Année universitaire 2025/2026

M1 : Première année du Master - Research in Finance

Responsable pédagogique : DELPHINE **LAUTIER** - https://sites.google.com/site/delphinelautierpageweb/

Les objectifs de la formation :

"Research in Finance" est un parcours de la 1re année de Master Finance, entièrement enseigné en anglais.
Ce parcours est recommandé aux étudiants qui ont l'intention de postuler en 2ème année de master 104 "Research in Finance". Les cours et séminaires obligatoires de cette voie Recherche fournissent la base de connaissances idéale pour réussir le cursus du M2 104, tandis que les séminaires optionnels permettent de se spécialiser dans un domaine (par exemple la finance d'entreprise, la gestion d'actifs, la finance quantitative...).

POURSUITE D'ÉTUDES

Après la 1re année du Master Research in Finance, les étudiantes et les étudiants peuvent choisir entre plusieurs M2, en formation initiale ou en alternance. Avant d'intégrer un M2, ils peuvent réaliser une année de césure si leur cursus le permet, afin de développer une expérience professionnelle en France ou à l'étranger : stage, CDD, service civique, entreprenariat, formation complémentaire…?

En 2ème année de Master, les étudiantes et les étudiants choisissent une spécialisation afin de préciser leur domaine de compétences et se professionnaliser. Ils bénéficieront d'enseignements de haut niveau dispensés par des enseignants-chercheurs de Dauphine et d'intervenants extérieurs issus du monde de l'entreprise.

Enfin, l'université aide les étudiantes et les étudiants, à se préparer à l'entrée sur le marché du travail au travers de nombreux projets professionnels ou dispositifs de stage. Les jeunes diplômés de Dauphine bénéficient ainsi d'un taux d'insertion professionnelle très élevé.

Dans le cas d'un Master recherche, cette 2ème année leur permettra de préparer au mieux leur projet de recherche, pour s'orienter par la suite vers un doctorat.

PROGRAMME DE LA FORMATION

- Semester 1
  - Mandatory Fundamental S1
    - Derivatives : Instruments and markets
    - Investment and financial markets
    - Fixed income markets
  - Specialisation Seminars S1 : Choose 2 mandatory courses + 1 to choose
    - Financial analysis
    - International finance
    - Introduction to econometrics
    - Microeconomics for finance
  - Broadening Seminars S1 : Choose 1 mandatory course + 1 to choose
    - Private equity
    - Algorithms and programming
    - Financial econometrics
- Semester 2
  - Mandatory Fundamental S2

        - Corporate finance
        - Financial modeling and applications (VBA)
        - Banking and financial intermedation
    - Specialisation Seminars S2 : Choose 1 mandatory course + 1 to choose
        - Behavioral finance
        - Introduction to quantitative finance
        - Business valuation
        - Financial macroeconomics
    - Broadening Seminars S2 (2 mandatory courses)
        - Research methodology and practice
        - Master's Thesis

DESCRIPTION DE CHAQUE ENSEIGNEMENT

SEMESTER 1

Mandatory Fundamental S1

Derivatives : Instruments and markets

ECTS : 6

Enseignants : DELPHINE **LAUTIER**, EVGENIA **PASSARI**
https://sites.google.com/site/delphinelautierpageweb/
https://dauphine.psl.eu/recherche/cvtheque/passari-evgenia-1

Langue du cours : Anglais

Description du contenu de l'enseignement :

- Introduction to derivative markets and derivative instruments

- The characteristics and the valuation of futures and forward contracts

- Risk management with futures

- The characteristics and the valuation of option contracts

- Swaps and OTC instruments

- Interest rate risk: definition and management with futures contracts

- Credit risk: definition and management with derivative instruments

Compétences à acquérir :

- Understanding, on the basis of concrete examples (commodities, interest rates, equities, ...), the functioning of derivatives markets and their organization (OTC markets / organized markets).

- Explain the use of the main derivative instruments such as futures, options and swaps.

- Master the basics of the evaluation of these instruments.

Mode de contrôle des connaissances :

Mid-term exam : 30%

Final exam: 70%

Bibliographie, lectures recommandées :

- Hull J.C, *Options, futures and other derivatives*
- Hull J.C, *Options, futures and other derivatives : solutions manual*
- The handout associated to the course.

En savoir plus sur le cours :https://moodle.psl.eu/course/view.php?id=30081

Investment and financial markets

ECTS : 6

Enseignant responsable : FABRICE **RIVA** (https://dauphine.psl.eu/recherche/cvtheque/riva-fabrice)

Langue du cours : Anglais

Description du contenu de l'enseignement :

The objective of this course is to introduce students to the key concepts required to understand how capital markets (primarily equity markets) function. The course is organized into five parts.

Part 1 examines the organization of trading. The structure of European stock exchanges has evolved significantly over the past 20 years, driven by advances in information technology and changes in the European regulatory environment. Open-outcry systems have gradually been replaced by computer-assisted, continuously operating trading platforms. New

trading protocols such as Multilateral Trading Facilities (MTFs) and Dark Pools have emerged; real-time remote access has become standard; high-frequency trading has grown rapidly with latency now below 1 millisecond, while trading costs have fallen sharply.

Financial intermediation has also evolved. The Investment Services Directive (ISD) reshaped the European regulatory landscape by ending the mandatory concentration of orders on a single exchange. Former national monopolies now compete with new entrants, and Euronext's market share has fallen from 100% to less than 50%. Major European companies are now traded across multiple venues. To understand these developments, students must first grasp the sources of transaction costs (both explicit and implicit) and the concept of liquidity. These topics will be covered in detail, with a particular focus on the evolution of Euronext.

Part 2 introduces the core concepts of return, risk, and the optimization of the risk-return trade-off through efficient portfolios. After defining returns (discrete and continuous) and presenting common risk measures (such as volatility and Value at Risk), the course studies the joint behavior of assets within portfolios. This leads to an understanding of diversification benefits and forms the basis for computing efficient portfolios using Markowitz's program and tracing the efficient frontier.

Part 3 explores how investors incorporate risk into their decisions. It explains how to measure risk aversion and how it influences market equilibrium. This section derives the Capital Asset Pricing Model (CAPM) and, after discussing its limitations, introduces multi-factor pricing models, notably the Fama–French three-factor model.

Part 4 is more applied. It shows how the concepts developed in the earlier parts can be used for stock selection and for evaluating the performance of portfolio managers.

Part 5 studies how information is incorporated into asset prices. The seemingly erratic behavior of stock prices may raise doubts about their informational content: Do prices truly convey valuable information? Why should firms choose to be publicly traded? In an informationally efficient market, the expected gain from price forecasting is zero, but is this actually the case? Although market anomalies (abnormal returns) do exist, closer examination shows that many can be interpreted as compensation for hidden costs (e.g., transaction or information costs) or for bearing additional risks.

Compétences à acquérir :

Course objectives:

- Analyze the functioning of markets, trading costs, and liquidity
- Apply the concepts of risk, diversification, and portfolio theory to real situations
- Develop and work with asset pricing models
- Use asset pricing models for stock picking, asset allocation, and fund performance measurement
- Examine how information is incorporated into prices and evaluate price behavior in efficient markets

Pré-requis recommandés

Though there will be brief reminders during the classes of the mathematical and statistical tools that are needed to understand the various concepts used in the course, students must have some prior knowledge of the following concepts: calculus (derivatives, Taylor expansion), probability (discrete and continuous variables, moments, covariance, correlation), statistics (sample estimators, linear regression), linear algebra (matrix operations) and optimization (Lagrangian).

Mode de contrôle des connaissances :

12 3-hour classes. Practical examples and solutions to exercises in class.
Grading: mid-term exam (40%) and final exam (60%).

Coefficient : 1

Bibliographie, lectures recommandées :

Class handouts are downloadable from course webpage on MyCourse
Bodie Z., A. Kane, A. Marcus, 2014. Investments. McGraw-Hill, 10th ed.Harris, L., 2003. Trading and Exchanges: Market Microstructure for Practitioners. Oxford University Press.
Harris, L., 2003. Trading and Exchanges: Market Microstructure for Practitioners. Oxford
University Press.
Hillier D., Grinblatt M. and S. Titman, 2011. Financial Markets and Corporate Strategy. Irwin-Mc Graw Hill, 2nd European edition.
Madura, J. 2015. Financial Markets and Institutions. South Western, 11th ed.

Fixed income markets

ECTS : 6

Enseignant responsable : CAROLE **GRESSE** (https://www.marchesdetauxdinteret.fr/)

Langue du cours : Anglais

Description du contenu de l'enseignement :

This course aims at presenting the fundamental principles of fixed income investments. It starts with a description of debt securities, debt markets, and risks associated with investing in corporate and sovereign bonds. The course recalls the traditional valuation model of bonds and explains how to measure bond returns. It explains the relations between yields, spot interest rates, and forward rates, and presents the interest rate term structure. It studies the measurement of interest rate risk and the impact of credit risk on corporate bond valuation. The course also addresses the arbitrage-free valuation approach.

Compétences à acquérir :

At the end of this course, students should know:
- how to price non-sophisticated fixed income securities with the traditional approach and the no-arbitrage approach,
- which risks affect bond portfolios and how to appraise them,
- how to measure interest rate risk with duration and convexity,
- how to derive zero-coupon rates and forward rates from a yield curve,
- the main theories explaining the interest rate term structure.

Pré-requis obligatoires

Mathématiques financières at the L3 level for students from the Dauphine "licence" in "Management et gestion des organisations"

Pré-requis recommandés

Fixed Income Mathematics at the bachelor level

Mode de contrôle des connaissances :

Tutorial participation: 20%
Final exam: 80%

Coefficient : 1

Bibliographie, lectures recommandées :

Adams, James F., and Smith, Donald J., *Fixed Income Analysis*, 5th edition, 2022, Wiley, CFA Institute Investment Series.

En savoir plus sur le cours :https://moodle.psl.eu/

Specialisation Seminars S1 : Choose 2 mandatory courses + 1 to choose

Financial analysis

ECTS : 3

Enseignant responsable : Guillaume **RENARD** (https://dauphine.psl.eu/recherche/cvtheque/renard-guillaume)

Langue du cours : Anglais

Description du contenu de l'enseignement :

- Financial Analysis and Financial Statements
- FA using ratios

- Master the tools of financial analysis
- Master the tools of financial analysis
- Present the main methods for valuing companies

International finance

ECTS : 3

Enseignant responsable : EVGENIA **PASSARI** (https://dauphine.psl.eu/recherche/cvtheque/passari-evgenia-1)

Langue du cours : Anglais

Description du contenu de l'enseignement :

The aim of this module is to provide a thorough foundation of the key concepts in international finance with a focus on exchange rate economics. The module begins with an overview of the institutional characteristics of the foreign exchange market and subsequently examines the fundamental determinants of exchange-rate dynamics. By the end of the course the students will be familiar with both the theoretical models and the empirical evidence regarding exchange-rate behaviour. Emphasis will be given to the implications of these outcomes for exchange rate forecasting, international diversification and investment decisions.

Course outline

- Week 1: Foreign Exchange Market Structure
- Weeks 2 and 3: Foreign Exchange Market Eficiency
- Weeks 4 and 5: Real Exchange Rate and Purchasing Power Parity
- Week 6: Balance of Payments
- Weeks 7 and 8: Exchange Rate Determination

Mode de contrôle des connaissances :

Mid-term (30%) and final exam (70%).

Bibliographie, lectures recommandées :

General
Bekaert, G. and R.J. Hodrick (2009). International Financial Management. New Jersey: Pearson Education.
Sarno, L. and M.P. Taylor, (2005), The Economics of Exchange Rates, Cambridge University Press.
Specific
Week 1

- Bekaert and Hodrick, Ch. 2 & 3.
- King, M.R., Osler, C. and D. Rime (2012). Foreign Exchange Market Structure, Players and Evolution, in James, Marsh and Sarno (eds.), Handbook of Exchange Rates, Wiley.
- Foucault, T., Kozhan R. and W. Wah Tham (2017). Toxic Arbitrage Review of Financial Studies, 30, 1053-1094.

Weeks 2 and 3

- Bekaert and Hodrick, Ch. 6 & 7.
- Akram, Q.F., Rime, D., and L. Sarno (2008). Arbitrage in the Foreign Exchange Market: Turning on the Microscope, Journal of International Economics, 76, 237-253.

Weeks 4 and 5

- Bekaert and Hodrick, Ch. 8 & 9.
- Marsh, I., Passari, E., and L. Sarno (2012). Purchasing Power Parity in Tradable Goods, in James, J., L. Sarno and I.W. Marsh (eds.) Handbook of Exchange Rates, London: Wiley.

Week 6

- Bekaert and Hodrick, Ch. 4 & 5.
- Rey, H. (2013). Dilemma not Trilemma: The Global Financial Cycle and Monetary Policy Independence, Federal Reserve Bank of Kansas City Economic Policy Symposium.

Weeks 7 and 8

- Bekaert and Hodrick, Ch. 10.
- Mark N. C. (1995). Exchange Rates and Fundamentals: Evidence on Long-Horizon Predictability, The American Economic Review, 85, 201-218

Introduction to econometrics

ECTS : 3

Enseignant responsable : GAELLE **LE FOL** (https://dauphine.psl.eu/recherche/cvtheque/le-fol-gaelle)

Langue du cours : Anglais

Description du contenu de l'enseignement :

Introduction : issues and problems of financial econometrics ; Simple and multiple regression models ; Statistical inference and regression quality ; Hypotheses and tests of the hypotheses of the linear regression model ; Applications : linear regression models in finance.

Compétences à acquérir :

This course is an introduction and/or refresher course in Econometrics that focuses on techniques for estimating regression models, on problems commonly encountered in estimating such models, and on interpreting the estimates. The goal is to provide participants with the basic skills and knowledge necessary to undertake empirical research and to prepare them to more advanced course in Econometrics for Finance. Gretl will be the econometric software used in the course (alternatively, Python or R can be used). If some theoretical aspects will be studied, the focus is more on the acquisition of a scientific empirical approach.

Concretely, this course will allow students to

- **keep a critical eye on econometrics results,**
- **acquire a method to answer economic and financial questions in a quantified manner**
- **to use this knowledge to carry out basics empirical studies in finance.**

Pré-requis obligatoires

Applied statistics, Financial Mathematics (BSc. in Economics and Management Level)

Pré-requis recommandés

A first cours in programming

Bibliographie, lectures recommandées :

- Adkins, L., 2018, *Using Gretl for Principles of Econometrics*, 5th Edition, Version 1.0, http: ;
- Brooks C., 2019, *Introductory Econometrics for Finance*, 4th Edition, Cambridge University Press, 724 pages ;
- Carter Hill R., W. E. Griffiths and G.C. Lim, 2018, Principles of Econometrics, 5th Edition, John Wiley & Sons, 912 pages.

Pre-requisites:

- Anderson, D., D. Sweeney, T. Williams, J. Camm, and J. Cochran, 2019 *Statistics for Business & Economics*, 14th Edition, Cengage Learning, 1120 pages ;
- Jacques, J., 2018, *Mathematics for Economics and Business*, 9th Edition, Pearson, 752 pages;
- Le Fol, G., 2022, *A (Very) Short introduction to Gretl using scripts*, Mimeo, 6 pages ;

Microeconomics for finance

ECTS : 3

Enseignant responsable : JEROME **DUGAST** (https://dauphine.psl.eu/recherche/cvtheque/dugast-jerome)

Langue du cours : Anglais

Description du contenu de l'enseignement :

Syllabus:
1. Equilibrium in an Exchange Economy
2. Decision Making under Uncertainty
3. Equilibrium in Markets for Securities
4. Investment Decision under Market Imperfections: the Principal-Agent Problem

Compétences à acquérir :

This 24 hours course aims at acquainting students with relevant microeconomics methods to tackle finance issues.

Pré-requis recommandés

Basic notions of mathematical analysis and algebra are required.

Mode de contrôle des connaissances :

Final exam and assignment

Broadening Seminars S1 : Choose 1 mandatory course + 1 to choose

Private equity

ECTS : 3

Enseignant responsable : ANTOINE **RENUCCI**

Langue du cours : Anglais

Description du contenu de l'enseignement :

- Private Equity
- Start-up
- Leverage Buy Outs
- Debt restructuring

- The objective of this course is to provide students who wish to work in this industry or who want to study the specifics of private equity financing with the necessary tools.
- Professionals from the industry are invited to present real-world cases.

Algorithms and programming

ECTS : 3

Enseignant responsable : JUAN FELIPE **IMBET JIMENEZ** (https://amandri.github.io/)

Langue du cours : Anglais

Description du contenu de l'enseignement :

Theory + Practical sessions

Compétences à acquérir :

Beginner/intermediate knowledge of Python

Financial econometrics

ECTS : 3

Enseignant responsable : GAELLE **LE FOL** (https://dauphine.psl.eu/recherche/cvtheque/le-fol-gaelle)

Langue du cours : Anglais

Description du contenu de l'enseignement :

Going further the introductory course : « TRUE » model and DGP ; Revisiting the multiple regression model: Hypotheses, statistical inference, criteria for model selection, dummy and explanatory variables ; Revisiting OLS hypotheses violation, tests and correction : Heteroskedasticity, Autocorrelation, Normality, Multicollinearity, Exogeneity, specification error ; Alternative to OLS: Two stage least squares (2SLS), Maximum likelihood, Generalized least squares (GLS), Quantile regression (if time permits).

Compétences à acquérir :

This second course of econometrics applied to finance has three objectives: The first is to comeback to some of the theoretical aspects of econometrics in order to better understand how it works, what are the implications of assumption failures, and what to do to correct the estimators and their precision. The second objective aims to discuss the practices and the concrete implementation of these methods and their corrections as well as new estimation tools. Finally, the third objective is in the way this course is approached as it is based on simulation.

Concretely, simulating the "real" model and observing what happens when we are not in the conditions of use of an estimator, a quality criterion or a test allows:

1. *to master the details of the regression tools (simulation of the data generating process - DGP -, choice of the characteristics and laws of variables, choice of hypotheses, etc)*
2. *to understand the consequences of any assumption failure as well as the interaction of several failures,*
3. *to use this knowledge to carry out empirical studies.*

Pré-requis obligatoires

Statistiques appliquées à la gestion (L3), Mathématiques financières (L3), Introduction to Econometrics (M1)

Bibliographie, lectures recommandées :

- Adkins, L., 2018, *Using Gretl for Principles of Econometrics*, 5th Edition, Version 1.0, http: http://www.learneconometrics.com/gretl/poe5/using_gretl_for_POE5.pdf ;
- Brooks C., 2019, *Introductory Econometrics for Finance*, 4th Edition, Cambridge University Press, 724 pages;
- Carter Hill R., W. E. Griffiths et G.C. Lim, 2018, Principles of Econometrics, 5th Edition, Wiley, 912 pages;
- Gudjarati D. N., 2011, *Basics Econometrics*, 5th Edition, De Boeck, 1010 pages.

SEMESTER 2

Mandatory Fundamental S2

Corporate finance

ECTS : 6

Enseignants : ZORAN **FILIPOVIC**, EDITH **GINGLINGER**
https://dauphine.psl.eu/recherche/cvtheque/filipovic-zoran
https://dauphine.psl.eu/recherche/cvtheque/ginglinger-edith

Langue du cours : Anglais

Description du contenu de l'enseignement :

This course examines important issues in corporate finance from the perspective of financial managers who are responsible for making significant investment and financing decisions. The concept of net present value, suitably adapted to account for taxes, uncertainty, and strategic concerns, is used to analyze how investment and financing decisions interact to affect the value of the firm. The course covers topics such as capital structure, cost of capital, capital budgeting in the presence of uncertainty, payout policies.

The primary purpose of this module is to provide an integrated overview of the most important concepts in Corporate Finance, both in theory and in practice. The subject extends the student's knowledge about the context in which corporations operate. While the course is not designed to dwell on abstraction, the basic theoretical underpinnings of the various topics are a prerequisite to competent analysis and intellectual discussion. We emphasize the development of problem-solving skills based on a good understanding of the business environment as opposed to pure theorizing. Because of the practical importance of the material and as an illustration of the relevant theory, we will discuss examples and cases.

Compétences à acquérir :

- After completing this module, the student should be able to:
  · use the CAPM and apply skills in estimating cost of equity
  · estimate the cost of each source of capital and calculate a weighted average cost of capital for a company
  · compare and contrast leverage strategies in ideal versus real capital markets and be able to explain the expected impact of alternative taxation systems on the use of debt in a firm's capital structure
  · understand capital structure and outline the main factors that financial managers should consider when determining a company's financing strategy and payout policy
  · use capital budgeting tools in presence of uncertainty ; introduce extra-financial criteria in the investment decision making process
  · critically apply and discuss the theories relating dividends to share price and cost of capital

Pré-requis recommandés

The prerequisite for this course is a course of Introduction to Finance (for example 2110 U08-corporate finance L3). Some basic familiarity with Excel will be assumed. It is expected that students will be comfortable with the following topics: time value of money, risk-return trade-off, valuation of bonds and stocks, Capital Asset Pricing Model (CAPM).

Coefficient : 1

Bibliographie, lectures recommandées :

· Berk J., et P. DeMarzo, Corporate finance, Pearson, 2016
· Brealey R., S.Myers, F.Allen Principles of corporate finance, Mc Graw Hill, 2016
· Vernimmen P., P.Quiry, Y.Le Fur, Corporate finance, Dalloz, 2017

Financial modeling and applications (VBA)

ECTS : 6

Enseignant responsable : FABRICE **RIVA** (https://dauphine.psl.eu/recherche/cvtheque/riva-fabrice)

Langue du cours : Anglais

Description du contenu de l'enseignement :

Part 1: Introduction to VBA programming

- The Excel object model
- The VBA language: variables, conditional statements, loops

Part 2: Financial modeling

- Properties of stock returns
- Diversification and optimal portfolios
- Option pricing

Compétences à acquérir :

This course enables students to use VBA programming in Excel to build financial models and address a range of standard financial problems.

Pré-requis obligatoires

Basic knowledge in coding (variables, loops, consitional statements)

Mode de contrôle des connaissances :

Tutorial sessions (15%), Midterm exam (35%), Final exam (50%)

Coefficient : 1

Bibliographie, lectures recommandées :

- Jackson M. and Staunton M., "Advanced Modelling in Finance using Excel and VBA", Wiley Finance
- Riva F., "Applications financières sous Excel en Visual Basic", Economica (4ème édition)

Banking and financial intermedation

ECTS : 6

Enseignant responsable : Mattia **GIROTTI** (https://drm.dauphine.fr/fr/drm/membres/detail-cv/profile/mattia-girotti.html)

Langue du cours : Anglais

Description du contenu de l'enseignement :

Session Topic

1 Banks and Financial Intermediaries

2 Bank Accounting

3 Interest Rate Risk

4 Credit Risk

5 Liquidity Risk

6 Prudential Regulation

7 Financial Markets and Financial Intermediaries

8 Interbank Markets

9 Systemic Risk and Contagion

10 Money and Monetary Policy (part 1)

11 Money and Monetary Policy (part 2)

12 Blockchain and Decentralized Finance

Compétences à acquérir :

This is a graduate-level course aimed at providing in-depth knowledge of banks and financial intermediaries, their role in the economy, their specificities, and the regulation that applies to them. In the first part, the course describes banks and financial intermediaries, and the risks to which they are exposed. In the second part, the course discusses how banks and financial intermediaries deal with those risks, and the role of regulation. In the last part, the course presents money and monetary policy, with a particular focus on monetary policy transmission through banks, and decentralized finance.

By the end of the course, students should be able to identify and analyze challenges for banks and financial intermediaries and connect theoretical elements about banking discussed in class with the recent debate.

Pré-requis recommandés

A good knowledge of accounting and corporate finance is recommended.

Mode de contrôle des connaissances :

The final grade is based on a final exam.

Bibliographie, lectures recommandées :

Lecture notes are the main course material. In addition, these optional textbooks are recommended for this course:

- Saunders, Anthony, Marcia Millon Cornett, and Otgo Erhemjamts. Financial institutions management: A risk management approach. McGraw-Hill, 2021.

- Casu, Barbara, Claudia Girardone, and Philip Molyneux. Introduction to banking. Pearson, 2021.

Specialisation Seminars S2 : Choose 1 mandatory course + 1 to choose

Behavioral finance

ECTS : 3

Enseignant responsable : Marie-pierre **DARGNIES** (https://dauphine.psl.eu/recherche/cvtheque/dargnies-marie-pierre)

Langue du cours : Anglais

Description du contenu de l'enseignement :

-Violations of expected utility theory and alternatives to this theory

-Time preference: standard model (Discounted utility), violations, alternatives

- Overconfidence
- Bayesian updating and cognitive heuristics
- Behavior in strategic situations
- The endowment effect

- Over the past several decades, the field of finance has developed a successful paradigm based on the notions that investors and managers were generally "efficient". In recent years, however, anecdotal evidence as well as theoretical and empirical research have shown this paradigm to be insufficient to describe various features of current financial markets. Taking into account insights from psychology and the fact that investors and managers are sometimes affected by biaises has allowed a deeper understanding of financial markets. In this course we will study experimental and theoretical research to examine how the insights of behavioral finance complement the traditional paradigm.

Compétences à acquérir :

At the end of the course, students are capable of understanding quite complicated theoretical models and the differences and respective contributions of theory, empirical and (both field and lab) experimental work. Students are also able to understand a large amount of non-trivial quantitative content and make it their own such that they are able to use it in different contexts.

Pré-requis recommandés

Undergraduate micro (expected utility theory), conditional probabilities

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Introduction to quantitative finance

ECTS : 3

Enseignant responsable : EMMANUEL **LEPINETTE** (https://sites.google.com/view/emmanuel-lepinette/research-cv-and-others)

Langue du cours : Français et anglais

Description du contenu de l'enseignement :

The goal of this course is to provide a good background in quantitative finance. After some reminders on probability theory (change of probability measure, random variables, usual distributions, conditioning), the course is planed as follows:
1) Classical financial market modeling: stochastic basis, stochastic processes, price processes and self financing portfolio

processes in discrete-time. Examples of price dynamics and portfolio dynamics in continuous time; interpretation by discretization.
2) Fundamental theorem of asset pricing; pricing of European and Asian options.
3) Examples of pricing by Monte Carlo numerical simulations. Programming in Python applied to classical models, e.g. the Black and Scholes model.

Compétences à acquérir :

Théorie des probabilités et mathématiques financières.

Pré-requis recommandés

Il est préférable de vous mettre à niveau sur les notions suivantes: intégrales de Riemann, espace probabilisé, tribu, espérance, espérance conditionnelle.

Business valuation

ECTS : 3

Enseignant responsable : ZORAN **FILIPOVIC** (https://dauphine.psl.eu/recherche/cvtheque/filipovic-zoran)

Langue du cours : Anglais

Description du contenu de l'enseignement :

(Subject to adjustments)
1. Financial Analysis (review)
Value creation, WACC, DCF
2. Valuation Techniques
Valuation with changing capital structure, Adjusted Present Value (APV), Economic Value Added (EVA), Venture Capital Method, Valuation by parts, Real options, Earnouts
3. Applications and special situations
Leveraged Buyouts (LBO), Mergers and acquisitions (M&A), Private companies, High-growth companies, Emerging markets, Cyclical companies

Compétences à acquérir :

This course introduces advanced valuation techniques for analysis of a business, with focus on their usefulness in valuing and financing companies and in the evaluation of corporate performance. We will apply the techniques on real world cases such as leveraged buyouts (LBO) and mergers and acquisitions (M&A) and analyse several special situations like high-growth companies, emerging markets and private companies. Throughout the semester we will make extensive use of case studies so that you can gain the knowledge of the relevant theory and techniques and an ability to use them in actual situations. The course will combine traditional lectures, exercise sessions and case method teaching. You will be working individually and in groups.

Pré-requis recommandés

This is a master-level course that assumes students have had prior exposure to basic corporate finance principles, cash-flow discounting techniques and introductory accounting. Students should also be able to proficiently use Microsoft Excel and be able to access .pdf documents.

Mode de contrôle des connaissances :

• Final written exam
• Group work
The numerical grade distribution will dictate the final grade. The passing grade for a course is 10/20.
Class participation: Active class participation is encouraged thus all students should be able to verbally participate in class discussions. Class participation is based on quality of comments, not quantity. Come on time and prepared.

Bibliographie, lectures recommandées :

• Valuation: Measuring and Managing the Value of Companies, University Edition, by Tim Koller Marc Goedhart and David Wessels, McKinsey & Company, John Wiley & Sons, 2015, 6th edition
• Investment Banking: Valuation, Leveraged Buyouts, and Mergers and Acquisitions, by Joshua Rosenbaum and Joshua Pearl, John Wiley & Sons, 2nd edition
• Valuation: Mergers, Buyouts and Restructuring, by Enrique R. Arzac, John Wiley & Sons, 2nd Edition
• Corporate finance, Theory and Practice, by Pierre Vernimmen, Pascal Quiry, Maurizio Dallocchio, Yann Le Fur and

Antonio Salvi, John Wiley & Sons, 5th edition
• Vernimmen English website: www.vernimmen.com
• Data sources: COMPUSTAT, Companies' websites

Financial macroeconomics

ECTS : 3

Enseignant responsable : VERONIKA **SELEZNEVA** (https://sites.google.com/view/veronikaselezneva/home)

Langue du cours : Anglais

Description du contenu de l'enseignement :

Course outline (tentative)

1. *Deterministic dynamic optimization problems.*

a. Firm's hiring decision

b. Consumption & Savings Under Uncertainty

c. Theory of Investment

2. *Asset pricing and risk.*

a. Equity premium puzzle

3. *Monetary economics.*

a. Introducing money. Classical issues in monetary economics.

b. Introducing price setting. Monetary economics with frictions.

c. Monetary policy.

Compétences à acquérir :

This course studies the theoretical foundations of modern macroeconomics. The goal of the course is to develop intuition that can help us understand the dynamics of key macroeconomic variables and use formal models to derive policy implications. The students will be provided with the mathematical tools used in constructing dynamic stochastic general equilibrium models.

Pré-requis obligatoires

Intermediate macroeconomics and calculus.

Mode de contrôle des connaissances :

The grades will be determined as follows: homeworks, 10%; final project, together with its presentation, 90%.

Bibliographie, lectures recommandées :

The textbooks for the course are:

- Stokey, Nancy L., Robert E. Lucas, Jr., and Edward C. Prescott: Recursive Methods in Economic Dynamics. Cambridge: Harvard University Press, 1989.
- Ljungquist, Lars and Thomas J. Sargent: Recursive Macroeconomic Theory. Second Edition. MIT Press. 2004.
- Galí, Jordi. Monetary Policy, Inflation, and the Business Cycle: an Introduction to the New Keynesian Framework. Princeton University Press, 2008
- Cochrane, John H. Asset Pricing:(Revised Edition). Princeton university press, 2005.

Additional reading materials and the related readings will be made available later.

Broadening Seminars S2 (2 mandatory courses)

Research methodology and practice

Langue du cours : Anglais

Description du contenu de l'enseignement :

Knowledge of WRDS database

Compétences à acquérir :

How to use WRDS database

Master's Thesis

ECTS : 6

Enseignant responsable : EVGENIA **PASSARI** (https://dauphine.psl.eu/recherche/cvtheque/passari-evgenia-1)

Langue du cours : Anglais

Description du contenu de l'enseignement :

The master's thesis should address a precise question and methodology and display a rigorous treatment of the empirical analysis of this question. You will choose your research topic from a proposed list, and you will be guided through the methodology and the empirical treatment of the question.

The course is intended for both the students who would like to prepare for a research track but also for those who have a career goal in mind and would like to develop a set of data analysis and presentation skills for it.

Compétences à acquérir :

The aim of this module is to provide you with the necessary tools that will help you complete your master's thesis. It will give you the opportunity to deepen your knowledge in a topic of your interest and teach you to work independently and with confidence. The purpose of the master's thesis will be to conduct a study of an empirical question within the recent developments of the finance field, as well as to present the results of this study.

Mode de contrôle des connaissances :

The module is assessed via the master's thesis and its presentation via an oral examination. The oral examination will be scheduled after the submission of the master's thesis. The questions that will be posed during the oral examination will be linked to your research question, methodology, data analysis, etc.

Coefficient : 1

Bibliographie, lectures recommandées :

Slides, along with a companion reading list, will be provided by the lecturer.