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# **S4FIN571 :** VALUATION TECHNIQUES

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| **Course Leader :** | Iordanis KALAITZOGLOU | | | |
| **Instructors(s) :** | Iordanis KALAITZOGLOU | | | |
| **Course description :** | This module aims at addressing the key aspects of business valuation in the current economic climate. The first part focuses on the contexts of evaluation, the main methods and the importance of the evaluation process. An important part is devoted to the cost of capital and the components of various sources of capital. It is then possible to present the main evaluation methods and implement them in practical examples and actual case studies. Some case studies are carried out by professionals. The final session will open the debate through a reflection on the contributions and limitations of the method of real options. | | | |
| **Course objectives :** | At the end of this module, students should be able to:  • Compute the WACC and its components  • Use different techniques to value a firm  • Understand, search-seek and extract relevant information from various data sources  • Extract Information from the main financial statements  • Update and Adjust current figures  • Estimate Discount Rates  • Estimate Cash Flows  • Estimated Discount Rates  • Decide on what is the most appropriate evaluation for different companies  • Develop a group report | | | |
| **Learning goals and learning objectives :** | **LO01 - ANALYSE :** Collect information and assess its pertinence  **LO05 - ANALYSE :** Mobilize theoretical and/or experience-related knowledge | | | |
| **Tackled concepts :** | - Discount Rates  o Cost of Equity  o Cost of Debt  o WACC  - Estimate Cash Flows  o Measure and Update Earnings  o From Earnings to Cash Flows  - Estimate Growth  o Stable  o 2-stage Growth Models  o 3-stage Growth Models  - Relative Valuation  o Earnings Multiples  o Book Value Multiples  o Sales Multiples  - Real Options  o Option to Expand  o Option to Abandon  o Option to Delay  o Equity as an option to liquidate | | | |
| **Learning methods/Teaching procedures :** | 10 x 3 hour lectures will be used to introduce new material and to expand areas of financial theory but much of the learning will be done through case study work. Students will be required to analyse a situational problem and to put forward a solution for discussion. | | | |
| **Assignments :** | Mid-term exam : Group Coursework 30% of the final mark  Final Exam : Written Exam, 70% of the final mark, open book, calculator needed  For the group project, you will know your group and group members by the end of the first week of the module.  Late submissions will be penalized by 10%/day (max 30%) reduction of the final grade. | | | |
| **Evaluation :** | **Evaluation** | **Rate** | **Modality of the evaluation** | **Rate** |
| Final Control | 70 % | Final exam | 70 % |
| Continuous Control | 30 % | Team Project (presentation and report) | 30 % |
| **Bibliography/Course Material :** |  Damodaran on Valuation, Willey, 2nd edition  http://www.scholarvox.com/reader/index/docid/10051129/searchterm/damodaran   Investment Valuation, A. Damodaran, Willey, 2nd edition   Corporate Finance, European edition, HILLIER et al., 2010 | | | |
| **Number of credits :** | **4,00** | | | |
| **Course 's planning :** | 10 sessions x 3 hours | | | |

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| **Course 's planning** | | |
| **N° of session** | **Type of session** | **Detailed description of session** | |
| 1 | Course | **Introduction** | |
| 2 | Course | **DCF I**  - Discount Rates  o Cost of Equity  o Cost of Debt  o WACC  o Case Studies | |
| 3 | Course | **DCF II**  - Estimate Cash Flows  o Measure and Update Earnings  o From Earnings to Cash Flows  o Case Studies | |
| 4 | Course | **DCF III**  - Estimate Growth  o Stable  o 2-stage Growth Models  o 3-stage Growth Models | |
| 5 | Course | **DCF case studies**  - DCF Examples - Complete Case Studies – Full Valuations | |
| 6 | Course | **Relative valuation**  - Introduction to Relative Valuation  o Earnings Multiples  o Book Value Multiples  o Sales Multiples | |
| 7 | Course | **Relative valuation case studies**  - Relative Valuation and DCF Examples - Complete Case Studies – Full Valuations | |
| 8 | Course | **Real options**  - Introduction to Real Options  o Option to Expand  o Option to Abandon  o Option to Delay | |
| 9 | Course | **Real options case studies**  - Equity as an option to liquidate  - Real Option, Relative Valuation and DCF Examples - Complete Case Studies – Full Valuations | |
| 10 | Course | **Recoup and Revision** | |

# **S4FIN572 :** PORTFOLIO MANAGEMENT

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| **Course Leader :** | Giacomo NOCERA | | | |
| **Instructors(s) :** | Giacomo NOCERA | | | |
| **Course description :** | The course deals with the theory and the application of portfolio management techniques.  The aim is to survey the major theories, tools and results in portfolio management.  As the course emphasizes not only the theory, but also its practical application, by the end of this course, students are expected to have a good understanding of the asset management market, the financial instruments, and the market practitioners’ terminology.  In addition, they should be able to develop a fair knowledge and understanding of key issues in asset allocation and portfolio composition and management and to implement adequate portfolio management strategies.  The course is designed to cover most of the “Portfolio Management and Wealth Planning” topic area and many concepts of some of the other topic areas of the CFA Candidate Body of Knowledge. | | | |
| **Course objectives :** | The main objective of this course is to learn the key theory with practical applications relevant to portfolio management.  After completing this course students will be able to:  - Measure and manage portfolio risk and return  - Select and monitor an investment and build a portfolio  - Practically understand and apply asset pricing basics | | | |
| **Learning goals and learning objectives :** | **LO04 - ANALYSE :** Understand and use decision-making tools appropriately | | | |
| **Tackled concepts :** | Portfolio mathematics  Risk - return - utility functions  Asset pricing models  Index models  Portfolio performance evaluation  Passive and active portfolio management  Allocation of funds to portfolios | | | |
| **Learning methods/Teaching procedures :** | Lectures  Practical lab applications  Team project  Homework and self-assessed work  Classroom discussion | | | |
| **Assignments :** | Mid-term exam  Group coursework | | | |
| **Evaluation :** | **Evaluation** | **Rate** | **Modality of the evaluation** | **Rate** |
| Final Control | 60 % | Final exam | 60 % |
| Continuous Control | 40 % | Individual Written Assignment | 10 % |
| Team Project (presentation and report) | 30 % |
| **Bibliography/Course Material :** |  Z. Bodie; A. Kane; A.J. Marcus, Investments. McGraw-Hill International | | | |
| **Number of credits :** | **4,00** | | | |
| **Course 's planning :** | 10 sessions x 3 hours | | | |

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| **Course 's planning** | | |
| **N° of session** | **Type of session** | **Detailed description of session** | |
| 1 | Course | **Introduction: the asset management industry**  This session offers a description of the course (aims and objectives, teaching and learning methods, topics to be covered, class rules) and provides an introduction to the asset management industry. | |
| 2 | Course | **Quantitative tools for portfolio management**  This session is devoted to a review of the quantitative tools: the basics of return calculation, a review of basic statistics, regression analysis, and matrix algebra. | |
| 3 | Course | **The mean-variance framework**  This session introduces the concepts of return and risk as the main inputs of any asset allocation strategy and highlights the advantage (and the drawbacks) of using expected returns and variance of returns as the only indicators of return and risk.  It also shows how individuals’ preferences can be represented in such a mean-variance framework. | |
| 4 | Course | **Portfolio Selection: the theory**  This session presents the Markowitz’s model and shows how to build the optimal portfolios by using (i) 2 risky assets; (ii) a risky asset and a riskless one; (iii) n risky assets; (iv) n risky assets and a riskless one. It also shows how investor’s preferences enter the portfolio selection. | |
| 5 | Course | **Portfolio Selection: MS Excel application**  This session completes the previous one by showing how to generate the efficient frontier of financial portfolios using real data on Excel. The quadratic optimization approach (through Excel solver) is discussed. | |
| 6 | Course | **CAPM and index models**  In this session the Capital Asset Pricing Model, a centerpiece of the modern financial economics, is introduced and discussed critically. This session also introduces the index models (single-index and multi-index models), their advantages and limitations, how to estimate them and how to interpret this information.  Practical examples of index model applications are presented and the link between the market model and the CAPM is discussed. | |
| 7 | Course | **APT and multifactor models of risk and return**  In this session the Arbitrage Pricing Theory is outlined. The Fama-French multifactor model of risk and return is introduced and compared to the standard CAPM. | |
| 8 | Course | **The frontiers of portfolio diversification**  This session illustrates the benefits of a portfolio diversification across different markets, sectors, and different asset classes. An analysis of the main alternative asset classes is provided. | |
| 9 | Course | **Practical issues in portfolio management (I)**  This session deals with some practical issues in portfolio management: the rationale of the existence of different mutual funds, the need for benchmarks, the costs and benefits of two alternative investment approaches (active vs passive portfolio management), the performance evaluation measures (risk adjusted measures such as the Sharpe ratio, the Treynor ratio, the Jensen’s alpha, the appraisal or information ratio are presented). | |
| 10 | Course | **Practical issues in portfolio management (II)**  This session completes the previous one as it deals with the performance analysis of mutual funds and shows the standard approaches to decompose performances and identify investment styles. It also discusses the modern portfolio management process and its ethics as well as the different stages of the portfolio process. Finally, it deals with the remuneration of the asset management activity, through an analysis of the management fees and the mutual funds’ expense ratios. | |

# **S4FIN573 :** MODULE OF SPECIALIZATION

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| **Course Leader :** | Mascia BEDENDO | | | |
| **Instructors(s) :** | Mascia BEDENDO | | | |
| **Course description :** | The first part of the course covers credit derivatives (both single-name and structured products) and the market pricing of credit risk. The second part of the course deals with the measurement of market risk (Value at Risk, Expected Shortfall) in portfolios of financial assets. | | | |
| **Course objectives :** | The course aims at providing a technical and hands-on approach to credit risk and market risk measurement. At the end of the course students should be able to extract information on the credit quality of an entity from market prices of bonds and credit derivatives. In addition, they should be able to estimate the market risk of a portfolio of assets in terms of Value at Risk and Expected Shortfall. | | | |
| **Learning goals and learning objectives :** | **LO05 - ANALYSE :** Mobilize theoretical and/or experience-related knowledge | | | |
| **Tackled concepts :** | Financial concepts:  Credit risk and credit derivatives. Market pricing of credit risk. Structured credit products. Market risk measures: Value at Risk and Expected Shortfall.  Technical tools:  Multivariate distributions. Principal component analysis. Historical (non-parametric) simulation. Monte Carlo simulation. Bootstrapping techniques and calibration. Poisson default processes. Correlation modeling. | | | |
| **Learning methods/Teaching procedures :** | Standard Lectures. Exercises. Computer-based applications. | | | |
| **Assignments :** | One mid-term group empirical assignment (groups of 3-4 students)  The mid-term assignment accounts for 30% of the final grade. The final exam (exercises and open questions) accounts for the remaining 70% of the grade. | | | |
| **Evaluation :** | **Evaluation** | **Rate** | **Modality of the evaluation** | **Rate** |
| Final Control | 70 % | Individual Written Assignment | 70 % |
| Continuous Control | 30 % | Team Project (presentation and report) | 30 % |
| **Bibliography/Course Material :** |  Textbook: “Options, Futures, and Other Derivatives”, John C. Hull, Pearson Education   Primary reading material: Instructor’s slides, exercise sets, programming examples. | | | |
| **Number of credits :** | **4,00** | | | |
| **Course 's planning :** | 10 x 3 hours | | | |

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| **Course 's planning** | | |
| **N° of session** | **Type of session** | **Detailed description of session** | |
| 1 | Course | **Credit risk components**  Credit risk. Credit risk components: Country risk, sector risk, firm-specific risk. Recovery rates. Credit risk and the business cycle. | |
| 2 | Course | **Market measures of credit risk**  Market measures of credit risk: Bond yields and credit default swap spreads. An introduction to credit derivatives. | |
| 3 | Course | **Credit default swaps**  Credit default swaps pricing: The asset swap approach and the full valuation approach. | |
| 4 | Course | **Reduced-form models of credit risk**  Default-intensity or reduced-form models. Bootstrapping default probabilities from CDS spreads and bond prices. Liquidity risk premium. | |
| 5 | Course | **Structured credit products**  Default correlation and structured credit products: Mortgage-backed securities, Collateralized debt obligations, asset-backed securities. Structured products mispricing in the financial crisis. | |
| 6 | Course | **Market risk**  Market risk. Dimension reduction techniques. Principal component analysis and applications. | |
| 7 | Course | **Value-at-Risk: parametric**  Value at risk. Parametric approach: volatility and correlation estimation. | |
| 8 | Course | **Value-at-Risk: non-parametric**  Value at risk. Simulation approaches: Historical simulation and Monte Carlo simulation. | |
| 9 | Course | **Expected Shortfall**  Beyond Value at risk: Expected shortfall. Backtesting and stress-testing of VaR and ES. | |
| 10 | Course | **Regulation**  Market risk and credit risk regulatory developments. Counterparty risk. | |

# **S4FIN574 :** FINANCIAL ENGINEERING

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| **Course Leader :** | Magnus BLOMKVIST | | | |
| **Instructors(s) :** | Magnus BLOMKVIST | | | |
| **Course description :** | This course covers financial engineering techniques from a corporate managers perspective. We focus on how the financial manager can enhance firm value by the use of different financial instruments during different tax and legal regimes. Furthermore, we cover the structuring of M&A and LBOs with focus on the use of different financial instruments. | | | |
| **Course objectives :** | After this course, the students will be able :  - To understand the main tools of financial engineering  - To understand how firms can exploit legal and structural issues  - To understand how firms can benefit from capital market imperfections | | | |
| **Learning goals and learning objectives :** | **LO04 - ANALYSE :** Understand and use decision-making tools appropriately  **LO05 - ANALYSE :** Mobilize theoretical and/or experience-related knowledge | | | |
| **Tackled concepts :** | Free Cash Flow Theory, Pecking Order Theory, building an empire, Agency Theory  Leverage  Corporate Governance  Shareholder wealth  Post and Pre-money value  Control Premium and exit premium  IRR  Dividend Per Share  Pay-out ratio  Pre-emptive rights  Convertible bonds  Senior and junior debt  Covenants  Management package  Merger and Acquisition  Poison pills  IPO, BOSO, LBO, BIMBO, LBI, OBO, LBU  Venture capital – Crownfunding – Investment capital  Due diligence, preferred shares, shareholder agreements, earn-out amendment.  Securitization  Solvency II | | | |
| **Learning methods/Teaching procedures :** | Cases | | | |
| **Assignments :** | Cases assigned by the lecturer | | | |
| **Evaluation :** | **Evaluation** | **Rate** | **Modality of the evaluation** | **Rate** |
| Final Control | 80 % | Individual Written Assignment | 80 % |
| Continuous Control | 20 % | Individual Written Assignment | 20 % |
| **Bibliography/Course Material :** |  Articles assigned by the lecturer | | | |
| **Number of credits :** | **4,00** | | | |
| **Course 's planning :** | 10 x 3 hours | | | |

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| **Course 's planning** | | |
| **N° of session** | **Type of session** | **Detailed description of session** | |
| 1 | Course | **Introduction to Financial Engineering**  Financial Engineering from a macro perspective  The Financial Crisis what have we learned?  Homework | |
| 2 | Course | **Capital Structure**  Debt and Equity Characteristics  Modligiani & Miller, Pecking Order Theory, Trade-Off Theory  The costs of Financial slack and financial constraints  -Jensen (1986)  -Bolton & Scharfstein (1991)  Homework | |
| 3 | Course | **Capital Raising**  Long term vs. Short term Financing  Credit Rationing, Stiglitz & Weiss (1981)  Debt market cycles and debt/equity choice  The real effects from financial constraints  Homework | |
| 4 | Course | **Payout policy under different tax regimes**  Dividend and Share Repurchases  Taxation in different legal regimes  The effect of tax change on payout policy  US firms and payout policy  Dividend tax Arbitrage  Homework | |
| 5 | Course | **Structuring the Executive Compensation Package**  Introduction to Executive Compensation  Financial Instruments used for Executive Compensation  Homework | |
| 6 | Course | **Mezzanine and Stage Financing**  Convertible bonds  Stage Financing  Homework | |
| 7 | Course | **M&A principles**  Mergers and Acquisitions  Merger cyclicality  Public vs. private M&A  Homework | |
| 8 | Course | **Structuring the takeover**  Equity/Mezzanine/Debt choice  M&A performance  Investment bank choice  Tax motivated Acquisitions  Homework | |
| 9 | Course | **Private Equity and Venture Capital**  Private equity overview  LBO  Leverage Financing  Homework | |
| 10 | Course | **Structuring the IPO**  IPO principles  Secondary vs. Primary shares  Follow up offers  Does venture capital financing theory apply to IPO firms?  Homework | |

# **S4FIN575 :** ADVANCED FINANCIAL ANALYSIS

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| **Course Leader :** | Alexis GUYOT | | | |
| **Instructors(s) :** | Philippe Giraudon | | | |
| **Course description :** | This course is designed to ensure a deeper understanding of financial reporting and financial statements analysis with an emphasis on the relationship among all the stakeholders in value creation, the link between operations and finance, and the identification of companies’ value drivers. A particular emphasis will be made on the necessary “economic approach” to adopt beyond financial statements in all financial analyses. | | | |
| **Course objectives :** | Upon completion of the module, you should have:  - a good understanding of financial analysis approach to financial reporting and accounting  - a strong technical knowledge and practice of financial analysis and financial statements interpretation  - a solid command of how financial reporting and statement analysis is challenged and impacted by IFRS principles and issues  - a fair view on potential ways to “optimise” results  - a strong command of “how to read between financial statements lines”  Students will also become proficient in case analysis and discussion, will develop team working skills, presentation skills and communication skills. | | | |
| **Learning goals and learning objectives :** | **LO02 - ANALYSE :** Understand the company within a complex environment  **LO10 - ANTICIPATE :** Assess the risks and implications of decisions  **LO11 - DECIDE :** Define and propose strategic choices | | | |
| **Tackled concepts :** | Cash Flows  Profit & Loss Statement (P&L)  Balance Sheet  Shareholders’ Equity  Acquisitions  Mergers  Financial analysis under IFRS  Accounting data restatement  Capital Employed and Invested Capital  Value drivers  Margins  Capital intensity  Working Capital  Cash cycle  Asset profitability  Profitability for shareholders  Growth  Solvency  Liquidity  Market ratios  DuPont Analysis  Break-even  Forecasts  Business plan  Business model  ROCE, ROE, leverage effect  Net Financial Debt  Goodwill | | | |
| **Learning methods/Teaching procedures :** | Readings  Exercise and Case based learning  Computer based teaching and learning (excel)  Groupwork  The methodologies used in the course include class discussions of assigned readings, case presentation of students and exercises. Students will be able to develop communication, analysis, and presentation skills during class. Concepts will be developed through several case studies. | | | |
| **Assignments :** | Groupworks (workgroups are chosen randomly by the professor)  Readings, exercises and practical case studies  Active participation is expected from all students in all courses  Course grade: Groupwork 30%  (Individual participation will be very significantly taken into account in individual course grade)  Final exam 70% | | | |
| **Evaluation :** | **Evaluation** | **Rate** | **Modality of the evaluation** | **Rate** |
| Final Control | 70 % | Individual Written Assignment | 70 % |
| Continuous Control | 30 % | Team Project (presentation and report) | 30 % |
| **Bibliography/Course Material :** |  Corporate Finance Theory and Practice, P Vernimmen, P Quiry, Y Le Fur, M Dallocchio and A Salvi, 3rd edition   Financial accounting: Media Enhanced, B.E. Needles and M. Powers, 9th Edition | | | |
| **Number of credits :** | **4,00** | | | |
| **Course 's planning :** | 10 x 3 hours | | | |

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| **Course 's planning** | | |
| **N° of session** | **Type of session** | **Detailed description of session** | |
| 1 | Course | **I. Financial Analysis environment, context and issues**  Financial Analysis: definition, objectives, users, evolution  Financial analysis approach to financial reporting and statements  Financial analysis approach to key international differences in accounting  Financial analysis challenges related to major IFRS issues | |
| 2 | Course | **II. Challenging Financial Reporting and Financial Statements**  Restatements of accounting data  Review of assets & liabilities and off-balance sheet items  Impact of foreign currencies on overall analysis  Net Financial Debt definition  + Practical preparation of pro-forma (restated) accounts | |
| 3 | Course | **III. Analysing a business model and profitability: business, sector and margins**  Approach to assess if a business is sound  Business sector and competitive positioning  Business analysis  Review of major margins | |
| 4 | Course | **III. Analysing a business model and profitability: fixed assets and production tool**  Capital intensity and margin level  Cost and production tool analysis | |
| 5 | Course | **III. Analysing a business model and profitability: working capital, cash and profitability**  Working capital ratios - Cash cycle  Asset profitability analysis  Profitability for shareholders: measure, leverage effect, recent approaches, expected sources of profitability | |
| 6 | Course | **IV. Analysing business growth**  Growth indicators and growth potential - Growth analysis  Growth models (e.g. required growth, sustainable growth) | |
| 7 | Course | **V. Solvency, liquidity and market ratios**  Solvency ratios and implementation  Liquidity ratios  Financial Market ratios  DuPont Analysis | |
| 8 | Course | **VI. Credit risk, break-even and business plans**  Credit risk approaches  Break-even analysis and implementation  Preparation of forecasts  Critical judgment approach to business plan assumptions | |
| 9 | Course | **VII. Overview of Financial Reporting and Statement analysis and issues**  Overview and wrap-up of major tools and concepts  Highlight on quality of earnings in real due diligence  Approach to interim reporting | |
| 10 | Course | **Group Case Study presentation**  Overall Group Case Study to prepare for the session: Thorough and detailed financial analysis of a company | |

# **S4FIN576 :** CASH MANAGEMENT & DERIVATIVES

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| **Course Leader :** | Alexis GUYOT | | | |
| **Instructors(s) :** | Tim Sambrook | | | |
| **Course description :** | This module aims to provide students with the necessary training to develop an advanced understanding of money markets, foreign exchange, derivatives and commodities.  Part 1. Is dedicated to give students a strong knowledge and understanding of the money markets.  Part 2. Provides students with specialist knowledge of international trade and currency markets.  Part 3. Gives the students an in depth knowledge of derivatives, in particular futures, swaps and options, so that they will be able to calculate the price of such instruments from first principles.  Cross-over program with the following modules:  - Portfolio management | | | |
| **Course objectives :** | Upon completion of the module, you should have:  - specialist knowledge of the different types of cash instruments in the money markets  - advanced knowledge and critical understanding in currency exchange rates with an appreciation of international trade and capital flows  - describe the investment and risk characteristics of derivatives  - an in depth knowledge of the uses and functionality of basic derivative products, and be able to calculate the underlying value of such products | | | |
| **Learning goals and learning objectives :** | **LO08 - ANTICIPATE :** Identify and leverage opportunities  **LO09 - ANTICIPATE :** Anticipate the economic, social, and environmental impact of a decision | | | |
| **Tackled concepts :** | Treasury bills  Commercial Paper  Bankers Acceptance  Certificate of Deposit  Repurchase agreements  Floating Rate Notes  Nominal and real exchange rates  Direct and indirect fx quotations  Currency cross rates  Forwards  Exchange rate regimes  International capital flows  Traditional options  Traded options  Hedge ratio  Call/put parity  Binomial model  Future margin  Interest rate swaps  Currency swaps  Swaptions | | | |
| **Learning methods/Teaching procedures :** | Presentation  Readings  Exercises  Case based learning  The methodologies used in the course include subject presentation and exercises. | | | |
| **Assignments :** | Readings & exercises  Case studies  Continuous testing of subject material 15%  45min mid term test: 15%  3 hours final exam: 70% | | | |
| **Evaluation :** | **Evaluation** | **Rate** | **Modality of the evaluation** | **Rate** |
| Final Control | 70 % | Final exam | 70 % |
| Continuous Control | 30 % | Continuous assessment | 15 % |
| Individual Written Assignment | 15 % |
| **Bibliography/Course Material :** |  “Options, Futures, and Other Derivatives”, John C. Hull, Pearson Education | | | |
| **Number of credits :** | **4,00** | | | |
| **Course 's planning :** | 7 x 4 hours + 2 hours | | | |

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| **Course 's planning** | | |
| **N° of session** | **Type of session** | **Detailed description of session** | |
| 1 | Course | **Session 1**  Cash Instuments – treasury bills, commercial paper, bankers acceptance, certifcates of deposit, repo agreements and FRN.  Yield Calculations | |
| 2 | Course | **Session 2**  The economics of International Trade. Capital Flows. Benefits of trading. Blocs and unions. | |
| 3 | Course | **Session 3**  Balance of payments.  Trade organisations  Currency regimes  Foreign Exchange market.  Exchange rate calculations | |
| 4 | Course | **Session 4**  Derivatives Futures – Forwards, characteristics of different futures, price calculation  Derivative futures – Strategies with futures | |
| 5 | Course | **Session 5**  Derivative Option – Traded options, basic price calculation of puts and calls | |
| 6 | Course | **Session 6**  Derivative Option – Investment risk and characteristics of options, investment strategies.  Binomial model of pricing  Greeks | |
| 7 | Interim test | **Session 7**  Individual written exam | |
| 8 | Course | **Session 8**  Derivative Swaps – Basic concepts of swaps. Valuation. Swaptions | |

# **S4FIN577 :** REPORTING UNDER IFRS/US GAAP

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| **Course Leader :** | Eric MATON | | | |
| **Instructors(s) :** | Eric MATON | | | |
| **Course description :** | This course is an introduction to the International Financial Reporting Standards (IFRS) and the US Generally Accepted Accounting Standards (GAAP). | | | |
| **Course objectives :** | It aims to develop fundamental skills necessary to read and analyze the information contained in the three main financial statements (P&L, balance sheet and statement of cash flows) and notes. | | | |
| **Learning goals and learning objectives :** | **LO01 - ANALYSE :** Collect information and assess its pertinence | | | |
| **Tackled concepts :** | Balance sheet,  Consolidated financial statements,  IFRS and US GAAP frameworks,  Inventories,  Income taxes,  Long-lived assets,  Noncurrent liabilities,  P&L account,  Statement of cash flows | | | |
| **Learning methods/Teaching procedures :** | Case studies discussion  Readings | | | |
| **Assignments :** | Case studies  Chapters reading in one specific book | | | |
| **Evaluation :** | **Evaluation** | **Rate** | **Modality of the evaluation** | **Rate** |
| Final Control | 70 % | Final exam | 70 % |
| Continuous Control | 30 % | Quiz | 30 % |
| **Bibliography/Course Material :** |  Financial accounting and reporting; a global perspective  Hervé Stolowy, Michel lebas, Yuan Ding et George Langlois  4th edition  Cengage Learning 2013   International Financial Statement Analysis  Thomas R. Robinson, Elaine Henry and al.,  2nd edition  Wiley, 2012 | | | |
| **Number of credits :** | **4,00** | | | |
| **Course 's planning :** | 10 sessions x 3 hours | | | |

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| **Course 's planning** | | |
| **N° of session** | **Type of session** | **Detailed description of session** | |
| 1 | Course | **Financial reporting mechanics and IFRS and US GAAP Framework**  Financial reporting mechanics (the accounting process, accrual and valuation adjustments)  IFRS and US GAAP Framework (Conceptual framework, objective of financial reports, qualitative characteristics of financial reports, constraints on financial reports) | |
| 2 | Course | **Consolidated financial statements**  Joint venture  Methods of consolidations  Financial statement presentation subsequent to the business combination | |
| 3 | Course | **Understanding income statements and balance sheets**  Revenue recognition  Expense recognition  Expenses by nature and by function  Nonrecurring items and nonoperating items  Components and format of the balance sheet  Current assets and current liabilities  Noncurrent assets  Noncurrent liabilities  Equity | |
| 4 | Course | **Understanding balance sheets and cash flow statements**  Noncurrent assets  Noncurrent liabilities  Equity  Components and format of the cash flow statement  Linkages of the cash flow statement with the income statement and balance sheet  Indirect method and direct method in the calculation of the cash flow from operating activities | |
| 5 | Course | **Analyst adjustments to reported financials**  A framework for analyst adjustments  Analyst adjustments related to investments  Analyst adjustments related to inventory  Analyst adjustments related to property, plant and equipment (P,P&E)  Analyst adjustments related to goodwill  Analyst adjustments related to off-balance-sheet financing | |
| 6 | Course | **Inventories**  Cost of inventories  Inventory valuation methods  Inventory method changes  Inventory adjustments | |
| 7 | Course | **Long-lived assets**  Acquisition of long-lived assets  Depreciation and amortization of long-lived assets  Impairment of assets  Derecognition | |
| 8 | Course | **Income taxes**  Differences between accounting profit and taxable income  Determining the tax base of assets and liabilities  Temporary and permanent differences between taxable and accounting profit | |
| 9 | Course | **Financial assets and Noncurrent liabilities**  Investments in financial assets (held-to-maturity and available-for-sale, impairments)  Bonds payable  Leases  Introduction to pensions and other postemployment benefits | |
| 10 | Course | **Case study: a global perspective**  Creation of a statement of cash flows from an income statement, balance sheets and notes. | |

# **S4FIN581 :** VALUATION TECHNIQUES

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| **Course Leader :** | Iordanis KALAITZOGLOU | | | |
| **Instructors(s) :** | Iordanis KALAITZOGLOU | | | |
| **Course description :** | This module aims at addressing the key aspects of business valuation in the current economic climate. The first part focuses on the contexts of evaluation, the main methods and the importance of the evaluation process. An important part is devoted to the cost of capital and the components of various sources of capital. It is then possible to present the main evaluation methods and implement them in practical examples and actual case studies. Some case studies are carried out by professionals. The final session will open the debate through a reflection on the contributions and limitations of the method of real options. | | | |
| **Course objectives :** | At the end of this module, students should be able to:  • Compute the WACC and its components  • Use different techniques to value a firm  • Understand, search-seek and extract relevant information from various data sources  • Extract Information from the main financial statements  • Update and Adjust current figures  • Estimate Discount Rates  • Estimate Cash Flows  • Estimated Discount Rates  • Decide on what is the most appropriate evaluation for different companies  • Develop a group report | | | |
| **Learning goals and learning objectives :** | **LO01 - ANALYSE :** Collect information and assess its pertinence  **LO05 - ANALYSE :** Mobilize theoretical and/or experience-related knowledge | | | |
| **Tackled concepts :** | - Discount Rates  o Cost of Equity  o Cost of Debt  o WACC  - Estimate Cash Flows  o Measure and Update Earnings  o From Earnings to Cash Flows  - Estimate Growth  o Stable  o 2-stage Growth Models  o 3-stage Growth Models  - Relative Valuation  o Earnings Multiples  o Book Value Multiples  o Sales Multiples  - Real Options  o Option to Expand  o Option to Abandon  o Option to Delay  o Equity as an option to liquidate | | | |
| **Learning methods/Teaching procedures :** | 10 x 3 hour lectures will be used to introduce new material and to expand areas of financial theory but much of the learning will be done through case study work. Students will be required to analyse a situational problem and to put forward a solution for discussion. | | | |
| **Assignments :** | Mid-term exam : Group Coursework 30% of the final mark  Final Exam : Written Exam, 70% of the final mark, open book, calculator needed  For the group project, you will know your group and group members by the end of the first week of the module.  Late submissions will be penalized by 10%/day (max 30%) reduction of the final grade. | | | |
| **Evaluation :** | **Evaluation** | **Rate** | **Modality of the evaluation** | **Rate** |
| Final Control | 70 % | Final exam | 70 % |
| Continuous Control | 30 % | Team Project (presentation and report) | 30 % |
| **Bibliography/Course Material :** |  Damodaran on Valuation, Willey, 2nd edition  http://www.scholarvox.com/reader/index/docid/10051129/searchterm/damodaran   Investment Valuation, A. Damodaran, Willey, 2nd edition   Corporate Finance, European edition, HILLIER et al., 2010 | | | |
| **Number of credits :** | **4,00** | | | |
| **Course 's planning :** | 10 sessions x 3 hours | | | |

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| **Course 's planning** | | |
| **N° of session** | **Type of session** | **Detailed description of session** | |
| 1 | Course | **Introduction** | |
| 2 | Course | **DCF I**  - Discount Rates  o Cost of Equity  o Cost of Debt  o WACC  o Case Studies | |
| 3 | Course | **DCF II**  - Estimate Cash Flows  o Measure and Update Earnings  o From Earnings to Cash Flows  o Case Studies | |
| 4 | Course | **DCF III**  - Estimate Growth  o Stable  o 2-stage Growth Models  o 3-stage Growth Models | |
| 5 | Course | **DCF case studies**  - DCF Examples - Complete Case Studies – Full Valuations | |
| 6 | Course | **Relative valuation**  - Introduction to Relative Valuation  o Earnings Multiples  o Book Value Multiples  o Sales Multiples | |
| 7 | Course | **Relative valuation case studies**  - Relative Valuation and DCF Examples - Complete Case Studies – Full Valuations | |
| 8 | Course | **Real options**  - Introduction to Real Options  o Option to Expand  o Option to Abandon  o Option to Delay | |
| 9 | Course | **Real options case studies**  - Equity as an option to liquidate  - Real Option, Relative Valuation and DCF Examples - Complete Case Studies – Full Valuations | |
| 10 | Course | **Recoup and Revision** | |

# **S4FIN582 :** PORTFOLIO MANAGEMENT

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| **Course Leader :** | Giacomo NOCERA | | | |
| **Instructors(s) :** | Giacomo NOCERA | | | |
| **Course description :** | The course deals with the theory and the application of portfolio management techniques.  The aim is to survey the major theories, tools and results in portfolio management.  As the course emphasizes not only the theory, but also its practical application, by the end of this course, students are expected to have a good understanding of the asset management market, the financial instruments, and the market practitioners’ terminology.  In addition, they should be able to develop a fair knowledge and understanding of key issues in asset allocation and portfolio composition and management and to implement adequate portfolio management strategies.  The course is designed to cover most of the “Portfolio Management and Wealth Planning” topic area and many concepts of some of the other topic areas of the CFA Candidate Body of Knowledge. | | | |
| **Course objectives :** | The main objective of this course is to learn the key theory with practical applications relevant to portfolio management.  After completing this course students will be able to:  - Measure and manage portfolio risk and return  - Select and monitor an investment and build a portfolio  - Practically understand and apply asset pricing basics | | | |
| **Learning goals and learning objectives :** | **LO04 - ANALYSE :** Understand and use decision-making tools appropriately | | | |
| **Tackled concepts :** | Portfolio mathematics  Risk - return - utility functions  Asset pricing models  Index models  Portfolio performance evaluation  Passive and active portfolio management  Allocation of funds to portfolios | | | |
| **Learning methods/Teaching procedures :** | Lectures  Practical lab applications  Team project  Homework and self-assessed work  Classroom discussion | | | |
| **Assignments :** | Mid-term exam  Group coursework | | | |
| **Evaluation :** | **Evaluation** | **Rate** | **Modality of the evaluation** | **Rate** |
| Final Control | 60 % | Final exam | 60 % |
| Continuous Control | 40 % | Individual Written Assignment | 10 % |
| Team Project (presentation and report) | 30 % |
| **Bibliography/Course Material :** |  Z. Bodie; A. Kane; A.J. Marcus, Investments. McGraw-Hill International | | | |
| **Number of credits :** | **4,00** | | | |
| **Course 's planning :** | 10 sessions x 3 hours | | | |

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| **Course 's planning** | | |
| **N° of session** | **Type of session** | **Detailed description of session** | |
| 1 | Course | **Introduction: the asset management industry**  This session offers a description of the course (aims and objectives, teaching and learning methods, topics to be covered, class rules) and provides an introduction to the asset management industry. | |
| 2 | Course | **Quantitative tools for portfolio management**  This session is devoted to a review of the quantitative tools: the basics of return calculation, a review of basic statistics, regression analysis, and matrix algebra. | |
| 3 | Course | **The mean-variance framework**  This session introduces the concepts of return and risk as the main inputs of any asset allocation strategy and highlights the advantage (and the drawbacks) of using expected returns and variance of returns as the only indicators of return and risk. It also shows how individuals’ preferences can be represented in such a mean-variance framework. | |
| 4 | Course | **Portfolio Selection: the theory**  This session presents the Markowitz’s model and shows how to build the optimal portfolios by using (i) 2 risky assets; (ii) a risky asset and a riskless one; (iii) n risky assets; (iv) n risky assets and a riskless one. It also shows how investor’s preferences enter the portfolio selection. | |
| 5 | Course | **Portfolio Selection: MS Excel application**  This session completes the previous one by showing how to generate the efficient frontier of financial portfolios using real data on Excel. The quadratic optimization approach (through Excel solver) is discussed. | |
| 6 | Course | **CAPM and index models**  In this session the Capital Asset Pricing Model, a centerpiece of the modern financial economics, is introduced and discussed critically.  This session also introduces the index models (single-index and multi-index models), their advantages and limitations, how to estimate them and how to interpret this information.  Practical examples of index model applications are presented and the link between the market model and the CAPM is discussed. | |
| 7 | Course | **APT and multifactor models of risk and return**  In this session the Arbitrage Pricing Theory is outlined. The Fama-French multifactor model of risk and return is introduced and compared to the standard CAPM. | |
| 8 | Course | **The frontiers of portfolio diversification**  This session illustrates the benefits of a portfolio diversification across different markets, sectors, and different asset classes. An analysis of the main alternative asset classes is provided. | |
| 9 | Course | **Practical issues in portfolio management (I)**  This session deals with some practical issues in portfolio management: the rationale of the existence of different mutual funds, the need for benchmarks, the costs and benefits of two alternative investment approaches (active vs passive portfolio management), the performance evaluation measures (risk adjusted measures such as the Sharpe ratio, the Treynor ratio, the Jensen’s alpha, the appraisal or information ratio are presented). | |
| 10 | Course | **Practical issues in portfolio management (II)**  This session completes the previous one as it deals with the performance analysis of mutual funds and shows the standard approaches to decompose performances and identify investment styles. It also discusses the modern portfolio management process and its ethics as well as the different stages of the portfolio process. Finally, it deals with the remuneration of the asset management activity, through an analysis of the management fees and the mutual funds’ expense ratios. | |

# **S4FIN583 :** MODULE OF SPECIALIZATION

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| **Course Leader :** | | Frederic ALEXIS | | | | |
| **Instructors(s) :** | | Frederic ALEXIS | | | | |
| **Course description :** | | After completing this course you will be able to:  - Modelling future financial environment  - Create models of asset valuation and derivatives  - Calculate all the parameters of position risk / portfolio  - Establish arbitrage strategies  - Use the tools in the trading room  - Develop tools alert | | | | |
| **Course objectives :** | | The objective of this course is to understand the business of trading in financial markets: market maker, manager on own account or Hedge Fund Manager | | | | |
| **Learning goals and learning objectives :** | | **LO07 - ANTICIPATE :** Identify change and innovation possibilities  **LO14 - DECIDE :** Take necessary and calculated risks  **LO18 - ACT :** Define and implement corrective measures | | | | |
| **Tackled concepts :** | | Concepts taught:  - Curves of expected returns  - Risk Premiums  - Statistical Tools  - Probabilistic models  - Determinants and sensitivities  - Duration of assets  - Arbitration vs Active Active  - Arbitration vs Active Derivatives  - Arbitration vs Derivatives Derivatives  - Calculate P & L  - Risk Management | | | | |
| **Learning methods/Teaching procedures :** | | Case Study, Setting, Personal research | | | | |
| **Assignments :** | | Personal work before each session | | | | |
| **Evaluation :** | | **Evaluation** | | **Rate** | **Modality of the evaluation** | **Rate** |
| Final Control | | 60 % | Individual Written Assignment | 60 % |
| Continuous Control | | 40 % | Team Project (presentation and report) | 40 % |
| **Bibliography/Course Material :** | |  Options, Futures, and Other Derivatives, John C. Hull, Ninth Edition (ISBN: 978-0-13-345631-8) | | | | |
| **Number of credits :** | | **4,00** | | | | |
| **Course 's planning :** | | 10 sessions of 3 hours | | | | |
| **Course 's planning** | | | | | | | |
| **N° of session** | **Type of session** | | **Detailed description of session** | | | | | |
| 1 | lesson | | **reminders**  Curves of expected returns, risk premiums and financial calculations | | | | | |
| 2 | lesson | | **Statistical Tools** | | | | | |
| 3 | lesson | | **Probabilistic models** | | | | | |
| 4 | lesson | | **Determinants and sensitivities** | | | | | |
| 5 | lesson | | **Duration of assets** | | | | | |
| 6 | lesson | | **Arbitrage Actif vs Actif** | | | | | |
| 7 | lesson | | **Arbitrage Actif vs Derivatives** | | | | | |
| 8 | lesson | | **Arbitrage Derivatives vs Derivatives** | | | | | |
| 9 | lesson | | **Calculate P & L** | | | | | |
| 10 | lesson | | **Risk Management** | | | | | |

# **S4FIN584 :** ADVANCED FINANCIAL ANALYSIS

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| **Course Leader :** | Alexis GUYOT | | | |
| **Instructors(s) :** | Philippe Giraudon | | | |
| **Course description :** | This course is designed to ensure a deeper understanding of financial reporting and financial statements analysis with an emphasis on the relationship among all the stakeholders in value creation, the link between operations and finance, and the identification of companies’ value drivers. A particular emphasis will be made on the necessary “economic approach” to adopt beyond financial statements in all financial analyses. | | | |
| **Course objectives :** | Upon completion of the module, you should have:  - a good understanding of financial analysis approach to financial reporting and accounting  - a strong technical knowledge and practice of financial analysis and financial statements interpretation  - a solid command of how financial reporting and statement analysis is challenged and impacted by IFRS principles and issues  - a fair view on potential ways to “optimise” results  - a strong command of “how to read between financial statements lines”  Students will also become proficient in case analysis and discussion, will develop team working skills, presentation skills and communication skills. | | | |
| **Learning goals and learning objectives :** | **LO02 - ANALYSE :** Understand the company within a complex environment  **LO10 - ANTICIPATE :** Assess the risks and implications of decisions  **LO11 - DECIDE :** Define and propose strategic choices | | | |
| **Tackled concepts :** | Cash Flows  Profit & Loss Statement (P&L)  Balance Sheet  Shareholders’ Equity  Acquisitions  Mergers  Financial analysis under IFRS  Accounting data restatement  Capital Employed and Invested Capital  Value drivers  Margins  Capital intensity  Working Capital  Cash cycle  Asset profitability  Profitability for shareholders  Growth  Solvency  Liquidity  Market ratios  DuPont Analysis  Break-even  Forecasts  Business plan  Business model  ROCE, ROE, leverage effect  Net Financial Debt  Goodwill | | | |
| **Learning methods/Teaching procedures :** | Readings  Exercise and Case based learning  Computer based teaching and learning (excel)  Groupwork  The methodologies used in the course include class discussions of assigned readings, case presentation of students and exercises. Students will be able to develop communication, analysis, and presentation skills during class. Concepts will be developed through several case studies. | | | |
| **Assignments :** | Groupworks (workgroups are chosen randomly by the professor)  Readings, exercises and practical case studies  Active participation is expected from all students in all courses  Course grade: Groupwork 30%  (Individual participation will be very significantly taken into account in individual course grade)  Final exam 70% | | | |
| **Evaluation :** | **Evaluation** | **Rate** | **Modality of the evaluation** | **Rate** |
| Final Control | 70 % | Individual Written Assignment | 70 % |
| Continuous Control | 30 % | Team Project (presentation and report) | 30 % |
| **Bibliography/Course Material :** |  Corporate Finance Theory and Practice, P Vernimmen, P Quiry, Y Le Fur, M Dallocchio and A Salvi, 3rd edition   Financial accounting: Media Enhanced, B.E. Needles and M. Powers, 9th Edition | | | |
| **Number of credits :** | **4,00** | | | |
| **Course 's planning :** | 10 x 3 hours | | | |

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| **Course 's planning** | | |
| **N° of session** | **Type of session** | **Detailed description of session** | |
| 1 | Course | **I. Financial Analysis environment, context and issues**  Financial Analysis: definition, objectives, users, evolution  Financial analysis approach to financial reporting and statements  Financial analysis approach to key international differences in accounting  Financial analysis challenges related to major IFRS issues | |
| 2 | Course | **II. Challenging Financial Reporting and Financial Statements**  Restatements of accounting data  Review of assets & liabilities and off-balance sheet items  Impact of foreign currencies on overall analysis  Net Financial Debt definition  + Practical preparation of pro-forma (restated) accounts | |
| 3 | Course | **III. Analysing a business model and profitability: business, sector and margins**  Approach to assess if a business is sound  Business sector and competitive positioning  Business analysis  Review of major margins | |
| 4 | Course | **III. Analysing a business model and profitability: fixed assets and production tool**  Capital intensity and margin level  Cost and production tool analysis | |
| 5 | Course | **III. Analysing a business model and profitability: working capital, cash and profitability**  Working capital ratios - Cash cycle - Asset profitability analysis  Profitability for shareholders: measure, leverage effect, recent approaches, expected sources of profitability | |
| 6 | Course | **IV. Analysing business growth**  Growth indicators and growth potential  Growth analysis  Growth models (e.g. required growth, sustainable growth) | |
| 7 | Course | **V. Solvency, liquidity and market ratios**  Solvency ratios and implementation  Liquidity ratios  Financial Market ratios  DuPont Analysis | |
| 8 | Course | **VI. Credit risk, break-even and business plans**  Credit risk approaches  Break-even analysis and implementation  Preparation of forecasts  Critical judgment approach to business plan assumptions | |
| 9 | Course | **VII. Overview of Financial Reporting and Statement analysis and issues**  Overview and wrap-up of major tools and concepts  Highlight on quality of earnings in real due diligence  Approach to interim reporting | |
| 10 | Course | **Group Case Study presentation**  Overall Group Case Study to prepare for the session: Thorough and detailed financial analysis of a company | |

# **S4FIN585 :** DERIVATIVES VALUATION

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| **Course Leader :** | Christophe VILLA | | | |
| **Instructors(s) :** | Christophe VILLA | | | |
| **Course description :** | This module aims to provide students with the necessary training to develop an advanced understanding of derivatives and commodities. | | | |
| **Course objectives :** | Upon completion of the module, you should have:  . specialist knowledge of the different types of derivative instruments  . describe the investment and risk characteristics of derivatives  . an in depth knowledge of the uses and functionality of derivative products, and be able to calculate the underlying value of such products | | | |
| **Learning goals and learning objectives :** | **LO15 - ACT :** Apply academic and/or professional knowledge to a specific situation | | | |
| **Tackled concepts :** | Traditional options - Traded options - Hedge ratio - Call/put parity  Black & Scholes model - Binomial model – Greeks - Commodities | | | |
| **Learning methods/Teaching procedures :** | Presentation – Readings - Exercises | | | |
| **Assignments :** | Readings & exercises | | | |
| **Evaluation :** | **Evaluation** | **Rate** | **Modality of the evaluation** | **Rate** |
| Final Control | 100 % | Final exam | 100 % |
| **Bibliography/Course Material :** |  “Options, Futures, and Other Derivatives”, John C. Hull, Pearson Education | | | |
| **Number of credits :** | **4,00** | | | |
| **Course 's planning :** | 10 x 3 hours | | | |

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| **Course 's planning** | | |
| **N° of session** | **Type of session** | **Detailed description of session** | |
| 1 | Course | **Session 1**  Futures markets | |
| 2 | Course | **Session 2**  Basics in derivatives  Call/put parity | |
| 3 | Course | **Session 3**  Derivatives' valuation:  Binomial trees  Binomial model | |
| 4 | Course | **Session 4**  Derivatives' valuation:  Black & Scholes model | |
| 5 | Course | **Session 5**  Estimating derivatives' risk:  Greek letters | |
| 6 | Course | **Session 6**  Derivatives' trading strategies  Hedging with derivatives | |
| 7 | Course | **Session 7**  Estimating volatility | |
| 8 | Course | **Session 8**  Value at risk | |
| 9 | Course | **Session 9**  Swaps valuation  Derivative Swaps: Swaptions | |
| 10 | Course | **Session 10**  Commodities | |

# **S4FIN586 :** QUANTITATIVE FINANCE

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| **Course Leader :** | Mascia BEDENDO | | | |
| **Instructors(s) :** | Mascia BEDENDO | | | |
| **Course description :** | The first part of the course covers credit derivatives (both single-name and structured products) and the market pricing of credit risk. The second part of the course deals with the measurement of market risk (Value at Risk, Expected Shortfall) in portfolios of financial assets. | | | |
| **Course objectives :** | The course aims at providing a technical and hands-on approach to credit risk and market risk measurement. At the end of the course students should be able to extract information on the credit quality of an entity from market prices of bonds and credit derivatives. In addition, they should be able to estimate the market risk of a portfolio of assets in terms of Value at Risk and Expected Shortfall. | | | |
| **Learning goals and learning objectives :** | **LO05 - ANALYSE :** Mobilize theoretical and/or experience-related knowledge | | | |
| **Tackled concepts :** | Financial concepts:  Credit risk and credit derivatives. Market pricing of credit risk. Structured credit products. Market risk measures: Value at Risk and Expected Shortfall.  Technical tools:  Multivariate distributions. Principal component analysis. Historical (non-parametric) simulation. Monte Carlo simulation. Bootstrapping techniques and calibration. Poisson default processes. Correlation modeling. | | | |
| **Learning methods/Teaching procedures :** | Standard Lectures. Exercises. Computer-based applications. | | | |
| **Assignments :** | One mid-term group empirical assignment (groups of 3-4 students)  The mid-term assignment accounts for 30% of the final grade. The final exam (exercises and open questions) accounts for the remaining 70% of the grade. | | | |
| **Evaluation :** | **Evaluation** | **Rate** | **Modality of the evaluation** | **Rate** |
| Final Control | 70 % | Individual Written Assignment | 70 % |
| Continuous Control | 30 % | Team Project (presentation and report) | 30 % |
| **Bibliography/Course Material :** |  Textbook: “Options, Futures, and Other Derivatives”, John C. Hull, Pearson Education   Primary reading material: Instructor’s slides, exercise sets, programming examples. | | | |
| **Number of credits :** | **4,00** | | | |
| **Course 's planning :** | 10 x 3 hours | | | |

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| **Course 's planning** | | |
| **N° of session** | **Type of session** | **Detailed description of session** | |
| 1 | Course | **Credit risk components**  Credit risk. Credit risk components: Country risk, sector risk, firm-specific risk. Recovery rates. Credit risk and the business cycle. | |
| 2 | Course | **Market measures of credit risk**  Market measures of credit risk: Bond yields and credit default swap spreads. An introduction to credit derivatives. | |
| 3 | Course | **Credit default swaps**  Credit default swaps pricing: The asset swap approach and the full valuation approach. | |
| 4 | Course | **Reduced-form models of credit risk**  Default-intensity or reduced-form models. Bootstrapping default probabilities from CDS spreads and bond prices. Liquidity risk premium. | |
| 5 | Course | **Structured credit products**  Default correlation and structured credit products: Mortgage-backed securities, Collateralized debt obligations, asset-backed securities. Structured products mispricing in the financial crisis. | |
| 6 | Course | **Market risk**  Market risk. Dimension reduction techniques. Principal component analysis and applications. | |
| 7 | Course | **Value-at-Risk: parametric**  Value at risk. Parametric approach: volatility and correlation estimation. | |
| 8 | Course | **Value-at-Risk: non-parametric**  Value at risk. Simulation approaches: Historical simulation and Monte Carlo simulation. | |
| 9 | Course | **Expected Shortfall**  Beyond Value at risk: Expected shortfall. Backtesting and stress-testing of VaR and ES. | |
| 10 | Course | **Regulation**  Market risk and credit risk regulatory developments. Counterparty risk. | |

# **S4FIN587 :** MACROECONOMICS & INTERNATIONAL FINANCE

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| **Course Leader :** | Alexis GUYOT | | | |
| **Instructors(s) :** | Josef Taušer | | | |
| **Course description :** | The course focuses on selected core aspects of international economics and finance. The first part of the course creates a needful basis for understanding the fundamental features of international trade and financial transactions in a broader macroeconomic context. The second part of the course goes more in details in terms of analyzing the structure and basic tools of foreign exchange and money markets. | | | |
| **Course objectives :** | Upon successful completion of this course, students will be able to:    - understand the basic theoretical models of international trade;  - understand the way how exchange rates are managed and determined on international markets;  - understand the substance of international trade and capital flows;  - use the balance of payments for fundamental macroeconomic analysis and predictions;  - understand the main features of foreign exchange and money markets;  - apply basic theoretical relations in foreign exchange rates and interest rates forecasting;  - use interest rate and currency derivatives for hedging, speculations and arbitrages. | | | |
| **Learning goals and learning objectives :** | **LO10 - ANTICIPATE :** Assess the risks and implications of decisions | | | |
| **Tackled concepts :** | Classical and Neoclassical Theory  Keynesianism  Monetary Approach  International Parity Conditions | | | |
| **Learning methods/Teaching procedures :** | The course combines lectures, exercises, case studies and discussions on actual problems. | | | |
| **Assignments :** | 3 mini cases  Project  Exam  Students will be graded on the basis of: doing the series of mini cases during the term (20 %), presentation of the project (40 %), written exam on literature and class handouts (40 %). Final grade depends on total number of percent (see bellow):  1 (excellent) = 90 - 100 %  2 (very good) = 75 - 89 %  3 (good) = 60 - 74 %  4+ (fail) = 50 - 59 % (it is possible to repeat the written exam)  4 (fail) = 59 % and less | | | |
| **Evaluation :** | **Evaluation** | **Rate** | **Modality of the evaluation** | **Rate** |
| Final Control | 40 % | Individual Written Assignment | 40 % |
| Continuous Control | 60 % | Continuous assessment | 20 % |
| Team Project (presentation and report) | 40 % |
| **Bibliography/Course Material :** |  KRUGMAN, P R. -- OBSTFELD, M. International economics : theory & policy. Boston: Pearson, 2009. ISBN 978-0-321-55398-0.   EITEMAN, D K. -- STONEHILL, A I. -- MOFFETT, M H. Multinational business finance. Boston: Prentice Hall, 2010. ISBN 978-0-13-609668-9. | | | |
| **Number of credits :** | **4,00** | | | |
| **Course 's planning :** | 10 x 3 hours | | | |

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| **Course 's planning** | | |
| **N° of session** | **Type of session** | **Detailed description of session** | |
| 1 | Course | **International Trade Theories 1**  Mercantilism;  Classical and neoclassical theories;  Monetarism, Keynesian theory, protectionist theories;  Standard trade model. | |
| 2 | Course | **International Trade Theories 2**  Mercantilism;  Classical and neoclassical theories;  Monetarism, Keynesian theory, protectionist theories;  Standard trade model. | |
| 3 | Course | **Exchange rate economics 1**  Exchange rate regimes;  Purchasing power parity (absolute and relative version);  Uncovered interest rate parity condition;  Monetary approach to exchange rates. | |
| 4 | Course | **Exchange rate economics 2**  Exchange rate regimes; Purchasing power parity (absolute and relative version);  Uncovered interest rate parity condition;  Monetary approach to exchange rates. | |
| 5 | Course | **Balance of payments statement**  Foreign transaction in balance of payments; Balance of payments structure;  Current account balance, financial account balance and changes in official reserves;  Balance of payments theory. | |
| 6 | Course | **Foreign exchange and money markets**  Structure of FX and money markets, OTC market, main participants, main transactions, motivation, exchange rate and interest rate quotations; | |
| 7 | Course | **Interest rate and currency derivatives 1**  Outright forwards, technique of transaction, hedging, speculations, arbitrages;  Swaps, technique of transaction, main type of swaps, swaps and management of risks. | |
| 8 | Course | **Interest rate and currency derivatives 2**  Outright forwards, technique of transaction, hedging, speculations, arbitrages;  Swaps, technique of transaction, main type of swaps, swaps and management of risks. | |
| 9 | Course | **Interest rate and currency derivatives 3**  Futures, technique of transaction, daily settlement, clearing house, futures and hedging and speculation;  Options, technique of transaction, exchange and OTC; options, option position and profit or lost, call and put option;  Exotic options - Cap, Floor, Collar. | |
| 10 | Course | **Interest rate and currency derivatives 4**  Futures, technique of transaction, daily settlement, clearing house, futures and hedging and speculation;  Options, technique of transaction, exchange and OTC; options, option position and profit or lost, call and put option;  Exotic options - Cap, Floor, Collar. | |