BOOK
Master Level 2
MSc in Financial Markets
FINANCIAL ECONOMICS
ACADEMIC YEAR 2016-2017

MASTER 2 FINANCIAL ECONOMICS - MSc in FINANCIAL MARKETS

CAMPUS	PROGRAMME		SEM.	STATUS	N°	COURSE NAME	Hours per Student	ECTS for MiM Student	ECTS for MSc Student	INCOMING DD	ECTS for INCOMING
NICE	ED	MSc F MKT	S1	SEM	4374	Take ownership of your academic environment	2		-	-	-
NICE	ED	MSc F MKT	S1	SEM	4375	Preparing yourself for learning with cases	4		-	-	-
NICE	ED	MSc F MKT	S1	SEM	2742	Intercultural Seminar	9	1	1	1	1
NICE	ED	MSc F MKT	S1	SEM	3659	Research Seminar (for Student Research Team ONLY)	30	-	-		
NICE	ED	MSc F MKT	S1	SEM	1059	Advanced EXCEL and VBA Programming	**15**	1,5	1,5	1,5	1,5
NICE	ED	MSc F MKT	S1	SEM	1061	MATLAB	**15**	1,5	1,5	1,5	1,5
NICE	ED	MSc F MKT	S1	CC	799	Advanced Financial Theory	**30**	3,5	3,5	3,5	3,5
NICE	ED	MSc F MKT	S1	CC	797	Empirical Methods in Finance	**30**	3,5	3,5	3,5	3,5
NICE	ED	MSc F MKT	S1	CC	2764	Advanced Fixed Income Securities	**30**	4	4	4	4
NICE	ED	MSc F MKT	S1	CC	848	Advanced Derivatives	**30**	4	4	4	4
NICE	ED	MSc F MKT	S1	AM	761	Asset Management	**30**	4	4	4	4
						OR					
NICE	ED	MSc F MKT	S1	T	759	Fundamentals of Trading					
NICE	ED	MSc F MKT	S1	CC	173	Values, Cooperation and Trust (only for incoming)	30				7
NICE	ED	MSc F MKT	S1	CC	1351	French course (for visiting students only)	30			0	5
NICE	ED	MSc F MKT	S1	MP	88	Master Project	**50**	5	5	5	
NICE	ED	MSc F MKT	S1	CC	1058	TI&CD	**20**	2	2	2	
							250	**30**	**30**	**30**	**35**
SEMESTER 2 - Major in Asset Management							**250**	**30**	**45**	**30**	**35**
NICE	ED	MSc F MKT	S2	SEM	3667	Research Seminar (for Student Research Team ONLY)	15	4	4		
NICE	ED	MSc F MKT	S2	SEM	3948	Regulation Seminar	**15**	1	1	1	1
NICE	ED	MSc F MKT	S2	CC	859	Enterprise Risk Management	**30**	4	4	4	4
NICE	ED	MSc F MKT	S2	CC	2765	Treasury Risk Management	**15**	2	2	2	2
NICE	ED	MSc F MKT	S2	AM	1161	Investment Solutions	**30**	4	4	4	4
NICE	ED	MSc F MKT	S2	AM	3673	Tactical Asset Allocation	**18**	2	2	2	2
NICE	ED	MSc F MKT	S2	AM	1063	Alternative Investments	**27**	4	4	4	4
NICE	ED	MSc F MKT	S2	SEM	1104	Ethics and Corporate Governance	**15**	2	2	2	2
NICE	ED	MSc F MKT	S2	E	-	Elective 1*	**15**	2	2	2	2
NICE	ED	MSc F MKT	S2	E	-	Elective 2*	**15**	2	2	2	2
NICE	ED	MSc F MKT	S2	MP	1166	Master Project	**50**	5	5	5	
NICE	ED	MSc F MKT	S2	CC	1062	TI&CD	**20**	2	2	2	
NICE	ED	MSc F MKT	S2	CC	2368	Researching France (For visiting students only)	30				7
NICE	ED	MSc F MKT	S2	CC	1352	French course (for visiting students only)	30				5
NICE	ED	MSc F MKT	S2	INT	1062	Internhip / Work Experience (only for IC)	480		15		
SEMESTER 2 - Major in Trading							**250**	**30**	**45**	**30**	**35**
NICE	ED	MSc F MKT	S2	SEM	3667	Research Seminar (for Student Research Team ONLY)	15	4	4		
NICE	ED	MSc F MKT	S2	SEM	3948	Regulation Seminar	**15**	1	1	1	1
NICE	ED	MSc F MKT	S2	CC	859	Enterprise Risk Management	**30**	4	4	4	4
NICE	ED	MSc F MKT	S2	CC	2767	Treasury Risk Management	**15**	2	2	2	2
NICE	ED	MSc F MKT	S2	T	842	Market Risk Measurement	**30**	4	4	4	4
NICE	ED	MSc F MKT	S2	T	886	Trading in Practice	**30**	4	4	4	4
NICE	ED	MSc F MKT	S2	SEM	1104	Ethics and Corporate Governance	**15**	2	2	2	2
NICE	ED	MSc F MKT	S2	E	-	Elective 1*	**15**	2	2	2	2
NICE	ED	MSc F MKT	S2	E	-	Elective 2*	**15**	2	2	2	2
NICE	ED	MSc F MKT	S2	E	-	Elective 3	**15**	2	2	2	2
NICE	ED	MSc F MKT	S2	MP	1106	Master Project	**50**	5	5	5	
NICE	ED	MSc F MKT	S2	CC	1088	TI&CD	**20**	2	2	2	
NICE	ED	MSc F MKT	S2	CC	2368	Researching France (For visiting students only)	30				7
NICE	ED	MSc F MKT	S2	CC	1352	French course (for visiting students only)	30				5
NICE	ED	MSc F MKT	S2	INT	1088	Internhip / Work Experience (only for IC)	480		15		
							500	**60**	**75**	**60**	**70**

** replaced by Research Seminar for Student Research Team*

CAMPUS	PROGRAMME		SEM.	STATUS	N°	ELECTIVES NAME
NICE	ED	MSc F MKT	S2	E	747	Continuous time finance
NICE	ED	MSc F MKT	S2	E	744	C++ for finance
NICE	ED	MSc F MKT	S2	E	746	Commodities
NICE	ED	MSc F MKT	S2	E	4507	Monetary Policy and Central Banks' Watching
NICE	ED	MSc F MKT	S2	E	4790	Big Data Applications for Financial Markets
NICE	ED	MSc F MKT	S2	E	4899	Macroeconomy, Investments and Financial Markets

17_M2_NI_FMK_S1_SEM_4374: TAKE OWNERSHIP OF YOUR ACADEMIC ENVIRONMENT

NUMBER OF HOURS: 2
SEMESTER 1
INTERNATIONAL PROGRAMME - 0 ECTS
COURSE COORDINATOR: Jerémie LANIEZ

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:

1. Windows and the French keyboard
2. Blackboard and Aurion
3. Excel's basics
4. Matlab's basics

COURSE CONTENT

Session	TOPIC	CONTENT	PREPARATORY WORK
1	Windows and the French keyboard	French keyboard tricks and Windows file structure.	
2	Blackboard	Review of the services on Blackboard, how to send assignments, settings...	
3	Aurion	Logging in, review, settings, downloads...	
4	Excel & Microsoft Office	Basics of the software, useful information, language settings.	
5	Matlab	Getting started with Matlab & what you can do, language settings.	

TEACHING & LEARNING METHODS

The sessions will be carried out in a computer room.

17_M2_NI_FMK_S1_SEM_4375: PREPARING YOURSELF FOR LEARNING WITH CASES

NUMBER OF HOURS: 4
SEMESTER 1
INTERNATIONAL PROGRAMME - 0 ECTS
COURSE COORDINATOR: Penny JARVIS

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:

1. Provide an overview of the theory of case studies
2. Prepare students so that they perform to their highest ability during case study projects
3. 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

The Case Study

- Introduction to the course 10 mins
- Introduction to the Case Study Method 30 mins
- Critical Reasoning 20 mins
- Introduction to Case Study 1 20 mins
- The Case Study 1 Group Work 30 mins
- The Case Study 1 Plenary Session 30 mins
- The Case Study 1 Review 20 mins
- Case Study Writing Up 20 mins
- Case Study 2 (Recruitment) 30 mins
- Case Study 2 Presentation 30 mins

TEACHING & LEARNING METHODS

Teaching Method- Action Learning (theory, practice , then feedback)

ASSESSMENT METHODS

None

READINGS

HBR class notes on Blackboard

17_M2_NI_FMK_S1_SEM_2742: INTERCULTURAL SEMINAR

NUMBER OF HOURS: 9
SEMESTER 1
INTERNATIONAL PROGRAMME - 1 ECTS
COURSE COORDINATOR: 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 thinkers of intercultural communication (Hall & Hofstede)
- 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:

- Use effective “code-switching” strategies appropriate for international assignments and multicultural interactions
- Adapt personal communication habits to appropriate international norms
- Use theoretical models of culture to recognize, anticipate and deal with cultural differences with empath

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 in the workplace/The Meaning Market Simulation

Reading Chi –yue Chiu, Language and Culture, Online readings in Psychology and Culture, 4(2), http://dx.doi.org/10.9707/2307-0919.1098; See also the “Implicit Assumptions” online self-test available at Harvard Univesity, https://implicit.harvard.edu.

Session 2 - Explicit categories of culture at work: The Randomia Balloon Factory Simulation

Reading Edward T. Hall (1960) *The Silent Language*, Harvard Business Review.

Session 3 - Implicit categories of culture: Diversity,

Reading: Dimensionalizing Cultures: The Hofstede Model in Context. *Online Readings in Psychology and culture* , 2, (1) http://dx.doi.org/10.9707.0919.1014

TEACHING & LEARNING METHODS

Seminar style interaction, games and self-discovery exercises

ASSESSMENT METHODS

Final Quiz 100% (one hour)

Bonus and penalty points may be added for exceptional performance during the simulations or absences from class.

READINGS

Minkov, M. (2013) Cross-Cultural Analysis: The Science and Art of Comparing the World's Modern Societies and Their Cultures, Los Angeles, Sage.

17_M2_NI_FMK_S1_SEM_3659: RESEARCH SEMINAR (FOR STUDENT RESEARCH TEAM ONLY)

NUMBER OF HOURS: 30
SEMESTER 1
INTERNATIONAL PROGRAMME - 0 ECTS
COURSE COORDINATOR: Fabrice RIVA

COURSE OBJECTIVES

This course is open to students selected in the Student Research Team where they will be supervised in a challenging research undertake. The aim of this hands-on “learning by doing” course is to teach students how to conduct rigorous, original empirical research in finance. We will focus on the following skills:

- How to identify important, timely, and topical research questions
- How to review previous literature on this issue
- How to structure, organize, and present the report
- How to find and collect the necessary data
- How to design empirical tests that are relevant to the research question.

LEARNING OUTCOMES

After having taken this course participants will be able to:

- Identify research questions that: are timelycreate novel insights relative to existing literatureare relevant for business and public policy
- Create appropriate empirical designs to answer research questions. This involves Developing testable hypothesesIdentifying an appropriate data setChoosing proper methodologiesImplementing statistical testsCorrectly interpreting the results.
- Write a research report and make a research presentation that follows accepted standards in the financial analysis.

COURSE CONTENT

The first 21 hours of classroom instruction and about 6 hours of student presentations will take place in fall 2016. The remaining hours will take place in winter 2017. In this second part of the seminar, classes will take place on a monthly basis in smaller but more focused groups so as to favour interactions. We will discuss issues related to the research question and literature, the methodology and data, the interpretation of the results, the way the final paper should be structured, among others. We will also hold individual discussions as needed.

Topic N°	Course content
FALL SEMESTER	
1	Introduction to the format and process of this course Introduction to Research in Finance • How to identify a research question • Key elements of research in finance. • Identify appropriate methodologies. • Methods of problem solving. • Analyzing existing literature

	• Structuring and writing a research paper • How to make a research presentation.
2	Databases available at EDHEC and other information • Sources of information and data. • Common problems, e.g. survivorship bias (e.g., Hedge fund data), cosmetic biases due to ex post revisions (e.g., IBES) • Other common problems with data. Date import, cleaning and formatting using Excel and VBA
3	Introduction to statistical softwares • R • Stata
4	Application #1: Diff-in-diffs • Diff-in-diff methodology • Hands-on: replication of Card and Krueger (AER, 1994)
5	Application #2: Asset pricing tests • Asset pricing test methodologies • Hands-on: Fama-French 3-factor model
6	Application #3: Event studies (part I) • Event study methodology: layout, return-generating processes, test statistics
7	Application #3: Event studies (Part II) • Hands-on: market reaction to dividend announcements

TEACHING & LEARNING METHODS

This course involves a variety of different instructional methods. In the beginning, there will be several lectures where we will discuss the basics of financial research from identifying a topic to interpreting the results. Then we will present standard financial databases available at EDHEC. Next, techniques will be applied to actual data as published empirical studies will be replicated in class. Students will have to present their thesis' research question, the literature it fits in, necessary data and required methodology.

ASSESSMENT METHODS

This course will be graded on a pass/fail scale. To pass the course, active participation in class is required and students will be asked to replicate an empirical study as part of their homeworks. Students will also have to present a brief talk on three issues related to their thesis: the research question, the literature, data requirements for replication, and methodological/statistical methods required for replication. To obtain a passing grade for the course students should:

1. turn in presentation slides by email **before** the presentation, covering each of the three areas (topic, data, methods)
2. demonstrate competency when conducting their own presentation
3. attend the other students' presentations.

17_M2_NI_FMK_S1_SEM_I&T_1059: ADVANCED EXCEL AND VBA PROGRAMMING

NUMBER OF HOURS: 15
SEMESTER 1
INTERNATIONAL PROGRAMME - 1.5 ECTS
COURSE COORDINATOR: 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:

- Use Excel efficiently, productively and safely
- Solve and implement various financial problems in Excel and VBA
- Build a personal set of useful functions for use in specific projects
- Develop your own classes in VBA

COURSE CONTENT

Lesson n°	Course contents	Applications and case studies
1	Excel worksheet functions and tools recap • Statistical, date and text functions • Lookups • Pivot Tables • Goal seek and Excel Solver	Case study 1: An examination of the Super Bowl Stock Market Predictor
2 and 3	Excel VBA programming • Using the macro recorder • Data types • Ranges • Subroutine and function procedures • Looping and flow control • Arrays • Matrix functions • Code optimisation issues • Solver in VBA	Applications: • Kernel density estimation • Option pricing with Black-Scholes • Option pricing in trees • Implied volatility
4	Simulation in VBA • Generating random numbers • Simulating trajectories	Application: Option pricing with Monte-Carlo Case Study 2:

	• Real world vs risk neutral world simulations	Static hedging of barrier options
5	More advanced VBA • Object oriented programming • Event programming • Error handling	Application: Building a class for options

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

Student evaluation is based on a take-home assignment (100%) which will be posted on the BlackBoard. The assignments should be completed by each student individually. Any copying will result in a score of zero.

READINGS

Those textbooks are not mandatory but may prove useful

- Jelen, B. and T. Syrstad (2014) *VBA and macros: Microsoft Excel 2010*, Que Publishing, Indianapolis, Indiana
- Walkenbach, J. (2013) Excel VBA programming for dummies, John Wiley & Sons, Hoboken , New Jersey

For case studies:

- Krueger, T. and W. Kennedy (1990) “An examination of the Super Bowl Stock Market Predictor”, *Journal of Finance*, vol. 44, pp. 691-697.
- Derman, E., Ergener, D. and I. Kani (1994), “Static options replication”, *Goldman Sachs Quantitative Research Notes*.

17_M2_NI_FMK_S1_SEM_FIN_1061: MATLAB

NUMBER OF HOURS: 15
SEMESTER 1
INTERNATIONAL PROGRAMME - 1.5 ECTS
COURSE COORDINATOR: Ian HUNT

COURSE OBJECTIVES

MATLAB is a powerful, but easy-to-learn, programming language that is widely used for financial applications, in both academia and the finance industry. The first objective of this course is to prepare you for using MATLAB in other EDHEC courses. On completing the course, you will also be able to confidently conduct financial research with MATLAB on your own and at work.

The course focuses on how to use MATLAB to manipulate, analyse and summarise matrices of financial data. The applications examined include a wide variety of popular financial models and techniques. Several advanced extensions to these models are also explained in detail.

LEARNING OUTCOMES

This course will enable you to:

1. Import, manipulate and analyse matrices of financial data, in particular time series of prices and returns;
2. Write your own MATLAB functions and scripts to perform advanced tasks, such as price process simulation;
3. Confidently work with and build upon existing MATLAB code and routines;
4. Turn advanced financial models found in textbooks, other EDHEC courses and journal papers, into MATLAB code; and
5. Report your analysis results in the form of tables and charts.

PREREQUISITES

No prior programming skills are required for this course. Basic knowledge of matrix algebra and statistics is assumed; but for those that need it, useful references and additional help on these topics will be provided in class.

COURSE CONTENT

There are two components to this course: pure MATLAB programming and using MATLAB for financial applications.

In terms of MATLAB programming the content covered includes: all the basics of the environment; file structures; working with matrices; program control; random number generation; relational operations; writing and using functions; optimization and general script building.

In terms of applications the course includes: the proper calculation of financial returns; statistical summarization and related testing; linear regression; optimization of general objective functions; optimisation of efficient portfolios; asset price process simulation and option valuation.

TEACHING & LEARNING METHODS

Each of the four sessions in this course are interactive and have two components. First, there is a lecture component in which we work through the notes, with live examples of code being projected for everyone to follow. Secondly, there is time to explore your own examples, based on the code from the notes (and assignment hints) and to ask questions about issues as they arise.

There are two assignments. The first is due before the last two sessions and covers the basics of MATLAB. This must be completed by each student. The second assignment will be due several weeks after the last session and covers the financial applications and models that we discuss. The second assignment can be done alone or in groups of two.

ASSESSMENT METHODS

The assignments each comprise 50% of the course grade. There is no exam. Details of the assignments will be provided in class.

READINGS

The lecture notes provided are comprehensive for the course. But there will be several book references provided in class, which explain certain programming methods that are not required for this course (for example, object orientated programming).

The financial applications in this course are mostly drawn from Campbell, Lo and MacKinlay, "The Econometrics of Financial Markets", Princeton. Page references to this classic graduate textbook will be provided in class, but reading it is not required.

17_M2_NI_FMK_S1_CCO_FIN_799: ADVANCED FINANCIAL THEORY

NUMBER OF HOURS: 30
SEMESTER 1
INTERNATIONAL PROGRAMME - 3.5 ECTS
COURSE COORDINATOR: Laurent CALVET

COURSE OBJECTIVES

This is an **advanced** course in modern Finance Theory. The aim of the course is to provide students with essential theoretical foundations for financial decision making. The focus is on asset pricing theory and the objective is to provide the student with a perspective on the state of the art answers to two basic questions: i) how do/should we measure risk? and ii) how do/should we measure risk reward? Equilibrium asset pricing will be covered and related to linear Arbitrage Asset Pricing theory.

LEARNING OUTCOMES

Students will learn about decision making under uncertainty with a focus on financial decision making as well as the outcome of interacting people on financial markets. Beyond the coverage of recent literature, students will be trained to successive step for building an asset pricing model. Critical thinking will be strongly encouraged by foster ng market participation. Particular focus will be on the use of acquired concepts to interpret, analyze and solve real finance problems.

PREREQUISITES

Foundation of Finance, Introductory courses in Probability and Statistics.

COURSE CONTENT

Lecture 1: Introduction

Lecture 2: Rational Choice under Uncertainty

- Preferences' representation,
- Measuring risk aversion.

Lecture 3: Portfolio Choice Theory

- Risk aversion and risk exposure,
- Optimal diversification,
- Economic gain from diversification,
- Accounting for stock and bond returns' predictability

Lecture 4: Market Equilibrium

- Market Clearing Conditions,
- Euler Equations,
- Pricing Kernels and Stochastic Discount Factors (SDFs),
- Consumption CAPM and extensions.

Lecture 5: Properties of SDFs

- Bounds on SDFs' moments,
- Spanned and unspanned risks.

Lecture 6: Linear Representation of SDFs

- Factors' models,
- Interpreting Factors' models,
- Equilibrium vs. APT.

Lecture 7: Bad beta and good beta

- Decomposing systematic risk,
- Cash flow and discount rate risk.

Lecture 8: Macroeconomic uncertainty and Asset Prices

- Volatility and the cross section of returns,
- Volatility betas.

TEACHING & LEARNING METHODS

Ten 3-hour sessions that typically involves a mix of lectures and class work. Two homework to be done by groups to develop written communication as well as teamwork.

ASSESSMENT METHODS

Assessment consists of a standard exam paper (75% of the overall mark, open book) and an assignment (25% of the overall mark).

READINGS

Main textbook:

- Copeland, T., F.Weston and K. Shastri, Financial Theory and Corporate Policy, 4th edition, 2013.
- Additional Reference to recent books and articles will be provided during the lecture.

17_M2_NI_FMK_S1_CCO_FIN_797: EMPIRICAL METHODS IN FINANCE

NUMBER OF HOURS: 30
SEMESTER 1
INTERNATIONAL PROGRAMME - 3.5 ECTS
COURSE COORDINATOR: Florian PELGRIN & Ian HUNT, for the TD

COURSE OBJECTIVES

Recent years have seen a significant growth in the use of quantitative methods in financial markets. The purpose of the module is to offer an overview of econometrics tools widely used in empirical finance, investment banking and asset management. A strong emphasis is placed on practical applications involving extented use of Matlab classes.

LEARNING OUTCOMES

After having taken this course participants will be able to master the following topics:

- Understand econometric methods suitable for testing empirically financial theories and hypotheses
- Apply these methods in testing and forecasting applications

PREREQUISITES

Probability distributions, hypothesis testing, confidence intervals, type I and type II errors, critical values, size and power are concepts assumed to be well understood by students. Moreover, concepts of linear algebra (matrices), calculus and financial mathematics (such as time value of money, portfolio return and variance calculations etc) should also be mastered by the participants.

COURSE CONTENT

As time permits, we will attempt to follow the following schedule:

1. **Regression: Equity pricing with factor models**

- Correlation and Simple Regression Analysis
- Multiple Regression Analysis
- The Capital Asset Pricing Model (CAPM)
- Multifactor models: The Fama & French Model

1. **Autoregression and forecasting**

- Autocorrelation
- Stationarity
- AR, MA and ARMA models
- Forecasting

1. **Cointegration and error correction**

- Cointegration: Theory and tests
- Error correction models: Theory and tests
- Applications

1. **GARCH: Volatility modeling**

- The standard ARCH model
- The GARCH model and its extensions: T-GARCH, E-GARCH, GARCH in mean

Note : In addition to the topics above, tutorials will also cover applications on option pricing.

TEACHING & LEARNING METHODS

18 hours of lectures, 12 hours of tutorials. Readings (indicated chapters on books and eventual extra material provided throughout the course), exercises and realistic applications.

ASSESSMENT METHODS

There will be **tutorial-based exercises** during the teaching period, and a **written examination** at the end of the course that will be weighted as **25%** and **75%**, respectively. Tutorials are highly empirical, and the students will have to apply their theoretical and quantitative skills to investigate a given problem in finance. In solving tutorials-based exercises students should demonstrate a sufficient understanding of the issues analyzed during the course.

READINGS

There are several good books presenting the topics above. Unfortunately, we are not aware of a single one presenting all topics adequately. Chapters were suggested as readings from the following books:

- Introduction to Econometrics (fourth edition), Dougherty, Christopher, Oxford University Press (compulsory for topics 1 and 2, recommended for topics 3 and 4).
- Introductory Econometrics for Finance (third edition). Brooks, Chris, Cambridge University Press (compulsory for topic 3 and 4, recommended for topics 1 and 2)
- The Econometrics of Financial Markets. Campbell, Lo and MacKinlay. Princeton University Press. (recommended)

17_M2_NI_FMK_S1_CCO_FIN_2764: ADVANCED FIXED INCOME SECURITIES

NUMBER OF HOURS: 30
SEMESTER 1
INTERNATIONAL PROGRAMME - 4 ECTS
COURSE COORDINATOR: Riccardo REBONATO

COURSE OBJECTIVES

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 8: The LIBOR market.** The links between the government and the LIBOR swap market. The equilibrium swap rate. Interest Rate Swaps, FRAs, futures. Valuing a swap (new and aged). Hedging using Eurodollar futures. Inflation swaps. Asset swaps.
- **Lecture 9: Evaluating the optionality embedded in bonds.** Reasons for issuing callable and puttable bonds. Why the "yield-to-first" and "yield-to-worst" do not work. Evaluation of the embedded options (stand-alone and using a no-arbitrage model). The option value of the near-zero bound. The "default option" of government bonds – with applications to European peripheral bonds.
- **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 (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 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.

17_M2_NI_FMK_S1_CCO_FIN_848: ADVANCED DERIVATIVES

NUMBER OF HOURS: 30
SEMESTER 1
INTERNATIONAL PROGRAMME - 4 ECTS
COURSE COORDINATOR: Dominic O'KANE

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, Digitals, 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%)

READINGS

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

17_M2_NI_FMK_S1_MAM_761: ASSET MANAGEMENT

NUMBER OF HOURS: 30
SEMESTER 1
INTERNATIONAL PROGRAMME - 4 ECTS
COURSE COORDINATOR: Philippe MALAISE et Marie LAMBERT

COURSE OBJECTIVES

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.

Drawing on the expertise developed at the Edhec Risk Institute, 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 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.

More specifically, the course first focuses on the technical challenges involved in portfolio optimization with specific emphasis on the need for enhanced estimates of risk and expected returns. After this presentation of state-of-the-art techniques for optimal beta management, we present several key extensions of portfolio selection methods, which are particularly suitable in the context of tail risk management. The course then goes on to cover an overview of recent academic research and practical industry examples of these latest techniques used in the design of investors' portfolios.

Short application cases and excel-based illustrations are systematically used throughout the course to help students synthesise 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;
- Implement alternative portfolio models integrating non-normality risks, parameter uncertainty, and realistic risk preferences;
- Use Bayesian analysis in portfolio construction;
- Construct portfolios including alternative asset classes and investment styles;
- Define statistical benchmarks and measure their relative performance;
- Design dynamic risk-controlled strategies that are aimed at improving investment efficiency.

PREREQUISITES

- EXCEL and VBA
- Financial Theory
- Financial Modelling
- Statistics

COURSE CONTENT

Lesson N°	Course content	Requirements

1	**Introduction: Paradigm Shifts in the Asset Management Industry — From Alpha Management to Beta Management & from Asset Management to Risk and Asset Management (Lecture 1)** Asset management is (should be) the art and science of designing investment solutions that match investors' preferences. 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. 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. More generally, the whole asset management industry is witnessing a shift in terms of perceived added-value, and there is an emerging consensus regarding the need to move away from a paradigm focusing purely on security selection to put the emphasis back on risk management and asset allocation decisions. 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 portfolio construction process. • Lectures 2 to 5 will be dedicated to the optimal design of core portfolios through sophisticated beta management techniques. • Lecture 6 will focus on advanced techniques for the construction of actively-managed portfolios that can be used as satellite portfolios. • Lectures 7, 8 and 9 will put the pieces together, and will extend the core-satellite approach to a dynamic setting allowing for the optimal management of the investors' risk budgets.	
From Modern Portfolio Theory to Asset Management Practice: Towards Optimal Risk Diversification (Lectures 2 to 5) 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 sections is on bridging the gap between portfolio theory and portfolio construction by showing how to generate enhanced parameter estimates so as to improve the quality of the portfolio optimization outputs (optimal portfolio weights).		
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.	
3	**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.	
4 5	**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 focus of this section is on improving portfolio construction in a non-Markowitz world, by accounting for more general risk measures and by relaxing the assumption of a static allocation decision. • Measures, statistical significance, and persistence 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 hedge fund selection. • Portfolio optimization with higher moments: how to incorporate deviations from normality in portfolio construction; partial moments as behaviour-motivated measures of risks; defining and measuring partial moments; VaR and beyond VaR (Conditional VaR); utility- and risk-based scenario optimisation; scenario generation. **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.	
From Asset Management to Risk and Asset Management (Lectures 6 to 9) While a substantial share of institutional assets is now managed passively, active portfolio decisions still account for the largest fraction of money under management, and this even if empirical evidence suggests that few fund managers and multi-managers are able to outperform their statistical benchmarks in a persistent manner. The goal of this second half of the course is to describe the modern approach to portfolio construction, known as core-satellite investing, that mixes alpha and beta management in an efficient manner.		
6	**Alpha Management** • **Passive Management vs. Active Management** This section goes over the various ways to outperform passive replication strategies and then shows how to blend active managers employing different strategies in order to deliver a top performing portfolio. It also analyses the tools that can identify the sources that contribute to the portfolio return. • **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.	
7	**Putting the Pieces Together (Lectures 7, 8 & 9)** The global financial crisis has devastated the vast majority of equity portfolios (and risky asset portfolios as a whole) while the decline in interest rates has been a godsend for Treasury bond holders. These circumstances have highlighted the benefits of risk-controlled strategies that allow investors to implement a downside risk protection or rebalance their multi-class portfolio in response to adverse events so as to preserve their capital. This section describes a wide set of risk insurance strategies (from the forerunner -Constant Proportion Portfolio Insurance- and its extensions to more sophisticated strategies such as dynamic core-satellite strategies based on time-varying multipliers) that aim at achieving the highest possible upside potential while imposing stringent risk measures in order to limit the portfolio drawdown and avoid any relative underperformance.	
8		
9		

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 real case studies that introduce practical examples of a sophisticated portfolio management process, and involve a direct numerical implementation of the methods presented and explained in this course.

READINGS

Textbooks:

- Portfolio construction and risk budgeting (3rd edition), Scherer, B., 2007.
- Risk and asset allocation, Meucci, A., Springer Verlag, 2005.

Required Readings:

- Revisiting Core-Satellite Investing – A Dynamic Model of Relative Risk Management, Amenc, Malaise, and Martellini, The Journal of Portfolio Management (2004)
- From Delivering to Packaging of Alpha, Amenc, Malaise, and Martellini, The Journal of Portfolio Management (2006)
- Advances in Dynamic Risk Budgeting: Efficient Control of Absolute and Relative Risks, Daniel Mantilla-Garcia (2012) www.koris-intl.com
- Value at Risk and Expected Stock Returns, Bali, Turan G., and Nusret Cakici, Financial Analysts Journal, 60(2), 57-73 (2004)
- Efficient Indexation: An Alternative to Cap-Weighted Indices, Noël Amenc, Lionel Martellini, Felix Goltz, Patrice Retkowsky (An EDHEC-Risk Institute Publication – January 2010) www.edhec-risk.com
- Improved estimates of higher-order co-moments and implications for portfolio selection, Martellini, L., and V. Ziemann, Edhec Risk Institute (2010) www.edhec-risk.com
- The Efficient Market Inefficiency of Capitalization-weighted Stock Portfolios, Haugen, R. A., and Baker N. L., Journal of Portfolio Management (1991)

17_M2_NI_FMK_S1_MTM_759: FUNDAMENTALS OF TRADING

NUMBER OF HOURS: 30
SEMESTER 1
INTERNATIONAL PROGRAMME - 4 ECTS
COURSE COORDINATOR: Fabrice RIVA

COURSE OBJECTIVES

In many courses, we assume that securities can be issued, bought, and sold without any real effort or expense. Perfectly liquid markets would allow people to fund long-term investments while keeping the opportunity to use that wealth whenever needed. The reality is that trading securities has more costs than just brokerage commissions and these frictions impact the financial industry as a whole.

Security trading is complex enough to justify devoting an entire course to it and we will still cover only a small portion of the relevant issues. This field of study is known as “market microstructure.” This course is about the main issues relating to securities trading and securities markets. We will discuss why and how people trade, and the operation, structure, and regulation of securities markets.

LEARNING OUTCOMES

After having taken this course participants will be able to:

- understand how security trading works
- analyse the risks and benefits of different order types
- measure market liquidity
- apprehend the relation existing between the price dynamics and information

COURSE CONTENT

- Introduction. Why should we care?
- Sessions 1 – 2. Market structures and order properties
- Session 3. Group project presentation part 1
- Sessions 4 – 5. Modelling the trading process
- Sessions 6 – 8. Empirical aspects of microstructure
- Sessions 9. Current topics: High Frequency Trading, ETFs
- Session 10. Group project presentation part 2

TEACHING & LEARNING METHODS

This course will alternate lectures, exercises and in-class empirical sessions. Students will have to prepare and present a talk on issues related to trading costs in relation with underlying market characteristics (organization principles, order types, etc.). Detailed instructions, groups and issues to be discussed will be posted on the blackboard.

ASSESSMENT METHODS

Grading

- in-class empirical sessions participation (15%)
- group project (35%)
- final exam (50%)

READINGS

No textbook is required but parts of the material build on the following books:

- Foucault, Pagano and Röell (2013) *Market liquidity. Theory, Evidence and Policy*, Oxford University Press
- Harris (2003) *Trading and Exchanges. Market Microstructure for Practitioners,* Oxford University Press
- Hasbrouck (2007) *Empirical Market Microstructure*, Oxford University Press

17_M2_NI_FMK_S1_CCO_CCS_INCOMNODD_173: VALUES, COOPERATION AND TRUST

NUMBER OF HOURS: 30
SEMESTER 1
INTERNATIONAL PROGRAMME - 7 ECTS
COURSE COORDINATOR: Anne E.WITTE, PhD

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 political frameworks, it is possible to evaluate critically those that respond well or less well to competition and capitalism. Prosperity is linked to core cultural values, path dependency, the choice to develop human and cultural capital combined with environmental opportunities or lack of them. This is an interdisciplinary course drawing from economic history, anthropology, and comparative political science.

LEARNING OUTCOMES

After having taken this course participants will be able to:

- Identify the moral, historical and cultural factors impacting economies over history
- Discuss the major theories regarding values, cooperation and trust as forces of economic systems
- Evaluate the impact of public and private institutions (education, courts, sports, religion) on economic outcomes and the ability to generate human, cultural and social capital
- 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

SESSION 1 - What are Values?

Reading: Hills, M. D. (2002). Kluckhohn and Strodtbeck's Values Orientation Theory. *Online Readings inPsychology and Culture, 4*(4). http://dx.doi.org/10.9707/2307-0919.1040

SESSION 2 Measuring Values - types of inquiries and categories

Reading : . : S. Schwartz (2010) An Overview of the Schwartz Theory of Basic Values, *Online Readings in Psychology and Culture*, *2*(1). http://dx.doi.org/10.9707/2307-0919.1116

SESSION 3 What is modernization? What is path dependency?

reading Inglehart, R. & Baker, W. (2000) Modernization, Cultural Change and the Persistance of Traditional Values, *American Sociological Review*, 65,1, pp. 19-51.

SESSION 4 Comparative Moralities

Reading: Sunar, D. (2002). Psychology of Morality. *Online Readings in Psychology and Culture, 2*(1). http://dx.doi.org/10.9707/2307-0919.1012

SESSION 5 What is Trust?

Reading : Welzel, Ch. & Delhey, J. (2015) Generalizing Trust: The Benign Force of Emancipation, Journal of Cross Cutlural Psychology, 46(7), 875-896.

SESSION 6 Types of Capital

Reading Hofstede, G. (2011) Dimensionalizing Cultures: The Hofstede Model in Context. *Online Readings in Psychology and culture* , 2, (1) http://dx.doi.org/10.9707-0919.1014. (open access)

SESSION 7 A Critical Perspective on the work of Geert Hofstede

Reading Rand, D.G., Yoeli, E., Hoffman, M. (2014)-Harnessing Reciprocity to Promote Cooperation and the Provisioning of Public Goods, Behavioral and Brian Sciences, 2014, Vol. 1(1) 263–269

SESSION 8 – Identity Economics

Reading Kahnemann, D. & Deaton, A.(2010 High income improves evaluation of life but not emotional well-being, PNAS | September 21, 2010 | vol. 107 | no. 38 | 16489–16493/ www.pnas.org/cgi/doi/10.1073/pnas.1011492107

SESSION 9 – Growth and Human Development

SESSION 10 - Evaluations

TEACHING & LEARNING METHODS

Lectures, student study cohorts, Socratic dialogue, reading.

ASSESSMENT METHODS

- Participation 20%
- Final Oral 40%
- Speed Talk 20%
- Final Exam 20%

READINGS

- Akerlof, G.A. and M.E. Kranton (2010) *Identity Economics: How our identities shape our work, wages, and well-being*, Princeton University Press.
- Akerlof, G. & Shiller, R. (2009) *Animal Spirits: How Human Psychology Drives the Economy*, Princeton University Press
- Axelrod, Robert (1984) *The Evolution of Cooperation*, New York Basic Books.
- Diamond, Jared (2005), *Collapse: How Societies Choose to Fail or Succeed*, New York: Viking.
- Hofstede, G. (2011) Dimensionalizing Cultures: The Hofstede Model in Context. *Online Readings in Psychology and culture*

, 2, (1) http://dx.doi.org/10.9707-0919.1014. (open access)

- Inglehart, Ronald & Miguel Basanez, Jaime Diez-Medrano, Loek Halman and Ruud Luijkx (2004) (eds.) *Human Beliefs and Values: A Cross-Cultural Sourcebook based on the 1999-2002 values surveys*, Mexico, Siglo Beintiuno editors.
- Minkov, M**.** (2013) *Cross-Cultural Analysis: The Science and Art of Comparing the World's Modern Societies and Their Cultures*, Los Angeles, Sage.

17_M2_NI_FMK_S1_CCO_FLE_INCOMNODD_1351: FRENCH COURSE (FOR VISITING STUDENTS & IC)

NUMBER OF HOURS: 30
SEMESTER 1
INTERNATIONAL PROGRAMME - 5 ECTS

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,
- 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

Participation: 30%

Continuous assessment: 70%

READINGS

Levels 1, 2, 3 :

- "Grammaire Progressive du Français", niveau A2/B1 - Intermédiaire Maïa Gregoire, Odile Thievenaz CLE INTERNATIONAL, 2013
- « Bescherelle – La grammaire pour tous », Laurent Nicolas, Bénédicte Delaunay, Hatier 2012
- « Le Bled, orthographe, grammaire, conjugaison, vocabulaire » Edouard Bled, Hachette 2012

Level 1 :

- "Civilisation Progressive du Français", niveau débutant C. Carlo, Mariella Causa CLE INTERNATIONAL, 2003
- "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
- "Comment vont les affaires" d'Anatole Bloomfield et Béatrice Tauzin. Hachette 2007
- "Communication progressive du Français des affaires" de Jean-Luc Penfornis. Clé international 2010

Level 3 :

- "Civilisation progressive du français", niveau avancé Jacques Pécheur CLE INTERNATIONAL, 2010
- "Affaires à suivre" d'Anatole Bloomfield et Béatrice Tauzin. Hachette 2007

17_M2_NI_FMK_S2_SEM_3667: RESEARCH SEMINAR (FOR STUDENT RESEARCH TEAM ONLY)

NUMBER OF HOURS: 15
SEMESTER 2
INTERNATIONAL PROGRAMME - 4 ECTS
COURSE COORDINATOR: Fabrice RIVA

COURSE OBJECTIVES

See syllabus SEMESTER 1

17_M2_NI_FMK_S2_SEM_3947: REGULATION SEMINAR

NUMBER OF HOURS: 15
SEMESTER 2
INTERNATIONAL PROGRAMME - 1 ECTS
COURSE COORDINATOR: Laurent DEGABRIEL

COURSE OBJECTIVES

The course on financial regulation will aim at covering all of the main components of financial regulation, i.e. regulation of financial markets, conduct of business and solvency issues, except prudential banking issues. The course will focus on the main objectives and challenges of regulation in these areas. It will also provide insights into the way regulation is established and enforced at European level and how it impacts and contributes to shape the financial industry. It will take the students through the key elements of this regulation especially in the areas of asset managers, investment firms and insurers. The course will combine lectures, case studies and presentations from experts.

LEARNING OUTCOMES

After having taken this course participants will be able to:

- Know more about the general legal framework regulating financial transactions and market operations
- Better understand what are the legal effect and economic impact of each financial regulation
- Better analyse and evaluate the possible evolution of the financial industry and the career opportunities it may offer

PREREQUISITES

There is no hard pre-requisite for this course except a general knowledge of asset management and the management of financial instruments.

COURSE CONTENT

To be further defined

TEACHING & LEARNING METHODS

3 three-hours lectures and 1 day seminar

ASSESSMENT METHODS

80% of the grade will be constituted by the results obtained at 90 mn multiple-choice question test and 20% from participation to lectures

READINGS

To be further defined

17_M2_NI_FMK_S2_CCO_FIN_859: ENTERPRISE RISK MANAGEMENT

NUMBER OF HOURS: 30
SEMESTER 2
INTERNATIONAL PROGRAMME - 4 ECTS
COURSE COORDINATOR: Michel CROUHY & Dan GALAI

COURSE OBJECTIVES

The objective of this course is to give an overall presentation of best practice Enterprise Risk Management (ERM) approach in light of what has been learned from the subprime and sovereign debt crises.

The course starts by reviewing the typology of risk types and the various potential exposures of corporations to types on uncertainties, for both financial as well as non-financial corporations. We cover the post crisis regulatory framework for banks and look at the implications for managing risks at non-bank corporations and provide the latest methods for measuring and managing market risk, credit risk, operational risk and model risk. The course also emphasizes how the new dynamic framework for stress testing and scenario analysis imposed by the regulator on banks will impact the elaboration of the strategy of the bank and align its business plan with its risk appetite and regulatory constraints. Again, the implications for non-bank firms will be highlighted. Finally the course looks at the role of risk capital and how risk capital can be attributed to business lines as part of a risk-adjusted performance measurement system.

LEARNING OUTCOMES

After having taken this course participants will be able to:

- Understand and comply with post-crises bank regulation, and its potential impact on corporations that are engaged in borrowing from banks, hedging their risks and use bank liquidity facilities.
- Apply best-practice risk methodologies in complex areas such as market risk, counterparty credit risk, credit portfolio management, operational risk, stress testing, economic capital, risk adjusted performance measurement and asset liability management.
- Implement an ERM approach and understand systemic risk.
- Improve corporate governance, reporting structures and risk transparency to satisfy boards, shareholders, employers, regulators and other constituencies.
- Understand the concept of risk appetite and reputation risk.

PREREQUISITES

Students are supposed to have successfully taken the courses offered in Empirical Finance, in Foundations of Asset Pricing and Portfolio Management Part I & II, derivatives pricing and also supposed to have acquired basic knowledge of corporate finance.

COURSE CONTENT

There are ten 3-hour sessions

Session 1 - Introduction

- FinTech, technological innovations and the future of banking
- Why do we need to manage risk: Pros and cons of managing risk.
- Best practice risk management: limit risk management, risk analysis and active portfolio management
- Typology of risk exposures: Market risk, Credit risk, Operational risk, Strategic risk, Business risk, Reputation risk
- Required steps in risk management

- Case study: Metallgesellshaft
- Reading assignment: CGM - chapters 1, and 2; KPMG – Risk Appetite Survey

Session 2 – Corporate governance

- Sarbanes-Oxley (SOX)
- Role of the audit and risk management committees
- Case study: The Volkswagen Emission Cheating Scandal
- Reading assignment: CGM – chapter 4

Session 3 – What can we learn from bank regulation

- The Post-Crisis Regulatory Framework – Basel 2.5, Basel III, Dodd-Frank Act, European Banking Law, Solvency II
- Pillar II and risk management
- Reporting requirement for market risk
- Market value, fair value vs. book value
- Case study: Worldcom
- Reading assignment: CGM - chapter 3

Session 4 – Market risk measurement – Review of the concept of Value-at-Risk and its extensions

- Value-at-Risk (VaR, Expected Shortfall or CVaR
- Practical approaches to compute these risk measures
- Examples of how banks disclose their risks
- Limitations of VaR which lead many banks to underestimate risk during the financial crisis
- Exercise: VaR calculation for equity portfolios
- Case study: The London Whale
- Reading assignment: McKinsey – VaR Study, CGM - chapter 7

Session 5 – Stress testing, scenario analysis and capital planning

- CCAR vs. EBA stress tests
- Scenario generation and strategic planning
- Reading assignment: CGM – Chapter 16

Session 6 – Credit risk measurement

- Quantitative approaches to credit portfolio risk and credit modeling
- Reading assignment: CGM chapter 11

Session 7 – Credit transfer markets and counterparty credit risk

- The credit transfer markets and their implications
- Counterparty credit risk: CVA, DVA and FVA
- Reading assignment: CGM – chapters 12 and 13

Session 8 – Operational risk and model risk

- Why kind of operational risk should attract capital
- VaR for operational risk
- Model risk
- Exercise: Insuring vs. self-insuring operational risk
- Case studies: National Australian Bank, Merrill Lynch and Natwest
- Reading assignment: CGM – chapters 14 and 15

Session 9 – Liquidity risk and asset liability management

- Short-term financing and loan commitments
- Case study: Northern Rock

- Reading assignment: CGM – chapter 8

Session 10 – Risk capital attribution and risk-adjusted performance measurement; Aligning risk management with business strategy

- Case studies: Orange County
- Reading assignment: CGM – chapter 17

TEACHING & LEARNING METHODS

Lectures, readings, exercises and case studies

ASSESSMENT METHODS

100% - Final exam - LO evaluated: Overall understanding of key concepts and best practices in risk management

READINGS

Main reading: The Essential of Risk Management, M. Crouhy, D. Galai and R. Mark, Second edition, 2014, McGraw-Hill (CGM)

17_M2_NI_FMK_S2_CCO_FIN_2765: TREASURY RISK MANAGEMENT

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

COURSE OBJECTIVES

This course is designed to provide students the skills necessary to conceptualize, implement, and manage the strategy and associated operations of treasuries of multinational corporations and financial institutions. Study areas include the role and organization of treasury operations as well as practical challenges of measuring and managing currency and interest rate risks faced by banks and multinational corporations when investing or raising capital in foreign countries. Within this context, the concepts of estimating cost of capital for foreign investments and the effects of foreign exchange movements on global cash flow and portfolio risk management is covered. Additional topics include management of securitization and structured finance transactions.

LEARNING OUTCOMES

After having taken this course participants will be able to:

- Evaluate and apply corporate treasury organizational models
- Analyse and select optimal funding sources and manage asset and liability flows and structures
- Measure and manage liquidity, interest rate and currency risks

PREREQUISITES

- International Economics (M1)

COURSE CONTENT

Session 1: Treasury Functions and Organization

- Role of Treasury (Functions and responsibilities, organizational structure, key performance indicators, treasury culture)
- Treasury Structure and Account Management (Design of account structure, international accounts, industry differentials, cash flow forecasting)
- Global Fund Flows (Money transfer mechanisms, clearing and settlement systems, netting)
- Liquidity Management (Cash management, cost of liquidity, working capital)

Group sessions A & B: Case to be assigned, problem set 1

Session 2: Cash Management

- Cash instruments (Time deposits, T-bills, Certificates of Deposit, Commercial Paper, Bankers Acceptances)
- Bond instruments (Bonds, floating rate notes, callable and puttable bonds, convertible bonds)
- Options (Vanilla options, collars, barrier options, structured options)

Group sessions A & B: Case to be assigned, problem set 2

Session 3: Interest Rate Risk Management

- Forwards (Vanilla forwards, futures, par and variable rate forwards, structured forwards, forward rate agreements, rate locks)
- Swaps (interest rate swaps, coupon swap, principal only swap, swaptions, structured swaps)

Group sessions A & B: Case(s) to be assigned, problem set 3

Session 4: Currency and Liquidity Risk Management

- Foreign exchange instruments, currency swaps and options
- Liquidity contingency plans

Group sessions A & B: Case(s) to be assigned, problem set 4

Session 5: Balance Sheet Management

- Manufacturing and service companies (Capital raising and cash management, payables and receivables, funding challenges and mitigation strategies)
- Financial institutions (Asset liability management, interest rate risk management, currency risk management, funding risk management, regulatory considerations)
- Structured funding vehicles (Asset-backed commercial paper, synthetic asset-backed commercial conduit)
- Mortgage-backed securities (Agency or government bonds, private-label bonds, covered bonds)
- Asset-backed securities (Credit card-backed securities, Auto-loan-backed securities, collateralized debt obligations, synthetic securities)

Group sessions A & B: Case(s) to be assigned, problem set 5

TEACHING & LEARNING METHODS

Lectures will be organized around topics and study areas listed above. Reading materials, problem sets and cases will be handed and/or assigned before teaching and group sessions. Theoretical definitions and concepts will be provided and illustrated during lectures followed by case studies with extensive class interaction. Students will be encourages to develop and test their understanding of the concepts on study material made available on the course's Blackboard pages.

ASSESSMENT METHODS

- Class Participation 25%
- Class Quizzes 15%
- Final Exam 60%

READINGS

Compulsory : Rajendra, Rajiv. 2013. The Handbook of Global Corporate Treasury. Singapore: Wiley

Recommended

- Castagna, Antonio, and Francesco Fede. 2013 Measuring and Managing Liquidity Risk. New York: Wiley

- Corb, Howard. 2012 Interest Rate Swaps and Other Derivatives. New York: Columbia Business School Publishing
- Weithers, Tim. 2006 Foreign Exchange: A Practical Guide to the FX Markets. New York: Wiley

17_M2_NI_FMK_S2_MAM_1161: INVESTMENT SOLUTIONS

NUMBER OF HOURS: 30
SEMESTER 2
INTERNATIONAL PROGRAMME - 4 ECTS
COURSE COORDINATOR: Lionel MARTELLINI

COURSE OBJECTIVES

This course is intended to provide students with an in-depth appreciation of the concepts and techniques that will shape the future of investment management in the face of a forthcoming industrial revolution that is going to have a profound impact on this industry. It will also equip them with practical tools to improve asset allocation and risk management processes, implement novel investment management approaches, and develop new investment products and more importantly new investment solutions.

LEARNING OUTCOMES

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

- Understand how to build well-diversified portfolios within and across asset classes;
- Understand the benefits and limits of liability-driven investment strategies;
- Understand how to develop improved forms of life-cycle funds and retirement investment solutions;
- Understand how to use dynamic risk budgeting techniques to design new investment solutions.

PREREQUISITES

This course is intended to build upon the entire portfolio of courses of the program. While it is meant to show students how to use all the acquired skills to design welfare-improving investment solutions, it particularly draws on the following courses.

- Empirical Methods in Finance
- Asset Management
- Fixed-Income Securities
- Derivatives Pricing and Hedging
- EXCEL and VBA
- MATLAB

COURSE CONTENT

Lesson N°	Course content	Required Readings
1	**Introduction: From investment products to investment solutions** • From asset management to risk and asset management: understanding the value of risk management in the asset management process; defining the three possible approaches to risk management: diversification, hedging and insurance; ex-post risk measurement versus ex-ante risk management. • From risk and asset management to risk and asset-liability management: liability-driven investing; improved investment benchmarks versus improved asset allocation strategies; introducing the new paradigm that makes it possible to design investment solutions that meet	R1

	investors' needs.	
2, 3, 4	**Efficient diversification for policy portfolios & beyond** • From asset allocation to risk allocation: asset allocation decisions across asset classes versus portfolio construction decisions within asset classes; allocating to risk factors versus allocating to asset classes; from measurement of factor exposures to passive replication of, and optimal allocation to, factor exposures. • Measuring diversification: weight-based versus risk-based measures of diversification; measuring the number of independent bets in asset allocation decisions; turning correlated asset returns into uncorrelated factor returns; pros and cons of using principal component analysis versus minimum linear torsion.	**R2, R3**
4, 5	**Liability-driven investment strategies and beyond** • Fund separation theorems: performance-seeking portfolio versus liability-hedging portfolio; understanding the role of interactions between asset classes and investment motives. • Fund interaction theorems: performance-seeking portfolios with attractive hedging properties and liability-hedging portfolios with attractive performance properties. • From improved equity to improved bond benchmarks; bond portfolio optimization with duration constraints; covariance matrix estimation for bond returns; factor analysis for bond returns; improved sovereign and corporate bond benchmarks.	**R4, R5, R6**
7	**Life-cycle investment (LCI) strategies and beyond** • Accounting for the presence of long-term objectives in portfolio construction; from short-term static portfolio selection to long-term intertemporal portfolio selection; optimal allocation decisions in the presence of a stochastic opportunity set; revisions of strategic asset allocations versus time-horizon dependencies; hedging demands with respect to interest rate, inflation, equity volatility and risk premium risks. • Application to retirement investment decisions; the shifts from the defined benefit (DB) to the defined contributions (DC) paradigm; limits of existing retirement solutions and improved forms of target date funds.	**R7**
8	**Risk-controlled investment (RCI) strategies and beyond** • Introducing risk management constraints into asset allocation; The history and pre-history of portfolio insurance strategies: constant proportion portfolio insurance vs. option-based portfolio insurance; understanding risk management techniques based on replication and on derivatives; introducing exotic structures; defining margin for error as a function of risk aversion; implementing time- and state-dependent asset allocation strategies for risk management. • Including relative maximum drawdown and trailing performance constraints Minimizing the opportunity costs of short-term constraints; strategies with a performance cap; strategies based on multiple floor/cap levels.	**R8**
9, 10	**Case studies in institutional and individual money management** • Case study in institutional money management: from static to dynamic LDI strategies; risk budgets in ALM; conflict between short-term and long-term perspectives; minimizing the opportunity costs of short-term constraints; smart betas in LDI. • Case study in individual money management: goal-based investing principles; affordability conditions; application in private wealth management; designing meaningful investment solutions; mass customization challenges.	**R9, R10**

TEACHING & LEARNING METHODS

- Lectures
- Readings
- Cases studies

- Exercises

ASSESSMENT METHODS

The course grade is based on the following criteria:

- 50% Assignment (group case study)
- 50% Final Exam (in class exam)

READINGS

Textbooks:

- Meucci, A., Risk and asset allocation, Springer Verlag, 2005.
- Roncalli, T., Introduction to Risk Parity and Budgeting, Chapman & Hall, 2013.
- Scherer, B., Liability Hedging and Portfolio Choice, Risk Books, 2005.

Required Readings (all EDHEC-Risk publications, except for the first one, posted on BB):

- Reading material for lecture 1: Thoughts on the Future: Theory and Practice in Investment Management (Robert Merton, FAJ, 2003); Thoughts on the Future of Investment Management (edito newsletter EDHEC Risk, available at http://www.edhec-risk.com/edito/RISKArticleEdito.2015-09-11.0604).
- Reading material for lecture 2: Beyond Risk parity - From Asset Allocation to factor Allocation Decisions (EDHEC-Risk Publication).
- Reading material for lecture 3: Improved Risk Reporting with Factor-Based Diversification Measures (EDHEC-Risk Publication).
- Reading material for lecture 4: Dynamic Liability-Driven Investing Strategies: The Emergence of a New Investment Paradigm for Pension Funds? Section I.1 (EDHEC-Risk Publication).
- Reading material for lecture 5: Equity Portfolios with Improved Liability-Hedging Benefits (EDHEC-Risk Publication).
- Reading material for lecture 6: Sovereign Bond Portfolio Optimization with Duration Constraints (EDHEC-Risk Publication).
- Reading material for lecture 7: From Deterministic to Stochastic Life-Cycle Investing: Implications for the Design of Improved Forms of Target Date Funds (EDHEC-Risk Publication).
- Reading material for lecture 8: Dynamic Liability-Driven Investing Strategies: The Emergence of a New Investment Paradigm for Pension Funds? Section I.2 and I.3 (EDHEC-Risk Publication).
- Reading material for lecture 9: Asset-Liability Management in Private Wealth Management (EDHEC-Risk Publication).
- Reading material for lecture 10: Introducing a Comprehensive Risk Allocation Framework for Goals-Based Wealth Management (EDHEC-Risk Publication).

17_M2_NI_FMK_S2_MAM_3673: TACTICAL ASSET ALLOCATION

NUMBER OF HOURS: 18
SEMESTER 2
INTERNATIONAL PROGRAMME - 2 ECTS
COURSE COORDINATOR: 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.

LEARNING OUTCOMES

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. By the end of this course the student should:

- 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 and Asset Markets (626) and Financial Econometrics (627). Students are expected to be comfortable with applications of basic maths, statistics and multiple regression analysis.

COURSE CONTENT

1. Introduction

- 1.1. what is TAA
- 1.2. why TAA?
- 1.3. a brief history of asset allocation
- 1.4. types of TAA strategies

2. Tactical asset allocation – methodological foundations

- 2.1. TAA for short and long term investors
- 2.2. Estimation error
- 2.3. The Black-Litterman model

Case study: Constructing a global country portfolio - BL in practice

- 2.4. Return predictability
- 2.5. Recent developments in return predictability modelling

- 2.6. Forecasting variances and covariances in practice

Case study: Building a global equity TAA strategy

3. Tactical asset allocation strategies

- 3.1. Factor based asset allocation
- 3.2. Equity factor strategies (value, size, momentum and low volatility)

Case study: A dynamic global factor strategy under state dependent risk premia

- 3.3. Fixed income strategies
- 3.4. Low volatility strategies
- 3.5. Volatility strategies
- 3.6. Currency strategies
- 3.7. Commodity strategies

4. Topics in TAA

- 4.1. “The Fundamental Law” of active management
- 4.2. Implementing TAA strategies
- 4.3. TAA strategies as practiced by major investors
- 4.4. TAA future trends

TEACHING & LEARNING METHODS

We will use class lectures and case studies.

ASSESSMENT METHODS

The assessment is a combination of a group assignment (50% of the grade) and an exam (50% of the grade).

READINGS

The books listed below provide references for the topics covered in the course but we will not follow any textbook in its entirety:

- Andrew Ang, Asset Management: A Systematic Approach to Factor Investing, Oxford University Press, 2014.
- Antti Ilmanen, Expected Returns: An Investor's Guide to Harvesting Market Rewards, Wiley Finance, 2011
- Wai Lee, Theory and Methodology of Tactical Asset Allocation, Frank Fabozzi and Associates, 2000

Lecture Slides : Lecture slides are the most important course material and should make it easier to follow lectures and organize your own notes. Lecture slides will be available at the beginning of the course.

17_M2_NI_FMK_S2_MAM_1063: ALTERNATIVE INVESTMENTS

NUMBER OF HOURS: 27
SEMESTER 2
INTERNATIONAL PROGRAMME - 4 ECTS
COURSE COORDINATOR: François-Serge LHABITANT

COURSE OBJECTIVES

Alternative Investments are the fastest growing sector of the financial industry, and probably the least understood, including by several market professionals. Although the range of sophistication in people associated with alternative investments varies substantially, it is more and more common to use them in investment strategies, either as direct investments or through funds of funds or structured products. 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 and commodity trading advisors – 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.

COURSE CONTENT

Lesson N°	Course content
1	**Introduction**: Origins of alternative investments, Characteristics of Hedge Funds, discussion of recent statistics on the industry, the mechanics of long/short investing, why go from long only to long short
2	**Equity Strategies: Long/Short Equity Strategies + Merger Arbitrage + Statistical Arbitrage**: Analysis of various trades
3	**Fixed-Income Arbitrage and Global Macro**: Analysis of various trades
4	**Commodity Trading Advisors + Systematic Trading**: Analysis of various trades
5	**Distressed Securities and Credit Trading Strategies**: Analysis of various trades
6	**Convertible Arbitrage and Capital Structure Arbitrage** : Analysis of various trades
7	**Quantitative Tools for Analyzing Hedge Funds:** Shortcomings of the available data on HF, HF and CTA benchmarks and indices, Style Analysis and Value at Risk calculations, Kalman Filter, Extreme Value Theory, Monte Carlo simulations, Time and Space Diversification.
8	**Investing in Hedge Funds:** Managing a hedge fund portfolio, risk versus asset allocation, alternative betas, liquidity risk, correlation risk, hedge fund replication, structured products on hedge funds
9	**Product Engineering:** Funds of Funds, Capital Protected Products, Index Certificates, HF replication

	and alternative betas.
10	**Presentation in class**

TEACHING & LEARNING METHODS

Lectures, readings, cases studies, exercises, discussion in class

ASSESSMENT METHODS

- 25% One presentation in class by groups
- 75% One final in-class exam *(maximum ONE PAGE double sided of notes allowed. No other documents allowed - calculators allowed, but no laptop).*

READINGS

The reference material for this course is contained in the following book: “The Handbook of Hedge Funds” by François-Serge LHABITANT, published by John Wiley & Sons (2006).

In addition, we will also discuss several research papers during the course. I will provide you with web links or references to obtain these papers.

17_M2_NI_FMK_S2_SEM_1064: ETHICS AND CORPORATE GOVERNANCE

NUMBER OF HOURS: 15
SEMESTER 2
INTERNATIONAL PROGRAMME - 2 ECTS
COURSE COORDINATOR: Luc VANLIEDEKERKE - TO BE UPDATED

COURSE OBJECTIVES

Managers and professionals in the finance industry are confronted with many specific ethical issues. This course addresses, to some extent, the ethical challenges in finance, which includes financial markets, financial services, and financial management.

The main objective is to make students aware of the relevance of ethical norms for professionals in finance. A second objective is to deliver helpful background knowledge for people who prepare the CFA exam.

That financial activity be conducted according to moral norms is of great importance, not only because of the crucial role that finance plays in the personal, economic, political, and social realms but also because of the opportunities for large financial gains that may tempt individuals and financial institutions to act unethically and cause great harm.

Many of the ethical norms in finance are embodied in law and government regulation and are enforced by the courts and regulatory bodies.

Ethics plays a vital role, however, first, by guiding the formation of law and regulation and, second, by guiding conduct in areas not governed by law and regulation.

LEARNING OUTCOMES

After having taken this course participants will be able to:

- Understand the need for ethics in finance and the role of ethics in financial activity.
- Understand the ethical principles of fairness in market transactions and the principles that justify the duties of people in financial roles
- Understand the ethical principles that apply to the delivery of financial services and the operation of firms in the financial services industry, the duties of financial managers in corporations and the ethical principles that apply to corporate financial decisions.
- Understand how particular management may be helpful to implement an ethical corporate culture and to limit the risk of unethical behaviour.

PREREQUISITES

There are no specific prerequisites, except for the willingness to be guided by rational arguments and to scrutinize critically one's own and other people's moral opinions related to the economy and, more particularly, related to the financial markets and services.

COURSE CONTENT

- Introduction: Ethics today. Ethics and the economy
- Ethics in finance: an overview
- Ethics and financial markets: concepts and cases (e.g. insider trading), the role of codes of conduct
- Ethics in financial services: concepts and cases. Ethics and investment decisions: what to think of SRI?
- Ethics and individuals in the finance sector (+ discussion of the CFA code of conduct)

TEACHING & LEARNING METHODS

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.

The course makes extensive use of Blackboard. In addition to material posted on Blackboard, this system will be used to submit all writing assignments. Students are responsible for learning how to gain access and work with files in Blackboard and for ensuring that the system has their preferred email address.

ASSESSMENT METHODS

In addition to reading the assigned materials and participating in class discussion, the requirements for the course include one written assignment. The grade for the course is determined as follows: participation 40%, the writing project 60%.

READINGS

Required readings:

Papers

- Bhidé, Amar. 2010. "The Judgment Deficit." *Harvard Business Review*. September: 44-53.
- Shefrin, H. & M. Statman, "Ethics, fairness and efficiency in financial markets", *Financial Analyst Journal*, Nov./Dec.1993.
- Sharp Paine, L., "Managing for organizational integrity", *Harvard Business School Review*, March/April 1994.
- Taleb, Nassim N., Daniel Goldstein, and Mark W. Spitznagel. 2009. "The Six Mistakes Executives Make in Risk Management." *Harvard Business Review*, October: 78-81.

Selected sections from:

- Boatright, John, *Ethics in Finance* (Third edition). Oxford, Blackwell, 2014.
- *Codes of conduct of professional bodies in finance*
- The Code of Conduct of the Global Association of Risk Professionals (GARP) (http://www.garp.org/garp/code-of-conduct.aspx)

***Cases*: They will be posted on Blackboard.**

General background reading:

- Bhidé, Amar. 2010. *A Call for Judgment: Sensible Finance for a Dynamic Economy*. New York: Oxford University Press.
- Boatright, John (Ed.), *Finance Ethics: Critical Issues in Theory and Practice*, Malden, Wiley, 2011.
- Boatright, John R. 2011. "Risk Management and the Responsible Corporation: How Sweeping the Invisible Hand?" *Business and Society Review*, 116: 145-170.
- Lewis, Michael (2014), *Flash Boys. A Wall Street Revolt*. New York: Norton & Company
- Power, Michael. 2007. *Organized Uncertainty*. Oxford: Oxford University Press.
- Trevino, Linda, Gary R. Weaver, and Scott J. Reynolds. 2006. "Behavioral Ethics in Organizations: A Review. *Journal of Management* 32: 951-990.

17_M2_NI_FMK_S2_SEM_FIN_3948: REGULATION SEMINAR

NUMBER OF HOURS: 15
SEMESTER 2
INTERNATIONAL PROGRAMME - 1 ECTS
COURSE COORDINATOR: Laurent DEGABRIEL - TBU

COURSE OBJECTIVES

The course on financial regulation will aim at covering all of the main components of financial regulation, i.e. regulation of financial markets, conduct of business and solvency issues, except prudential banking issues. The course will focus on the main objectives and challenges of regulation in these areas. It will also provide insights into the way regulation is established and enforced at European level and how it impacts and contributes to shape the financial industry. It will take the students through the key elements of this regulation especially in the areas of asset managers, investment firms and insurers. The course will combine lectures, case studies and presentations from experts.

LEARNING OUTCOMES

After having taken this course participants will be able to:

- Know more about the general legal framework regulating financial transactions and market operations
- Better understand what are the legal effect and economic impact of each financial regulation
- Better analyse and evaluate the possible evolution of the financial industry and the career opportunities it may offer

PREREQUISITES

There is no hard pre-requisite for this course except a general knowledge of asset management and the management of financial instruments.

COURSE CONTENT

To be further defined

TEACHING & LEARNING METHODS

3 three-hours lectures and 1 day seminar

ASSESSMENT METHODS

80% of the grade will be constituted by the results obtained at 90 mn multiple-choice question test and 20% from participation to lectures

READINGS

To be further defined

17_M2_NI_FMK_S2_MTM_3949: ENTERPRISE RISK MANAGEMENT

NUMBER OF HOURS: 30
SEMESTER 2
INTERNATIONAL PROGRAMME - 4 ECTS
COURSE COORDINATOR: Michel CROUHY & Dan GALAI

COURSE OBJECTIVES

The objective of this course is to give an overall presentation of best practice Enterprise Risk Management (ERM) approach in light of what has been learned from the subprime and sovereign debt crises.

The course starts by reviewing the typology of risk types and the various potential exposures of corporations to types on uncertainties, for both financial as well as non-financial corporations. We cover the post crisis regulatory framework for banks and look at the implications for managing risks at non-bank corporations and provide the latest methods for measuring and managing market risk, credit risk, operational risk and model risk. The course also emphasizes how the new dynamic framework for stress testing and scenario analysis imposed by the regulator on banks will impact the elaboration of the strategy of the bank and align its business plan with its risk appetite and regulatory constraints. Again, the implications for non-bank firms will be highlighted. Finally the course looks at the role of risk capital and how risk capital can be attributed to business lines as part of a risk-adjusted performance measurement system.

LEARNING OUTCOMES

After having taken this course participants will be able to:

- Understand and comply with post-crises bank regulation, and its potential impact on corporations that are engaged in borrowing from banks, hedging their risks and use bank liquidity facilities.
- Apply best-practice risk methodologies in complex areas such as market risk, counterparty credit risk, credit portfolio management, operational risk, stress testing, economic capital, risk adjusted performance measurement and asset liability management.
- Implement an ERM approach and understand systemic risk.
- Improve corporate governance, reporting structures and risk transparency to satisfy boards, shareholders, employers, regulators and other constituencies.
- Understand the concept of risk appetite and reputation risk.

PREREQUISITES

Students are supposed to have successfully taken the courses offered in Empirical Finance, in Foundations of Asset Pricing and Portfolio Management Part I & II, derivatives pricing and also supposed to have acquired basic knowledge of corporate finance.

COURSE CONTENT

There are ten 3-hour sessions

Session 1 - Introduction

- FinTech, technological innovations and the future of banking
- Why do we need to manage risk: Pros and cons of managing risk.
- Best practice risk management: limit risk management, risk analysis and active portfolio management

- Typology of risk exposures: Market risk, Credit risk, Operational risk, Strategic risk, Business risk, Reputation risk
- Required steps in risk management
- Case study: Metallgesellshaft
- Reading assignment: CGM - chapters 1, and 2; KPMG – Risk Appetite Survey

Session 2 – Corporate governance

- Sarbanes-Oxley (SOX)
- Role of the audit and risk management committees
- Case study: The Volkswagen Emission Cheating Scandal
- Reading assignment: CGM – chapter 4

Session 3 – What can we learn from bank regulation

- The Post-Crisis Regulatory Framework – Basel 2.5, Basel III, Dodd-Frank Act, European Banking Law, Solvency II
- Pillar II and risk management
- Reporting requirement for market risk
- Market value, fair value vs. book value
- Case study: Worldcom
- Reading assignment: CGM - chapter 3

Session 4 – Market risk measurement – Review of the concept of Value-at-Risk and its extensions

- Value-at-Risk (VaR, Expected Shortfall or CVaR
- Practical approaches to compute these risk measures
- Examples of how banks disclose their risks
- Limitations of VaR which lead many banks to underestimate risk during the financial crisis
- Exercise: VaR calculation for equity portfolios
- Case study: The London Whale
- Reading assignment: McKinsey – VaR Study, CGM - chapter 7

Session 5 – Stress testing, scenario analysis and capital planning

- CCAR vs. EBA stress tests
- Scenario generation and strategic planning
- Reading assignment: CGM – Chapter 16

Session 6 – Credit risk measurement

- Quantitative approaches to credit portfolio risk and credit modeling
- Reading assignment: CGM chapter 11

Session 7 – Credit transfer markets and counterparty credit risk

- The credit transfer markets and their implications
- Counterparty credit risk: CVA, DVA and FVA
- Reading assignment: CGM – chapters 12 and 13

Session 8 – Operational risk and model risk

- Why kind of operational risk should attract capital
- VaR for operational risk
- Model risk
- Exercise: Insuring vs. self-insuring operational risk
- Case studies: National Australian Bank, Merrill Lynch and Natwest
- Reading assignment: CGM – chapters 14 and 15

Session 9 – Liquidity risk and asset liability management

- Short-term financing and loan commitments
- Case study: Northern Rock
- Reading assignment: CGM – chapter 8

Session 10 – Risk capital attribution and risk-adjusted performance measurement; Aligning risk management with business strategy

- Case studies: Orange County
- Reading assignment: CGM – chapter 17

TEACHING & LEARNING METHODS

Lectures, readings, exercises and case studies

ASSESSMENT METHODS

100% - Final exam - LO evaluated: Overall understanding of key concepts and best practices in risk management

READINGS

Main reading: The Essential of Risk Management, M. Crouhy, D. Galai and R. Mark, Second edition, 2014, McGraw-Hill (CGM)

17_M2_NI_FMK_S2_CCO_FIN_2767: TREASURY RISK MANAGEMENT

NUMBER OF HOURS: 15
SEMESTER 2
INTERNATIONAL PROGRAMME - 2 ECTS
COURSE COORDINATOR: TO BE DETERMINED

COURSE OBJECTIVES

This course is designed to provide students the skills necessary to conceptualize, implement, and manage the strategy and associated operations of treasuries of multinational corporations and financial institutions. Study areas include the role and organization of treasury operations as well as practical challenges of measuring and managing currency and interest rate risks faced by banks and multinational corporations when investing or raising capital in foreign countries. Within this context, the concepts of estimating cost of capital for foreign investments and the effects of foreign exchange movements on global cash flow and portfolio risk management is covered. Additional topics include management of securitization and structured finance transactions.

LEARNING OUTCOMES

After having taken this course participants will be able to:

- Evaluate and apply corporate treasury organizational models
- Analyse and select optimal funding sources and manage asset and liability flows and structures
- Measure and manage liquidity, interest rate and currency risks

PREREQUISITES

International Economics (M1)

COURSE CONTENT

Session 1: Treasury Functions and Organization

- Role of Treasury (Functions and responsibilities, organizational structure, key performance indicators, treasury culture)
- Treasury Structure and Account Management (Design of account structure, international accounts, industry differentials, cash flow forecasting)
- Global Fund Flows (Money transfer mechanisms, clearing and settlement systems, netting)
- Liquidity Management (Cash management, cost of liquidity, working capital)

Group sessions A & B: Case to be assigned, problem set 1

Session 2: Cash Management

- Cash instruments (Time deposits, T-bills, Certificates of Deposit, Commercial Paper, Bankers Acceptances)
- Bond instruments (Bonds, floating rate notes, callable and puttable bonds, convertible bonds)
- Options (Vanilla options, collars, barrier options, structured options)

Group sessions A & B: Case to be assigned, problem set 2

Session 3: Interest Rate Risk Management

- Forwards (Vanilla forwards, futures, par and variable rate forwards, structured forwards, forward rate agreements, rate locks)
- Swaps (interest rate swaps, coupon swap, principal only swap, swaptions, structured swaps)

Group sessions A & B: Case(s) to be assigned, problem set 3

Session 4: Currency and Liquidity Risk Management

- Foreign exchange instruments, currency swaps and options
- Liquidity contingency plans

Group sessions A & B: Case(s) to be assigned, problem set 4

Session 5: Balance Sheet Management

- Manufacturing and service companies (Capital raising and cash management, payables and receivables, funding challenges and mitigation strategies)
- Financial institutions (Asset liability management, interest rate risk management, currency risk management, funding risk management, regulatory considerations)
- Structured funding vehicles (Asset-backed commercial paper, synthetic asset-backed commercial conduit)
- Mortgage-backed securities (Agency or government bonds, private-label bonds, covered bonds)
- Asset-backed securities (Credit card-backed securities, Auto-loan-backed securities, collateralized debt obligations, synthetic securities)

Group sessions A & B: Case(s) to be assigned, problem set 5

TEACHING & LEARNING METHODS

Lectures will be organized around topics and study areas listed above. Reading materials, problem sets and cases will be handed and/or assigned before teaching and group sessions. Theoretical definitions and concepts will be provided and illustrated during lectures followed by case studies with extensive class interaction. Students will be encourages to develop and test their understanding of the concepts on study material made available on the course's Blackboard pages.

ASSESSMENT METHODS

Class Participation 25%

Class Quizzes 15%

Final Exam 60%

READINGS

Compulsory : Rajendra, Rajiv. 2013. The Handbook of Global Corporate Treasury. Singapore: Wiley

Recommended:

- Castagna, Antonio, and Francesco Fede. 2013 Measuring and Managing Liquidity Risk. New York: Wiley
- Corb, Howard. 2012 Interest Rate Swaps and Other Derivatives. New York: Columbia Business School Publishing
- Weithers, Tim. 2006 Foreign Exchange: A Practical Guide to the FX Markets. New York: Wiley

17_M2_NI_FMK_S2_MTM_842: MARKET RISK MEASUREMENT

NUMBER OF HOURS: 30
SEMESTER 2
INTERNATIONAL PROGRAMME - 4 ECTS
COURSE COORDINATOR: Riccardo REBONATO

COURSE OBJECTIVES

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, then how 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 how 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 6: From the P&L distribution to risk measures.** Variance, VaR, Expected Shortfall (ES): different risk measures for 'daily' management of risk, capital allocation, portfolio construction. The dangers of 'VaR optimization'. Marginal VaR. The tension between confidence interval, holding period, and 'relevance' of data. Scaling over quantiles; scaling over holding periods.
- **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 ; backtetsing 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.

17_M2_NI_FMK_S2_MTM_886: TRADING IN PRACTICE

NUMBER OF HOURS: 30
SEMESTER 2
INTERNATIONAL PROGRAMME - 4 ECTS
COURSE COORDINATOR: 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 to 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:

- 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

PREREQUISITES

- Students should have be trained to Reuters system, and be able to access information and quotes on basic financial instruments.
- They should be able to link Excel sheets to Reuters 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. This continuous work will count for 20% of the grades. I will stress the quality of the rationale behind the investments.

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

Technical Analysis : "Technical Analysis of The Financial Markets" by John J. Murphy

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

17_M2_NI_FMK_S2_SEM_FIN_1104: ETHICS AND CORPORATE GOVERNANCE

NUMBER OF HOURS: 15
SEMESTER 2
INTERNATIONAL PROGRAMME - 2 ECTS
COURSE COORDINATOR: Luc VANLIEDEKERKE - TO BE UPDATED

COURSE OBJECTIVES

Managers and professionals in the finance industry are confronted with many specific ethical issues. This course addresses, to some extent, the ethical challenges in finance, which includes financial markets, financial services, and financial management.

The main objective is to make students aware of the relevance of ethical norms for professionals in finance. A second objective is to deliver helpful background knowledge for people who prepare the CFA exam.

That financial activity be conducted according to moral norms is of great importance, not only because of the crucial role that finance plays in the personal, economic, political, and social realms but also because of the opportunities for large financial gains that may tempt individuals and financial institutions to act unethically and cause great harm.

Many of the ethical norms in finance are embodied in law and government regulation and are enforced by the courts and regulatory bodies.

Ethics plays a vital role, however, first, by guiding the formation of law and regulation and, second, by guiding conduct in areas not governed by law and regulation.

LEARNING OUTCOMES

After having taken this course participants will be able to:

- Understand the need for ethics in finance and the role of ethics in financial activity.
- Understand the ethical principles of fairness in market transactions and the principles that justify the duties of people in financial roles
- Understand the ethical principles that apply to the delivery of financial services and the operation of firms in the financial services industry, the duties of financial managers in corporations and the ethical principles that apply to corporate financial decisions.
- Understand how particular management may be helpful to implement an ethical corporate culture and to limit the risk of unethical behaviour.

PREREQUISITES

There are no specific prerequisites, except for the willingness to be guided by rational arguments and to scrutinize critically one's own and other people's moral opinions related to the economy and, more particularly, related to the financial markets and services

COURSE CONTENT

- Introduction: Ethics today. Ethics and the economy
- Ethics in finance: an overview
- Ethics and financial markets: concepts and cases (e.g. insider trading), the role of codes of conduct
- Ethics in financial services: concepts and cases. Ethics and investment decisions: what to think of SRI?
- Ethics and individuals in the finance sector (+ discussion of the CFA code of conduct)

TEACHING & LEARNING METHODS

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.

The course makes extensive use of Blackboard. In addition to material posted on Blackboard, this system will be used to submit all writing assignments. Students are responsible for learning how to gain access and work with files in Blackboard and for ensuring that the system has their preferred email address.

ASSESSMENT METHODS

In addition to reading the assigned materials and participating in class discussion, the requirements for the course include one written assignment. The grade for the course is determined as follows: participation 40%, the writing project 60%.

READINGS

Required readings:

Papers

- Bhidé, Amar. 2010. “The Judgment Deficit.” *Harvard Business Review*. September: 44-53.
- Shefrin, H. & M. Statman, “Ethics, fairness and efficiency in financial markets”, *Financial Analyst Journal*, Nov./Dec.1993.
- Sharp Paine, L., “Managing for organizational integrity”, *Harvard Business School Review*, March/April 1994.
- Taleb, Nassim N., Daniel Goldstein, and Mark W. Spitznagel. 2009. “The Six Mistakes Executives Make in Risk Management.” *Harvard Business Review*, October: 78-81.

Selected sections from:

- Boatright, John, *Ethics in Finance* (Third edition). Oxford, Blackwell, 2014.
- *Codes of conduct of professional bodies in finance*
- The Code of Conduct of the Global Association of Risk Professionals (GARP) (http://www.garp.org/garp/code-of-conduct.aspx)

***Cases*: They will be posted on Blackboard.**

General background reading:

- Bhidé, Amar. 2010. *A Call for Judgment: Sensible Finance for a Dynamic Economy*. New York: Oxford University Press.
- Boatright, John (Ed.), *Finance Ethics: Critical Issues in Theory and Practice*, Malden, Wiley, 2011.
- Boatright, John R. 2011. “Risk Management and the Responsible Corporation: How Sweeping the Invisible Hand?” *Business and Society Review*, 116: 145-170.
- Lewis, Michael (2014), *Flash Boys. A Wall Street Revolt*. New York: Norton & Company
- Power, Michael. 2007. *Organized Uncertainty*. Oxford: Oxford University Press.
- Trevino, Linda, Gary R. Weaver, and Scott J. Reynolds. 2006. “Behavioral Ethics in Organizations: A Review. *Journal of Management* 32: 951-990.

17_M2_NI_FMK_S2_CCO_CCS_INCOMNODD_2368: RESEARCHING FRANCE (FOR VISITING STUDENTS ONLY)

NUMBER OF HOURS: 30
SEMESTER 2
INTERNATIONAL PROGRAMME - 7 ECTS
COURSE COORDINATOR: Anne WITTE

COURSE OBJECTIVES

- To introduce international students to the socio-economic environments in which French business takes place and will take place over the next decade
- To use a diversity of research methods to acquaint students with available sources to investigate industry, services, entrepreneurship and public policy strategies within France
- To analyze the socio-economics of France by combining demographic, social, and economic indicators
- To present new data and insights using innovative tools

LEARNING OUTCOMES

After having taken this course participants will be able to:

- Analyze recent data on French companies and business environments
- Propose implementation and exportation strategies concerning France
- Conduct industry specific country risk analysis concerning France
- Make forecasts about the evolution of French consumption and economic patterns over the next decade

PREREQUISITES

- Three years of general business courses or Bac + 3 Business Administration.
- A working knowledge of French is helpful, but not required.
- The courses Values, Cooperation and Trust or Sociocultural France are helpful, but not required.

COURSE CONTENT

This module requires participants to explore a number of data collection methods to produce qualitative and quantitative inquiries on France and its industries. Research is a 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.

Session 1 Overview of the Economics of France; review of the use of EDHEC on-line data base; Key Research Objectives

Reading - "Doing E-Business in France: Drivers of online trust in business to consumer websitesC 2014 Wiley Periodicals, Inc.Published online in Wiley Online Library (wileyonlinelibrary.com) Global Business and Organizational Excellence ¿ DOI: 10.1002/joe.21551 ¿ May/June 2014

Session 2 Overview of French Innovation; Overview of the components of consulting reports

Identifying and justifying a research topic with added value for investors, consumers, or

Homework: Learn the free survey tool Piktographs

Reading J. Kluger (2013) The Spark of Invention, *Time Magazine* November 2013

Session 3 Overview of key French businesses; sectors of the French business economy

Research project moving from description, then analysis to recommendations; interpreting data

Reading: Emilien Moyon and Xavier Lecocq Rethinking Business Models in Creative Industries The Case of the French Record Industry *Int. Studies of Mgt. & Org.,* vol. 44, no. 4, Winter 2014–15, pp. 83–101.© 2015 M.E. Sharpe, Inc.

Session 4 – French business culture

Reading Hofstede, G. (2011) Dimensionalizing Cultures: The Hofstede Model in Context. *Online Readings in Psychology and culture* , 2, (1) http://dx.doi.org/10.9707-0919.1014.

Session 5 - Site visit to a company in Nice Galéries Lafayette

Reading: Passport Report on SA Galéries Lafayette 2016

Session 6 - Using the World Values Surveys and European Social Science surveys for socio-cultural insights into consumers and citizens

Reading F O C U S 2015 WORLD FILM MARKET TRENDS

Session 7 - Open session to be defined

Session 8: Website consulting Presentations

Session 9: Website consulting presentations

Session 10: Feedback on the research process and the analysis of France; course conclusion

TEACHING & LEARNING METHODS

Lectures, student study cohorts, Socratic dialogue, reading.

ASSESSMENT METHODS

- Participation 20%
- Website Analysis and infographics –50%
- Final Exam - 30%

READINGS

This course will make regular use of online data particularly Euromonitor International, The World Values Survey and the European Social Surveys.

- FUKUYAMA, F. (1995) Trust: the Social Virtues and the Creation of Prosperity, New York, Free Press. See particularly chapter 11 on French companies, trust in the private sector and the history behind large state owned corporations in France.
- Minkov, M. (2013) Cross-Cultural Analysis: The Science and Art of Comparing the World's Modern Societies and Their Cultures, Los Angeles, Sage.

17_M2_NI_FMK_S2_CCO_FLE_INCOMNODD_1352: FRENCH COURSE (FOR VISITING STUDENTS & IC)

NUMBER OF HOURS: 30
SEMESTER 2
INTERNATIONAL PROGRAMME - 5 ECTS

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,
- 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

Participation: 30%
Continuous assessment: 70%

READINGS

- **Levels 1, 2, 3 :** "Grammaire Progressive du Français", niveau A2/B1 - Intermédiaire Maïa Gregoire, Odile Thievenaz CLE INTERNATIONAL, 2013
- « Bescherelle – La grammaire pour tous », Laurent Nicolas, Bénédicte Delaunay, Hatier 2012
- « Le Bled, orthographe, grammaire, conjugaison, vocabulaire » Edouard Bled, Hachette 2012

- **Level 1** : "Civilisation Progressive du Français", niveau débutant C. Carlo, Mariella Causa CLE INTERNATIONAL, 2003
- "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
- "Comment vont les affaires" d'Anatole Bloomfield et Béatrice Tauzin. Hachette 2007 "Communication progressive du Français des affaires" de Jean-Luc Penfornis. Clé international 2010

- **Level 3 :** "Civilisation progressive du français", niveau avancé Jacques Pécheur CLE INTERNATIONAL, 2010
- "Affaires à suivre" d'Anatole Bloomfield et Béatrice Tauzin. Hachette 2007

17_M2_NI_FMK_S2_ELE_FIN_747: CONTINUOUS TIME FINANCE

NUMBER OF HOURS: 15
SEMESTER 2
INTERNATIONAL PROGRAMME - 2 ECTS
COURSE COORDINATOR: Abraham LIOUI

COURSE OBJECTIVES

This is an advanced course in Financial Economics. It addresses the usual financial issues like no arbitrage derivatives pricing, portfolio choice and asset pricing from the perspective of a long term investor in the economy. By taking into account the intertemporal dimension inherent in decision making under uncertainty, it will be shown that the usual predictions of Financial Models derived in a static framework should be amended. The course will be a presentation of the common principles at the basis of Intertemporal Dynamic Asset Pricing Theory. Mathematical background will be provided.

LEARNING OUTCOMES

After having taken this course participants will be able to work as a quant in three main fields of the Financial Industry: Asset Management, Derivatives Trading and Pricing and Valuation. Beyond the technical aspects of the field, the student should understand the economic motivation and the parsimony of the continuous time setting for addressing complicated issues.

PREREQUISITES

The prerequisites for the course include working knowledge of calculus, probability, statistics, linear algebra as well as the math foundations and basic principles of linear programming. In addition, the students are supposed to master the basics of Financial Theory (portfolio choice, diversification,…) and Derivatives (options, futures, binomial model,…).

COURSE CONTENT

- Lecture 1: Introduction
- Lecture 2: Mathematical tools of continuous time finance
- Lecture 3: Derivatives Pricing
- Lecture 4: Dynamic Asset Allocation
- Lecture 5: Equilibrium Asset Pricing (CAPM, ICAPM, CCAPM)
- Lecture 6: Equilibrium term structure dynamics

TEACHING & LEARNING METHODS

Technical developments will alternate with examples and applications to practice as well as cover additional material.

ASSESSMENT METHODS

Students will be evaluated on the basis of a written final exam accounting for 100% of the overall grade.

READINGS

At this stage of your training, you should be able to look at several books and decide which one is better suited for you. I am providing some references but the material I cover could be found in many more books. The ultimate decision of which book to buy is yours.

Introductory books:

- Ingersoll, Jonathan E., 1987, *Theory of Financial Decision Making,* Rowman & Littlefield, Savage, Maryland.

- Cvitanic Jaksa and Fernando Zapatero, 2004, *INTRODUCTION TO THE ECONOMICS AND MATHEMATICS OF FINANCIAL MARKETS.* MIT Press.

Slides distributed before or during the lectures.

Exercises solved during the meetings.

ADVANCED TEXTBOOKS

- Finance with Monte Carlo / Series: Springer Undergraduate Texts in Mathematics and Technology / Shonkwiler, Ronald W., 2013
- Derivative Pricing in Discrete Time / Series: Springer Undergraduate Mathematics Series / Cutland, Nigel J., Roux, Alet, 2013
- Risk and Portfolio Analysis / Principles and Methods / Series: Springer Series in Operations Research and Financial Engineering / Hult, H., Lindskog, F., Hammarlid, O., Rehn, C.J., 2012
- Introduction to the Mathematics of Finance / Arbitrage and Option Pricing / Series: Undergraduate Texts in Mathematics / Roman, Steven, 2012
- Stochastic Calculus for Finance II / Series: Springer Finance / Subseries: Springer Finance Textbooks / **Shreve**, Steven, 2004

17_M2_NI_FMK_S2_ELE_FIN_744: C++ FOR FINANCE

NUMBER OF HOURS: 15
SEMESTER 2
INTERNATIONAL PROGRAMME - 2 ECTS
COURSE COORDINATOR: Dominic O'KANE

COURSE OBJECTIVES

Rapid introduction to the C++ programming language which is widely used within quantitative finance. The course is very “hands-on” and combines a mixture of practical class room exercises together with short lectures setting out the concepts. The examples involve constuction of a basic bond analytics library and some option pricing.

LEARNING OUTCOMES

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

- Write a program in C++ involving functions and classes that can perform financial calculations.
- Be able to understand and evaluate existing code
- Appreciate the advantages of the object oriented coding paradigm

PREREQUISITES

Some previous programming experience in Basic or VBA would be helpful but is not essential. I would strongly recommend that students obtain one of the recommended texts listed below as preparation. We will cover a lot quickly so it will help you to make the most of it if you have some prior knowledge.

COURSE CONTENT

We begin by setting out why C++ is such an important programming language. We then start on our first project. We explain how to do this in Microsoft Visual C++. A simple first project is created and compiled. We explain what compiling and linking involves. Students learn about input/output streams, include files and the main() function. We next explain variable types, accuracy issues, enumerated types, mathematical operations, formatting of outputs, simple loops, conditionals and other program flow logic. Following this we describe how large programs are organised. We discuss recursion and show how functions can be separated across files. We explain the art of debugging. We then start to discuss C++ classes. We begin with the standard C++ string and vector classes. This leads us to the object oriented programming (OO) paradigm. We explain this through the construction of a simple bond pricing and risk management library. Students will learn how to write a new class, how to use this class and should begin to appreciate the power of the OO approach. We finish by examining how to design classes for valuing and risk-managing call and put options.

TEACHING & LEARNING METHODS

Classes will be intensive with short lecture sessions followed by hands-on implementation sessions.

ASSESSMENT METHODS

- 40% group coursework
- 60% final exam (MCQ plus essay questions)

READINGS

At least one introductory book. Example: Beginner Programming C++ for Dummies, John Wiley, 2010

17_M2_NI_FMK_S2_ELE_FIN_746: COMMODITIES

NUMBER OF HOURS: 15
SEMESTER 2
INTERNATIONAL PROGRAMME - 2 ECTS
COURSE COORDINATOR: Joëlle MIFFRE

COURSE OBJECTIVES

The elective provides a comprehensive overview of commodities markets and investments, detailed knowledge of commodity futures pricing, and state-of-the-art techniques for strategic and tactical asset allocation to commodities. It also sheds academic light on the available investment vehicles, on the financialization of commodity markets and the role of speculators. Finally, insights on the trading of commodities based on the signals studied in class will brought forward to the participants in the Reuters trading rooms.

The elective addresses such questions as:

- What are the fundamentals of commodity futures pricing?
- How incidental are hedging pressure and inventory levels at capturing the risk premium present in commodity futures markets?
- How to integrate commodities in strategic asset allocation decisions?
- How to optimise the diversification properties of commodity programmes?
- How to use commodities as hedge against inflation?
- What is the case for commodities as a tactical asset class?
- How to decide between active and passive commodity investing?
- How to choose between competing commodity indices?
- Is there a justification for investing through CTAs?
- Shall we hold speculators or fundamentals responsible for the recent volatility spikes observed in commodity markets?
- How to trade commodities using Reuters?

LEARNING OUTCOMES

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

- Understand the theories that underpin the pricing of commodity futures,
- Appreciate the role of commodities for strategic and tactical asset allocations,
- Differentiate the investment vehicles available to implement those asset allocations,
- Understand the role of speculators on price volatility
- Trade commodities using Reuters

PREREQUISITES

None

COURSE CONTENT

I. Commodity Markets and Outlook

II. Commodity Fundamentals

III. Commodities as a Strategic Asset Class

IV. Commodities as a Tactical Asset Class

V. Investment Opportunities

VI. The Financialization of Commodity Futures Markets

VII. Trading Session

TEACHING & LEARNING METHODS

Lectures/Trading session

ASSESSMENT METHODS

Coursework done in group

READINGS

Textbook: There is no textbook that covers all the topics studied in class. While the papers listed below will be discussed at length, they only cover part of the material used in class and a detailed reference list is available at the end of each set of lecture notes.

Required readings: Useful references for the coursework include - but are not limited to:

- Erb, C., and C. Harvey, 2006, The strategic and tactical value of commodity futures, Financial Analysts Journal 62, 2, 69-97; also available on ssrn.com
- Fuertes, A-M., J., Miffre, and G., Rallis, 2010, Tactical allocation in commodity futures markets: Combining momentum and term structure signals, Journal of Banking and Finance 34, 10, 2530–2548; also available on ssrn.com
- Gorton, G., and G. Rouwenhorst, 2006, Facts and fantasies about commodity futures, Financial Analysts Journal 62, 2, 47-68; also available on ssrn.com
- Miffre, J., 2016, Long-short commodity investing: A review of the literature; available on ssrn.com

Additional readings: See reference list at the end of each lecture note.

17_M2_NI_FMK_S2_FMK_ELE_4899: MACROECONOMY, INVESTMENTS AND FINANCIAL MARKETS

NUMBER OF HOURS: 15
SEMESTER 2
INTERNATIONAL PROGRAMME - 2 ECTS
COURSE COORDINATOR: Jean-Philippe BLOCHET / To be completed

COURSE OBJECTIVES

TO BE COMPLETED

17_M2_NI_FMK_S2_ELE_FIN_4507: MONETARY POLICY AND CENTRAL BANKS' WATCHING

NUMBER OF HOURS: 15
SEMESTER 2
INTERNATIONAL PROGRAMME - 2 ECTS
COURSE COORDINATOR: Giorgio DI GIORGIO

COURSE OBJECTIVES

This course aims at explaining how central banks changed their modus operandi after the financial crises and why they have been given new assignments and responsibilities in banking and financial supervision.

After a brief review of some background macroeconomic tools (solution of models with rational expectations) the course will introduce a theoretical framework for the study of how monetary policy should be conducted and will then evaluate the current practice of the major central banks and their operational framework, pre and post the financial crisis. An appraisal of the recent progresses in the construction of a banking union in Europe will be also provided.

LEARNING OUTCOMES

After having taken this course participants will be able to:

- Evaluate debates about conduct of monetary policy
- Assess how different central banks perform their institutional duties
- Appreciate the interaction between monetary policy, financial regulation and supervision and systemic stability

PREREQUISITES

none

COURSE CONTENT

1. Review of background material and rational expectations (Session 1)
2. The Theory of Monetary Policy: rules versus discretion. Credibility versus Flexibility. Independence, accountability and transparency. (Session 1)
3. The Practice of central banking: final, intermediate and operating targets for monetary policy: FED vs ECB (with some hints on BOJ, BOE and PBC). (Session 2)
4. The Practice of central banking: instruments and operating procedures, pre and post the financial crisis. (Session 2)
5. The Transmission Mechanisms: yield curve, interest and exchange rate channels, asset prices, credit channel. (Session 3)
6. Monetary Policy, Financial Stability, Banking Supervision. The evolution of banking and financial regulation and the European banking union (Session 3)

TEACHING & LEARNING METHODS

Classes and assignments

ASSESSMENT METHODS

Assessment will be based on class participation (10%) and on a final written exam (90%) covering either one or all of the three

learning outcomes detailed above. Final will be in the form of a short essay to be completed in a max of 45 minutes.

READINGS

References will be provided at the beginning of classes and will include lecture notes, slides and material published on central banks' official web sites.

Below, students can find a preliminary list of some useful reading (starred are required):

- Di Giorgio G. (2014): Monetary Policy Challenges: How Central Banks Changed their Modus Operandi, Eurasian Economic Review.*
- Carmassi J., Curcio D. and Di Giorgio G. (2015): Financial Regulation and Supervision in Europe: Emerging Trends, Costs and Effectiveness, CASMEF wp. 5, Università LUISS Guido Carli.*
- Veron, N. (2015): Europe's radical banking union, Bruegel Essay, Bruxelles.

17_M2_NI_FMK_S2_ELE_4790: BIG DATA APPLICATIONS FOR FINANCIAL MARKETS

NUMBER OF HOURS: 15
SEMESTER 2
INTERNATIONAL PROGRAMME - 2 ECTS
COURSE COORDINATOR: Gideon OZIK - To Be Completed

COURSE OBJECTIVES

This course will focus on (big) data driven application for financial markets. Rather than teaching data science, the focus of the course will be to investigate and evaluate research approaches to large datasets and the application derived from them. Special emphasis is given to hands-on assignments as well as a 3-hour workshop which focusing on building data-driven models.

PREREQUISITES

Students are expected to have completed statistics courses, investment theory / portfolio management and have proficiency in at least one high-level computer language (Matlab, Python, etc.).

COURSE CONTENT

1) Introduction: data shapes present and the future

- a. healthcare
- b. security and law-enforcements
- c. behavioral science
- d. marketing and brand management
- e. other applications

2) Supply of information

- a. media coverage
- b. press releases
- c. information dissemination models
- d. social network
- e. basic textual analysis

3) Micro economics and fragmented data

- a. corporate activity
- b. analysis of corporate earnings calls (text, voice, guidance)
- c. earnings prediction models

4) Macro economics and unstructured data

- a. The FED
- b. Analyzing speeches
- c. Foreign exchange

5) Workshop

- a. getting market data

- b. working with unstructured data
- c. building prediction models

6) Analyst recommendations

- a. traditional analyst data
- b. crowdsourcing
- c. gamifications

7) Freedom of information act

- a. FOMC meetings
- b. Pharmaceutical industry