harvest risk premia within and across asset classes;
2. Understand the benefits and limits of liability-driven investment strategies and goal-based investing.
More specifically, participants should be able to (skill- and competency-based outcomes):
3. Develop improved forms of multi-asset multi-factor investment solutions;
4. Use goal-based investing to design new investment solutions for individuals.

PREREQUISITES
- Empirical Methods in Finance
- Asset Management
- Fixed-Income Securities
- Derivatives Pricing and Hedging

COURSE CONTENT

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture 1</td>
<td>Introduction: From investment products to investment solutions</td>
</tr>
<tr>
<td>Lecture 2 &amp; 3</td>
<td>Efficient diversification methods for modern investment solutions – Lecture &amp; case studies</td>
</tr>
<tr>
<td>Lecture 4 &amp; 5</td>
<td>Efficient hedging methods for modern investment solutions – Lecture &amp; case studies</td>
</tr>
<tr>
<td>Lecture 6 &amp; 7</td>
<td>Efficient insurance methods for modern investment solutions – Lecture &amp; case studies</td>
</tr>
<tr>
<td>Lecture 8</td>
<td>Conclusion: Construction of improved retirement solutions</td>
</tr>
</tbody>
</table>

TEACHING & LEARNING METHODS
- Blended learning (videos, quizzes)
- Readings
- Lectures
- Cases studies
- Exercises
- Portfolio simulation exercises

ASSESSMENT METHODS

<table>
<thead>
<tr>
<th>ASSESSMENT TYPE</th>
<th>% OF THE TOTAL MARK</th>
<th>DURATION</th>
<th>LEARNING OUTCOME EVALUATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>25%</td>
<td>3 x 45 mns</td>
<td>1 &amp; 2</td>
</tr>
<tr>
<td>Case study</td>
<td>25%</td>
<td>several weeks</td>
<td>3 &amp; 4</td>
</tr>
<tr>
<td>Final exam</td>
<td>50%</td>
<td>3 hours</td>
<td>1 &amp; 2</td>
</tr>
</tbody>
</table>

READING
20_M2_NI_FMK_S2_MAM_5665: PRIVATE EQUITY / Major in Asset Management

SEMESTER: 2
NUMBER OF HOURS: 15
INTERNATIONAL PROGRAMME: 2 ECTS
COURSE COORDINATOR + MAIL: Cyril DEMARIA, cyril.demaria@gmail.com

COURSE OBJECTIVES
Knowing what venture capital, growth capital, leveraged buy-out, turnaround/restructuring and mezzanine financing are used for is a must for future managers. Understanding what private equity financing implies, delivers and does not provide is also determinant, especially given the growing influence of this sector of the global economy.

LEARNING OUTCOMES
After having taken this course participants will be able to:
- understand the context of the intervention of private equity funds and their constraints
- identify which financing technique fits corporate needs and actively manage relationships with private equity funds
- understand the methods, processes and dynamics involved in structuring transactions and implement the financial structuring of a buy-out transaction

PREREQUISITES
Participants should have passed and are encouraged to review their accounting, valuation (in particular DCF, multiples), M&A and corporate finance classes to prepare for this course.

COURSE CONTENT

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 h</td>
<td>Private equity: a business framework</td>
</tr>
<tr>
<td>8 h</td>
<td>LBO: theory and application (structuring, due diligence, valuation, value creation, exit)</td>
</tr>
</tbody>
</table>

TEACHING & LEARNING METHODS
Combination of lectures, use of case studies and active sessions of Q&A.

ASSESSMENT METHODS

<table>
<thead>
<tr>
<th>ASSESSMENT TYPE</th>
<th>% OF THE TOTAL MARK</th>
<th>DURATION</th>
<th>LEARNING OUTCOME EVALUATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final exam</td>
<td>100</td>
<td>2 hours</td>
<td>LO1, LO2, LO3</td>
</tr>
</tbody>
</table>

Individual bonuses might be given to students with active and relevant participation in class.

READING
20_M2_NI_FMK_S2_MAM_3673: TACTICAL ASSET ALLOCATION / Major in Asset Management

SEMESTER: 2
NUMBER OF HOURS: 15
INTERNATIONAL PROGRAMME: 2 ECTS

COURSE COORDINATOR + MAIL: Professor Nikolaos TESSAROMATIS

COURSE OBJECTIVES
This is a course on the theory and practice of tactical asset allocation. The course discusses the models, techniques and applications of tactical asset allocation strategies. It reviews the different types of asset allocation, the academic empirical evidence on the question of asset return and risk predictability and the modeling issues involved in building successful asset return prediction models. The course concludes with case studies of asset allocation strategies for different investment strategies and assets – global stock and bond markets, investment styles, currencies and volatility. The focus of the course will be on the application of modern portfolio management principles to bridge the gap between the theory and practice of tactical asset allocation.

LEARNING OUTCOMES
This course has the following learning objectives:

- understand the different types and performance characteristics of tactical asset allocation strategies
- appreciate the academic literature on asset return predictability
- understand the various econometric issues faced when building return forecasting models
- appreciate the many conceptual and technical challenges involved in the development of tactical asset allocation strategies
- understand the current theory and practice of tactical asset allocation strategies and its role and contribution to efficient portfolio management.

PREREQUISITES
Corporate Finance & Asset Markets (626) & International Economics (634)

COURSE CONTENT

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
</tr>
<tr>
<td></td>
<td>- What is TAA</td>
</tr>
<tr>
<td></td>
<td>- Why TAA?</td>
</tr>
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<td></td>
<td>- A brief history of asset allocation</td>
</tr>
<tr>
<td></td>
<td>- Types of TAA strategies</td>
</tr>
<tr>
<td>2</td>
<td>Tactical asset allocation – methodological foundations</td>
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<tr>
<td></td>
<td>- TAA for short and long term investors</td>
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<tr>
<td></td>
<td>- Portfolio construction and estimation error</td>
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<tr>
<td></td>
<td>- Recent developments in asset return and risk prediction modelling</td>
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<td></td>
<td>- Risk based timing strategies</td>
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<td></td>
<td>- Designing, building and evaluating a TAA strategy</td>
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<tr>
<td>3</td>
<td>Tactical asset allocation strategies</td>
</tr>
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<td></td>
<td>- Factor based asset allocation</td>
</tr>
<tr>
<td></td>
<td>- Equity factor rotation strategies (value, size and momentum)</td>
</tr>
<tr>
<td></td>
<td>- Predicting the payoff of low risk strategies</td>
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<tr>
<td></td>
<td>- Volatility, currency and commodity strategies</td>
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<tr>
<td>4</td>
<td>Topics in TAA</td>
</tr>
<tr>
<td></td>
<td>- “The fundamental law of active management”</td>
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<tr>
<td></td>
<td>- Implementing TAA strategies</td>
</tr>
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<td></td>
<td>- TAA as practiced by major investors</td>
</tr>
</tbody>
</table>

TEACHING & LEARNING METHODS
We will use class lectures and case studies.
ASSESSMENT METHODS

<table>
<thead>
<tr>
<th>ASSESSMENT TYPE</th>
<th>% OF THE TOTAL MARK</th>
<th>DURATION</th>
<th>LEARNING OUTCOME EVALUATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groupwork</td>
<td>50%</td>
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</tr>
<tr>
<td>Exam</td>
<td>50%</td>
<td>1 hour and a half</td>
<td></td>
</tr>
</tbody>
</table>

RECOMMENDED READING
Bekaert and Hodrick (BH), International Financial Management, 3rd edition, Prentice Hall, 2018
COURSE OBJECTIVES
The purpose of this course is to give participants a good understanding and workable knowledge of the techniques that should be part of the toolkit of anyone investing in, analyzing and/or advising private and institutional clients on the inclusion of alternative investments – and more specifically hedge funds, commodities and infrastructures – in their portfolios. Furthermore, this course will enable the participants to absorb the analytical arguments in the technical publications – the in-house research notes of financial institutions and in practitioner-oriented journal – that deal with alternative investments and to apply them.

LEARNING OUTCOMES
After completing this course, participants will be able to
- describe what alternative investments are, how they are structured operationally, and how the industry has evolved historically.
- analyze the core hedge fund strategies and assess their potential upside and downside
- understand commodities markets and participants, and strategies investing in commodities
- understand infrastructure investing
- demonstrate their knowledge about hedge funds, commodities and/or infrastructure investing by presenting a research topic

PREREQUISITES

COURSE CONTENT

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Characteristics of Alternative Investments: Origins and history, main structures and actors, Statistics and trends in the hedge fund industry</td>
</tr>
<tr>
<td>2</td>
<td>Long/Short Equity Strategies - Fundamental and Quantitative Approaches: Key principles, Examples of different strategies and trades</td>
</tr>
<tr>
<td>3</td>
<td>Capital Structure Arbitrage - Merger Arbitrage, Distressed Securities, Convertible Arbitrage: Key principles, Examples of different strategies and trades</td>
</tr>
<tr>
<td>4</td>
<td>Trading Strategies - Fixed Income, Global Macro, CTAs, Credit Trading: Key principles, Examples of different strategies and trades</td>
</tr>
<tr>
<td>5</td>
<td>Quantitative tools for Analyzing and Investing in Hedge Funds: Limits and dangers of using hedge fund indices, Regressions, non-linearities and Kalman filters</td>
</tr>
<tr>
<td>6</td>
<td>Commodity Fundamental: The major commodity markets, participants and their role, Physical commodities vs financial products on commodities, Insider trading, market squeezes and regulation</td>
</tr>
<tr>
<td>7</td>
<td>Investing in Commodities: The rationale and main sources of return from investing in commodities, The main indices on commodities</td>
</tr>
<tr>
<td>8</td>
<td>Trading and Hedging Commodities: Directional vs Relative Value strategies, Hedging a commodity exposure</td>
</tr>
<tr>
<td>9</td>
<td>Infrastructure Investing: Infrastructure financing needs vs supply of capital, The mechanics of infrastructure investing, Key benefits and risks in a portfolio</td>
</tr>
<tr>
<td>10</td>
<td>Presentations by groups</td>
</tr>
</tbody>
</table>

TEACHING & LEARNING METHODS
The course will involve lectures, case studies, in class presentations and readings.

ASSESSMENT METHODS
1. Class participation (10% of the grade): Just being there is insufficient. I will reward active and intelligent participation.

2. Class presentation (25% of the grade): a 20-minute presentation made in class by groups during the last session, on a topic to be chosen in a list distributed during the first session. These presentations are considered as potential material for the final exam.

3. Final exam: (65% of the grade): a 3-hour individual exam, in class. You will be allowed to bring to the class one sheet (A4, double sided) of notes and a calculator, but you are not allowed to bring any other material to the exam.

**READING**

We will use several chapters of the following books:


**Hedge funds – mandatory readings**


**Hedge funds – recommended readings**


**Commodities – recommended readings**


**Infrastructures – recommended readings**


**ABOUT YOUR INSTRUCTOR**

Francois-Serge Lhabitant is the CEO and CIO of Kedge Capital, where he oversees more than $6 billion of capital (mostly proprietary) invested in alternative investment strategies. His funds has received several performance awards, including the Best 3 Managers of the Decade (Banco Awards, 2016), Best in Risk Control Investing (Wealth and Finance International, 2015) and Best Specialist Fund of Hedge Funds over 5 years (Hedge Funds Review, 2017). He was formerly a Member of Senior Management at Union Bancaire Privée, in charge of quantitative risk management and subsequently, of the quantitative analysis for alternative portfolios. Prior to this, Francois-Serge was a Director at UBS/Global Asset Management, where he developed and implemented quantitative models for portfolio management and hedge funds.

On the academic side, Francois-Serge is a professor of finance at the EDHEC Business School (France), a visiting professor of finance at the Hong Kong University of Science and Technology (China) and a visiting professor of tax law at the Ecole Hotelière de Genève (Switzerland). He has been a Professor of Finance at HEC University of Lausanne and the co-director of its Master in Banking and Finance.

Francois-Serge holds an engineering degree from the Swiss Federal Institute of Technology, a B.Sc. in Economics, a M.Sc. in Banking and Finance, and a Ph.D in Finance from the University of Lausanne, and a LL.M. in Tax Law from the University of Geneva. He is the author of several books and published articles in the areas of risk management, asset management, alternative investments (hedge funds, commodities), tax law and emerging markets.
COURSE OBJECTIVES
The regulation seminar aims at breaking into the world of financial regulations. Often opaque and difficult to apprehend, financial regulations actually cover a very wide scope of topics and activities. Therefore we will not aim at exploring every single piece of regulation but will focus on the ones related to financial markets and banking activities. We will focus our discussion on the requirements imposed to entities which are active in these fields such as asset managers, market makers, market operators, issuers and of course banking institutions for which we will also consider the prudential requirements that they have to meet.

LEARNING OUTCOMES
After having taken this course, participants will be able to/are expected to know or understand (knowledge-based outcomes):
- General logic and organization of financial regulations
- Overall requirements imposed on key participants in financial markets

More specifically, participants should be able to (skill- and competency-based outcomes):
- Have the ability to do critical thinking
- Know how to respond quickly to changing market regulations
- Understand the various regulation policies
- Being effective at dealing with pressure

PREREQUISITES
Students should be familiar with the main features & organization of a banking and a financial institution and financial markets, as well as main financial instruments / asset classes.

COURSE CONTENT
Lecture 1: Introduction to Financial regulation
After reviewing the general organisation of the course, this first course will focus on the objectives of financial regulation especially looking at them through the prism of both 1) the 2008 financial crisis and the evolution in the attitude of regulators over the last few years and 2) the specific case of the financial integration of the EU. It will also cover the way financial regulation is set up with a special focus in Europe. Lastly, this first session will look at the general ways financial regulation is organised and also supervised, especially in Europe.

Lecture 2: Regulation on banks
This session will focus on the banking regulations both on the prudential and the conduct side. We will discuss the Capital Requirement Directives and the various recommendations of the Basel Committee. A key aspect of the course will be to understand how the regulation of banks helps limit risks for its environment & the economy as a whole.

Lecture 3: Regulation on financial markets
We will look at how market infrastructures & their environment are regulated, from trading to post-trade operations, also taking the perspective of how the financial markets are organized, and how they have evolved.
We will notably discuss financial markets & market infrastructure regulations such as MiFID II/MiFIR, EMIR/UMR, CSD-R, SFTR. We will finish with the regulations related to issuers (Prospectus Directive, Transparency Directive, Accounting Directive...)

Lecture 4: Regulation on asset managers and investor protection
We will then focus on three specific areas: the regulations covering the universe of asset management (UCITS, AIFM, Money market funds and all the other sectorial legislation); all the regulations covering investor protection related issues (ie part of MiFID II and PRIIPs).
Lecture 5: Closing sessions – New trends and the impact of financial regulation & impact of financial regulation

This course will be articulated around two topics:
- The issues on which the regulator now strongly focuses and which will be implemented in coming years, taking the case of sustainable finance, and of crypto-assets.
- A discussion on the effects of financial regulation, its possible limitations, but also how regulation impacts the strategy of market players. We will also touch upon the issue of regulations cross-geography, including the case of Brexit and the impact it could have on the organisation of financial regulation. Lastly, we will review some of the key concepts covered in the previous course and prepare for the final exam.

TEACHING & LEARNING METHODS

The course is based on before class preparations, in-class lectures, group presentations and discussions. Students are expected to attend every class. Since the course consists of five three-hour sessions, an absence from even one class involves missing a significant portion of the course.

ASSESSMENT METHODS

<table>
<thead>
<tr>
<th>ASSESSMENT</th>
<th>NATURE</th>
<th>% OF THE TOTAL MARK</th>
<th>DETAILS</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation</td>
<td>Group assignment</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final exam</td>
<td>Multiple choice and open questions</td>
<td>70</td>
<td>On campus</td>
<td>1 hour and a half</td>
</tr>
</tbody>
</table>

READING

Lecture Slides

Lecture slides are the most important course material and will be available at the beginning of each course session.

The book listed below provide some references for the topics covered in the course:

- MiFID II: une nouvelle donne pour les marchés financiers (RB) (2017)
- Financial Stability Board: https://www.fsb.org/
20_M2_NI_FMK_S2_MTM_2765: FX DERIVATIVES MARKETS AND APPLICATIONS TO TREASURY MANAGEMENT / Major in Trading

SEMESTER: 2
NUMBER OF HOURS: 15
INTERNATIONAL PROGRAMME: 2 ECTS
COURSE COORDINATOR + MAIL: Soraya KAZZIHA

COURSE OBJECTIVES
Foreign exchange is an essential building block of financial markets, and is intimately linked to treasury and liquidity management. FX derivatives are used for hedging purposes as well as investment purposes across all segments of the Industry, and as such should form part of any investment professional toolbox.

LEARNING OUTCOMES
After having taken this course, participants will be able to/are expected to know or understand

- Various constituents of FX markets from Spot/Forward markets to options to currency basis markets
- Rationale and need for multiple discounting curves as it relates to currency basis and OIS-discounting

More specifically, participants should be able to (skill- and competency-based outcomes)

- Structure and price derivatives-based FX hedging strategies for Private investors, Corporates and Fund Management industry
- Manipulate various discounting curves

ASSESSMENT METHODS

<table>
<thead>
<tr>
<th>ASSESSMENT TYPE</th>
<th>% OF THE TOTAL MARK</th>
<th>DURATION</th>
<th>LEARNING OUTCOME EVALUATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>exam</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
COURSE OBJECTIVES
Structured products are investment vehicles combining vanilla and exotic derivatives to form sophisticated products on different assets classes: equities, currencies, commodities or interest rates. They have been highly popular as they offer complex optional profiles otherwise impossible to reach to the usual buyer. This course will allow the student to understand the building blocks of structured products, their dynamic risk management and the importance of understanding their primary and secondary markets. The course will look in very specific details at the risks, valuation and key elements of each structured product through most of the usual asset classes and will explain the basic principles in both a theoretical and a practical way.

LEARNING OUTCOMES
After having taken this course, participants will be able to/are expected to know or understand (knowledge-based outcomes):
- Understand the market of structured products
- Comprehend the building blocks of pricing and risks of Structured products
- Master the construction of equity structured Products
- Master the construction of FX and IR structured products
More specifically, participants should be able to (skill- and competency-based outcomes):
- Understand the risks involved in Structured Products on the buy side
- Know how to manage the derivatives risks in structured products

PREREQUISITES
Introduction to Derivatives

COURSE CONTENT
Lecture 1:
The structured product market: the need of structured product markets in 2020 in Europe and the USA
Vanilla Options Pricing
Binary options
The Importance of Funding in the structuring of products
Lecture 2:
The building blocks of structured products in different asset classes
- Swaps
- CMS
- CLN
- Options
- CDS
Lecture 3:
First Generation Equity products
Restructuring the profile of a protected note
Lecture 4:
Second Generation Equity products
The concept of knock in barriers and auto calls
The Phoenix Memory
The Reverse Convertible
Lecture 5:
IR and FX structured products
CMS spreads
The Forward accumulator
The Target Redemption Forward
Repackaging structured products

**TEACHING & LEARNING METHODS**
The course will involve several teaching methods:
- in-class lectures
- case studies
- hands-on applications/ presentations

**ASSESSMENT METHODS**
The course is assessed through a combination of case studies (25% of the grade) and a one and a half hour exam (75% of the grade).

**READINGS**
Options, Futures, and Other Derivatives by John C. Hull

*Further reading:*
FX Options and Structured Products by Uwe Wystup
Emerging Financial Derivatives: Understanding Exotic Options and Structured Products by Jerome Yen et Kin Keung Lai
The objective of the course is to give the student a solid grounding in the measurement of market risk. At the heart of the course are:

- first, how to estimate the joint distribution of risk factors, and
- second, how to translate it into a P&L distribution, for which risk measures can be calculated.

Therefore the student will learn how to assess critically the strengths and weaknesses of various methods to estimate the P&L distribution and to choose a risk model appropriately. The student will learn how to test whether a risk model ‘works’ (backtesting), and will acquire the skills to ‘stress test’ a portfolio. After taking the course the student should be able to work as a desk risk manager for a complex financial institution.

LEARNING OUTCOMES

After having taken this course participants will be able to:

- given a portfolio of positions, choose the most appropriate method to quantify the market risk associated with portfolios of different complexity (linear and non-linear products);
- assess via backtesting whether a risk model is ‘working’;
- conduct realistic and relevant stress tests and scenario analyses;
- evaluate the degree of model risk arising from a set of positions and/or the choice of a risk model;
- understand the links between market risk, funding risk and liquidity;
- communicate concisely, effectively and cogently the results of his/her risk quantification to senior executives or non-specialist senior users of risk measures.

PREREQUISITES

The mathematical requirements will be kept to what is strictly necessary, but the student must

1. have a solid understanding of basic calculus (partial derivatives, integrals, elementary series, etc.);
2. have taken an introductory course on Fixed Income;
3. be familiar with MS Excel and with a programming language such as MatLab or Visual Basic; C++ not needed.
4. be willing and happy to work with real data.

COURSE CONTENT

- **Lecture 1: Introduction to market risk and its management.** Reasons for managing risk; risk measurement as a tool for managing risk and risk management as a component of the capital requirement; the link between capital and risk; coherent risk measures and other attributes of a ‘good’ risk measure. Risk management from the perspective of the regulator and of the financial entity. The historical context of VaR and lessons from the past. The central role of P&L distributions in the quantification of market risk.

- **Lecture 2: Obtaining the P&L Distribution.** Synthetic representation of risk. Approaches to building the joint distribution of risk factors: historical simulation; historical simulation with volatility updating; parametric approaches; Monte Carlo.

- **Lecture 3: Creating joint distributions via a marginals-plus-copula approach.** Focussing on the marginals: parametric and non-parametric methods; conditional volatility estimation (GARCH models); Extreme Value Theory. Focussing on the copula: testing co-dependence and choosing a copula. Simulating high-dimensional samples from a joint distribution obtained from the copula + marginals approach.

- **Lecture 4: From the joint distribution of risk factors to the P&L distribution.** full revaluation, P&L approximation functions, first- and second-order approximation for linear and non-linear portfolios.

- **Lecture 5: Case study.** After accessing a number of time series of asset prices, rates and volatilities, and given a hypothetical market portfolio, the students will calculate the distribution of profits and losses using the different methods discussed so far, and will assess critically the results.

Lecture 7: Backtesting. Assessing the validity of the distributional assumptions (especially regarding the tails); testing for independence; analysis of performance of different risk models during the 2007-2008 crisis; choice of different risk models for different uses; backtesting different risk measures.

Lecture 8: Stress testing and scenario analysis. Exploring different worlds: how to stress a correlation matrix; how to deform the marginals: eg, how to deform a yield curve consistently with exogenous scenario views; ways to conduct reverse stress testing. Requirements of effective stress testing; how to create logically consistent scenarios.

Lecture 9: Model risk, liquidity risk, counterparty credit risk. Different types of model risks. Different concepts of liquidity: as ability to fund assets; as costs incurred when liquidating a position. The implicit subsides and their funding value. Definition of counterparty credit risk: correlation between the market risk exposure and the credit standing of the counterparty; wrong-way risk; Central Clearing Counterparties.

Lecture 10: Case study 2: After accessing a number of time series of asset prices, rates and volatilities, and given a hypothetical market portfolio, as in Case Study 1, the students will be asked to construct a stress test associated with a macro scenario, and to integrate the information from the ‘statistical’ P&L distribution and its attending risk measures (VaR, ES, etc) with the outcome of the stress test.

TEACHING & LEARNING METHODS
The course will be taught through lectures, but a lively dialogue between the students and the lecturer is strongly encouraged.

The lectures will strive to create links between a solid theoretical underpinning, the applications of the theory and market instruments. The mathematical requirements will be kept to a minimum, but some simple proofs will be presented (and required!).

The students will be assigned two major case studies (probably in Lecture 4 and Lecture 10) to work on outside the classroom, and the results will be analyzed and discussed in detail in two of the lectures. However, several minor case studies will be discussed in detail during the course.

If at all possible, the students should have their laptops in class, loaded with the programming language they are going to use (eg, MatLab, Visual Basic for Excel, etc.).

ASSESSMENT METHODS
The final grade will depend on a final exam (70%) and on the performance during the case studies and class participation (30%).

The student is expected to show that he/she is capable of analysing real-life risk management situations, such as how to estimate various risk statistics, how to “explain” changes in value of a portfolio, how to choose the most suitable method to calculate various risk measures for a given portfolio.

A calculator will be allowed for the final exam.
20_M2_NI_FMK_S2_MT_M_886: TRADING IN PRACTICE ** / Major in Trading

SEMESTER: 2
NUMBER OF HOURS: 30
INTERNATIONAL PROGRAMME: 3 ECTS
COURSE COORDINATOR + MAIL: Olivier MAMAN

**COURSE OBJECTIVES**

The objective of the course is to introduce the different facets of actual trading. The students will be taught different types of trading strategies, as well as a concrete build-up of positions. They will become familiar with the notions of Relative Value trading, technical trading, fundamental trading, options trading.

During the thirty hours of class, students will develop a concrete knowledge of how markets work. Since a big part of each session will be done in a virtual trading floor, they will practically learn how to trade a few instruments. These sessions will teach them trading reflexes and appropriate reactions to market movements.

Another objective is to educate the students to the notion of balance between risk and reward, to give them a framework that can help them when they decide to do investments (in a professional OR personal way).

Eventually the course will help students to figure out if they want a career in this area of business.

**LEARNING OUTCOMES**

After having taken this course participants will be able to:

- Understand the vocabulary and grammar of a trading floor
- Experience the interactions between traders, sales, clients, brokers
- Realize in a personal and lively way what it requires to be a trader, a sales, a structurer
- Identify Risk Management issues related to market positions
- Become familiar with practical trading techniques
- Formal training to Bloomberg platform (Bloomberg Market Concepts)

**PREREQUISITES**

Students should be trained to Bloomberg system, and be able to access information and quotes on basic financial instruments. They should be able to link Excel sheets to Bloomberg quotes.

**COURSE CONTENT**

- Description of the financial markets; Typology of Trading jobs
- Main Trading strategies
- Introduction to Options trading
- Introduction to Technical Analysis: patterns
- Technical analysis: indicators; Risk management principles

**TEACHING & LEARNING METHODS**

All courses could be split in two parts. A first one (3 hours) is spent in a virtual trading room. A second part (3 hours) is dedicated to a development around a specific trading theme.

**ASSESSMENT METHODS**

Students will be grouped by teams of two or three for the simulations sessions. Teams will be graded according to their participation and results. This will count for 40% of the student assessment.

From the 2nd to the 5th session, there will be a 15-25mn quiz on the previous course. Each quiz will count for 10% of the student assessment. So it will be a total of 40%.

From the end of the first session, I will ask each student to invest a virtual capital of 1 million €. The student will invest in a free way, and send me by email once every month end the asset allocation, the rationale behind each investment, the P&L of the investments. I will stress the quality of the rationale behind the investments. This continuous work will count for 10% of the grade.

Students will be trained to Bloomberg, and will be subject to the “Bloomberg Market Concepts” test (10% of the overall grade).

**READINGS**
Fundamental analysis:
- “The Intelligent Investor” by Benjamin Graham: the Bible of Stock value investment.
- “A Random walk down Wall Street”, by Burton G. Malkiel


Derivatives and Options: “Fundamentals of Futures and Options”, by John C. Hull

Trading stories:
- “Market Wizards”, by Jack D. Schwager
- “The New Market Wizards”, by Jack D. Schwager
- “Rogue trader”, by Nick Leeson
- “Liar’s Poker”, by Michael Lewis
20_M2_NI_FM_K_S2_MTM_6309: ALGORITHMIC TRADING ** / Major in Trading

SEMESTER: 2
NUMBER OF HOURS: 15
INTERNATIONAL PROGRAMME: 2 ECTS
COURSE COORDINATOR + MAIL: TBD

NEW COURSE - Syllabus to be completed
ELECTIVES*

<table>
<thead>
<tr>
<th>CAMPUS</th>
<th>PROGRAMME</th>
<th>SEM.</th>
<th>STATUS</th>
<th>N°</th>
<th>ELECTIVES NAME</th>
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<tr>
<td>NICE</td>
<td>ED MSc F MKT</td>
<td>2</td>
<td>E</td>
<td>3943</td>
<td>Commodities</td>
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<td>NICE</td>
<td>ED MSc F MKT</td>
<td>2</td>
<td>E</td>
<td>5668</td>
<td>Bitcoin, Blockchain and Crypto-Assets</td>
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<tr>
<td>NICE</td>
<td>ED MSc F MKT</td>
<td>2</td>
<td>E</td>
<td>4507</td>
<td>Monetary Policy and Central Banks’ Watching</td>
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<tr>
<td>NICE</td>
<td>ED MSc F MKT</td>
<td>2</td>
<td>E</td>
<td>4899</td>
<td>Macroeconomy, Investments and Financial Markets</td>
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<tr>
<td>NICE</td>
<td>ED MSc F MKT</td>
<td>2</td>
<td>E</td>
<td>6310</td>
<td>Coursera Online + mentoring</td>
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<tr>
<td>NICE</td>
<td>ED MSc F MKT</td>
<td>2</td>
<td>E</td>
<td>5369</td>
<td>Factor Investing in Equity and Bond Markets</td>
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<tr>
<td>NICE</td>
<td>ED MSc F MKT</td>
<td>2</td>
<td>E</td>
<td>5745</td>
<td>Adaptive risk management</td>
</tr>
</tbody>
</table>

* A presentation will take place on Nice Campus during October 2019
20_M2_NI_FMK_S2_ELE_FIN_3943: COMMODITIES*

SEMMESTER: 2
NUMBER OF HOURS: 15
INTERNATIONAL PROGRAMME: 2 ECTS
COURSE COORDINATOR + MAIL: Konstantinos KALLIGEROS

COURSE OBJECTIVES
Commodities have obtained a dual character over the past decades: are seen increasingly as an asset class, as well as a production input and output for non-financial organizations. Interestingly, their asset class characteristics impact prices and volatility, and thus make it increasingly important that non-investors understand and manage better the business risks linked to commodities.

The goal of this course is to introduce corporate finance students to physical and paper commodity markets (industrial and precious metals, oil and distillates, energy and agriculture), and expose them to ways that non-financial institutions manage their commodity risks. We take the analyst’s point of view to look at commodity liability management solutions, corporate strategies, and real options linked to commodities.

The first part of the course, which focuses on commodity markets and participants, is descriptive. The second part, which focuses on commodity risk management, project valuation and real options, is very technical and will require students to significant work on Excel.

LEARNING OUTCOMES
After having taken this course, participants will:

- Have a broad knowledge of the main commodity markets (physical and paper)
- Understand spot and forward commodity pricing for various commodities, and how it affects corporate valuations
- Be able to synthesize hedging, financing and leasing strategies, and evaluate their efficiency in risk management and accounting
- Recognize the challenges and methods associated with valuation of projects and companies dealing with commodities
- Be able to identify and estimate the value of “real options” that occur within commodity projects

PREREQUISITES
Good understanding of finance theory, derivatives (swaps and forward contracts) and some understanding of options theory. Some work will need good Excel skills (but no VBA programming).

COURSE CONTENT
The course is divided in five 3-hour long sections. Depending on the final schedule, material may be shifted around.

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
</tr>
<tr>
<td></td>
<td>Precious metal markets</td>
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<tr>
<td></td>
<td>Industrial metal markets</td>
</tr>
<tr>
<td></td>
<td>Forward pricing for precious and industrial metals</td>
</tr>
<tr>
<td>2</td>
<td>Oil and distillate markets</td>
</tr>
<tr>
<td></td>
<td>Natural gas, electricity and agricultural markets</td>
</tr>
<tr>
<td></td>
<td>Forward pricing for precious and industrial metals</td>
</tr>
<tr>
<td>3</td>
<td>Review of the fundamentals of commodity pricing:</td>
</tr>
<tr>
<td></td>
<td>Spot and forwards prices</td>
</tr>
<tr>
<td></td>
<td>The shape of the forward curve</td>
</tr>
<tr>
<td></td>
<td>In-class exercises</td>
</tr>
<tr>
<td>4</td>
<td>Financing, hedging and liability management for non-financial institutions:</td>
</tr>
<tr>
<td></td>
<td>Reasons for hedging and the value to the firm</td>
</tr>
<tr>
<td></td>
<td>Hedging strategies</td>
</tr>
<tr>
<td></td>
<td>Risks arising from hedging</td>
</tr>
<tr>
<td></td>
<td>Commodity asset and liability reporting (e.g., hedge accounting)</td>
</tr>
</tbody>
</table>
## Valuation of commodity projects and companies

- The challenges in commodity project valuation
- Real options methods

### TEACHING & LEARNING METHODS
Lectures, group discussions and extensive analysis of case studies. Student participation is essential.

### ASSESSMENT METHODS
65% group project, to assess analysis and synthesis of a commodity hedge or real option situation (students’ choice)
35% individual exercise, to assess understanding of commodity price modelling and futures pricing

### RECOMMENDED READING
Compulsory readings will be distributed in class (presentations and academic papers)
Recommended reading: select chapters from
Deutsche Bank (2011), A user guide to commodities (online)
COURSE OBJECTIVES

10 years after Bitcoin emerged, Facebook has announced a crypto-currency called Libra that will roll out for use in 2020 and allow the platform’s billions of users across the globe to make financial transactions online. This is by far the most ambitious FinTech project launched to date. This course will help you understand the fundamentals of blockchain protocols and how cryptocurrencies could reshape finance.

LEARNING OUTCOMES

After having taken this course, participants will be able to/are expected to know or understand (knowledge-based outcomes):
- Understand blockchain protocols
- Master the cryptocurrency ecosystem, from Bitcoin to Libra

More specifically, participants should be able to (skill- and competency-based outcomes):
- Analyse crypto-assets markets and developments from a technical and financial perspective

PREREQUISITES

This course is intended to rely largely on the financial skills acquired by students over previous courses in the program. There is no coding or technical pre-requisite. Intellectual curiosity is very welcome!

COURSE CONTENT

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The fundamentals of Bitcoin (1/2)</td>
</tr>
<tr>
<td>2</td>
<td>The fundamentals of Bitcoin (2/2)</td>
</tr>
<tr>
<td>3</td>
<td>An overview of the different blockchain protocols and use cases</td>
</tr>
<tr>
<td>4</td>
<td>Ethereum and other public protocols</td>
</tr>
<tr>
<td>5</td>
<td>Focus on Libra</td>
</tr>
</tbody>
</table>

TEACHING & LEARNING METHODS

This course will be taught through lectures, with a strong emphasis on a lively dialogue between students and the lecturer. Students will form groups at the beginning of the course to work on a case study that will be presented in-class at the end of session 5.

ASSESSMENT METHODS

<table>
<thead>
<tr>
<th>ASSESSMENT TYPE</th>
<th>% OF THE TOTAL MARK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group Project</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>Final Exam</td>
<td>70</td>
<td>1.5h</td>
</tr>
</tbody>
</table>

READING

"Bitcoin: A Peer-to-Peer Cash Electronic System" by Satoshi Nakamoto
COURSE OBJECTIVES
The course aims at providing a simple theoretical framework to understand how central banks work, how they interact with the financial market and affect the real allocation of resources, and how they changed their modus operandi after the recent financial and sovereign crises.

LEARNING OUTCOMES
After having taken this course, participants will be able to/are expected to know or understand (knowledge-based outcomes):

1. understand the interactions between monetary policy and financial markets
2. understand the transmission mechanisms of monetary policy

More specifically, participants should be able to (skill- and competency-based outcomes):

3. evaluate how and why different Central Banks perform their institutional duties
4. appreciate the new monetary policy regime adopted in the Great Recession and the new tools used during the financial and sovereign crises

PREREQUISITES
none

COURSE CONTENT
<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (3 hours)</td>
<td>Monetary Theory: foundations of money demand, the role of interest-rate fluctuations and financial risk</td>
</tr>
<tr>
<td>2 (3 hours)</td>
<td>Monetary Theory: foundations of money supply, institutional features of modern Central Banks, targets and tools of monetary policy</td>
</tr>
<tr>
<td>3 (3 hours)</td>
<td>The transmission mechanisms of monetary policy: the term structure of interest rates, the exchange rate, inflation-expectations anchoring</td>
</tr>
<tr>
<td>4 (3 hours)</td>
<td>The Practice of Central Banking: Monetary policy before and after the global financial crisis (Fed, ECB, BoE), evolution of monetary policy strategy and tactics, conventional vs unconventional policies</td>
</tr>
<tr>
<td>5 (3 hours)</td>
<td>Understanding the role of monetary policy for the business cycle. Policy Paradoxes in a liquidity trap</td>
</tr>
</tbody>
</table>

TEACHING & LEARNING METHODS
in-class lectures and class discussions

ASSESSMENT METHODS

<table>
<thead>
<tr>
<th>ASSESSMENT TYPE</th>
<th>% OF THE TOTAL MARK</th>
<th>DURATION</th>
<th>LEARNING OUTCOME EVALUATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>class participation</td>
<td>20%</td>
<td>15 hours</td>
<td>1, 2</td>
</tr>
<tr>
<td>Final written exam (MC and short-essay questions)</td>
<td>80%</td>
<td>1.5 hours</td>
<td>1, 2, 3, 4</td>
</tr>
</tbody>
</table>

READING
COURSE OBJECTIVES
This is primarily an empirical course in Macroeconomics and financial markets. It specifically aims at increasing your understanding of the interaction between the Macroeconomy and the financial markets as well as its consequences on Investment in those markets. The course will draw extensively on my experience and will frequently refers to contemporaneous and past macro and/or financial cases around the world. It will show how theoretical and practical knowledge of Macroeconomy and financial markets provide ways to assess the environment and thus investment opportunities.

LEARNING OUTCOMES
On the completion of the course the participants will have a framework to analyse and contextualise macro informations and policies. Employment, trade, foreign exchange and exchange rate regimes, saving, interest rates, fiscal and monetary policy, terms of trade, capital flows, demographic trends, leverage, indebtedness of the major macro agents (households, states and corporations) ... will have been discussed and their relevance to public policies and investment decisions outlined.

They will be able to critically analyse the relationship between financial markets and government's fiscal policy, the relationship between foreign exchange markets, monetary and fiscal policy and the structure of financial markets, the different types of foreign exchange system / monetary system and their influence on capital markets. They should have a good grasp of the concept of reflexivity between financial markets and macro economic data. They will also be able to distinguish between different types of recessions and its implications for policy response and investments opportunities. Finally, in light of the empirical evidence examined through the course they will be able to evaluate critically the different financial and investment theories learned through their cursus.

PREREQUISITES
Good understanding of how an economy works

COURSE CONTENT
Details of the course content will be communicated at a later stage. However, one session will be dedicated to present what Macro Trading is; how to approach it; how to set yourself to be efficient and successful; you will be walked through the framework I use to observe, analyse and give a sense to the markets I monitor.

We will examine the following concepts necessary to grasp to invest successfully: correlation vs anticipation; terminal value vs fast crystallisation of profits; concentration of risk vs diversification; embedded optionality in a book; inclusion of orthogonal trades as a source of de-risking and/or profits; VAR vs dollar at risk and scenario analysis; risk on / risk off vs idiosyncratic risk.

There will be one or two sessions during which we will review the major macroeconomic concepts you need to understand before making macro investment decisions.

In particular we will go through the different exchange rate regimes in place around the world and their implications for credit creation, monetary policy, cross border investment flows and opportunities. The case of the Dollar, Euro, Renminbi, Singapore Dollar, Argentinian Peso and Yen amongst others will be studied in detail. We will look at the principles behind the creation of money and investment opportunities it offers. We will examine the national account and major statistical data that you will need to follow, in order to have a solid understanding of the economic environment.

One session will cover in detail the credit cycle and its associated boom and bust, and in particular it will give you a framework to analyse, contextualise and anticipate the unfolding of the credit and economic cycle hence identifying investment opportunities in bonds, credit, currencies, equites etc.
One session may be dedicated to examining issues surrounding the reflexivity, asymmetry of information, autocorrelation and the opportunities they open in the financial markets.

**TEACHING & LEARNING METHODS**

Five three hour sessions, during which we may be using Bloomberg terminals and/or slides.

**ASSESSMENT METHODS**

Students will work in teams of three and will be asked to analyse a particular situation or country. They will write a report describing the current situation (monetary, fiscal, economic, demographics), whatever relevant information they find useful to understand the situation. The use of charts, graphics and tables as a means of summarising and giving historical context to the data is highly recommended. They will be asked to draw conclusions regarding the likely direction of the economy and their perceived investment opportunities.

**READING**

Mandatory: The Economist

Recommended:
- The Financial Times
- The Wall Street Journal
20_M2_NI_FM_K_S2_FM_K_ELE_6310: COURSERA ONLINE & MENTORING **

SEMESTER: 2
NUMBER OF HOURS: 15
INTERNATIONAL PROGRAMME: 2 ECTS
COURSE COORDINATOR + MAIL: Lionel MARTELLINI

NEW COURSE - Syllabus to be completed.
COURSE OBJECTIVES
The objective of this elective course to equip students with the technical and conceptual background needed to understand and master the challenges related to factor investing in equity and bond markets. Largely drawing on the expertise developed by EDHEC-Risk Institute over the past few years, this course includes a mixture of conceptual presentation and applications.

LEARNING OUTCOMES
After having taken this course, participants will be able to/are expected to know or understand (knowledge-based outcomes):

1. Understand the shortcomings of existing equity benchmarks;
2. Understand and compare the various forms of smart beta benchmarks;
3. Understand the methods to efficiently harvest time-series and cross-sectional risk premia in fixed-income markets.

More specifically, participants should be able to (skill- and competency-based outcomes):

4. Construct efficient portfolios based on factor investing equity building blocks;
5. Construct conditional carry and flattener/steepener strategies.

PREREQUISITES
- Empirical Methods in Finance
- Asset Management
- Fixed-Income Securities
- Derivatives Pricing and Hedging

COURSE CONTENT

<table>
<thead>
<tr>
<th>SESSION</th>
<th>TOPIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture 1</td>
<td>The Alpha, (Smart) Beta and Omega of Equity Investing</td>
</tr>
<tr>
<td>Lecture 2</td>
<td>From Smart Beta 1.0 to Smart Beta 2.0</td>
</tr>
<tr>
<td>Lecture 3</td>
<td>Attributes and Factors in the Fixed-Income Space</td>
</tr>
<tr>
<td>Lecture 4</td>
<td>Smart Betas in the Fixed-Income Space (Time Series)</td>
</tr>
<tr>
<td>Lecture 5</td>
<td>Smart Betas in the Fixed-Income Space (Cross Sectional)</td>
</tr>
</tbody>
</table>

TEACHING & LEARNING METHODS
Readings, Lectures, Cases studies, Computer exercises & Portfolio simulation exercises

ASSESSMENT METHODS

<table>
<thead>
<tr>
<th>ASSESSMENT TYPE</th>
<th>% OF THE TOTAL MARK</th>
<th>DURATION</th>
<th>LEARNING OUTCOME EVALUATED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case study</td>
<td>50%</td>
<td>several weeks</td>
<td>1, 2 &amp; 4</td>
</tr>
<tr>
<td>Final exam</td>
<td>50%</td>
<td>3 hours</td>
<td>3 &amp; 5</td>
</tr>
</tbody>
</table>

READING
20_M2_NI_FM_K_S2_FMK_ELE_5745: ADAPTIVE RISK MANAGEMENT **

NUMBER OF HOURS: 15
SEMIESTER: 2
INTERNATIONAL PROGRAMME: 2 ECTS
COURSE COORDINATOR + MAIL: Markus SCHULLER

Syllabus to be updated - RESTRUCTURED.

COURSE OBJECTIVES
Adaptive markets require adaptive risk management processes. The adaptive moment turns risk management from a feedback control system into an integrated element of the investment decision process. It supports asset managers to develop or maintain a comparative advantage while staying compliant to regulatory requirements. Adapting the risk management techniques lead to a diminution of a correlation-based understanding of risk. It forces the decision maker to think in causalities. Students will also earn how to distinguish uncertainty from risk and how to apply new risk parameters in risk and compliance management. Two practical exercises will allow students to apply their lessons learned.

LEARNING OUTCOMES
After having taken this course, participants will be able to/are expected to know or understand (knowledge-based outcomes):
- Accept risk management as an exercise of qualitative and quantitative aspects
- Understand risk management as a source of comparative advantage
- Know how to assess different types of risk
- Enabled to think in causal risk factors

More specifically, participants should be able to (skill- and competency-based outcomes):
- Have the ability to do critical thinking
- Have problem solving skills.
- Know how to respond quickly to changing market regulations
- Know how to meet compliance requirements
- Understand the various regulation policies
- Being effective at dealing with pressure

COURSE CONTENT
To be updated

TEACHING & LEARNING METHODS
The course is based on in-class lectures and case studies. Students are expected to attend every class. Since the course consists of five three-hour sessions, an absence from even one class involves missing a significant portion of the course.

ASSESSMENT METHODS
To be updated

READING
Lecture Slides
Lecture slides are the most important course material and will be available at the beginning of each course session. The book listed below provide some references for the topics covered in the course:
- An Introduction to Trading in the Financial Markets: Global Markets, Risk, Compliance, and Regulation by R.Tee Williams
- Ethics and the Global Financial Crisis: Why Incompetence Is Worse than Greed by De Bruin
- 2017 Best Practice Guidelines for the EU Code of Conduct on Data Centre Energy Efficiency, Publisher: Publications Office of the European Union