

MSc in Asset Management

Detailed Course Descriptions

Mandatory Courses

Block I

Financial Econometrics

Topics covered include regression analysis, non-linear regression, ML, GMM, volatility models, time varying parameters, forecasting, Bayesian methods, simulation, and the bootstrap.

4 Ects

Corporate Valuation

This course will cover modern principles and tools of valuation. It creates a strong foundation for the discounted cash flow model by analysing all features and assumptions implicit in any valuation analysis, starting from the term structure of interest rates, estimating discount rates, measuring cash flows, calculating growth rates. The course then moves on to value enhancement tools and techniques such as EVA and CFROI. It covers relative valuation techniques such as equity and firm value multiples, and the valuation consequences of cash, cross-holdings and stock options. The course seeks to ensure a full understanding of the explicit and implicit assumptions underlying modern valuation models.

3,5 Ects

Financial Accounting

This course is designed to provide students with the skills required to interpret published financial statements. The course focuses on financial statements - income statement, balance sheet and cash flow statement; considers the crucial decision involved in preparing financial statements - revenue recognition, capitalization, valuation etc. It examines the incentives and constraints which influence the preparation of financial statements including the incentives to manage earnings; and introduces the interpretation of financial statements including ratio analysis.

3,5 Ects

Block II

Asset Pricing

The course covers the pricing of assets by pricing kernels and risk factors. Standard CAPM and APT models are reviewed. The advantages and disadvantages of diversifications are treated. Risk attitudes and risk premia are discussed.

4 Ects

Portfolio Allocation

This course constitutes the core of the Asset Management program: which investment portfolio is "optimal" for various investments. Starting from simple stylized portfolio problems, students learn how to solve analytically and numerically dynamic allocation problems. Special attention will be paid to

continuous time portfolio allocation. After this course, students understand the main techniques and have seen examples in the area of optimal bond portfolios for retirement saving, annuity choice for the retirement decumulation phase, enterprise-wide aggregation of portfolios and incentives and exploiting time varying value premiums.

4 Ects

Alternative Investments

The term “alternative” asset class is typically used to describe a group of assets that is considered non-standard or non-traditional for an investor. Depending on the context, alternative asset classes include real estate, private equity, hedge funds, commodities, art, and emerging markets equity. An important characteristic of alternative asset classes is that they expand the investment opportunity set and potentially improve the risk-return trade-off of an investment portfolio. Often, alternative assets tend to be less liquid than traditional ones, implying that valuation may be a problem and suggesting that investors considering these alternatives should have longer investment horizons. This course pays attention to the performance and characteristics of alternative investments and their role in an investor’s portfolio.

4 Ects

Block III

Financial Derivatives

This intermediate course, placed at a lower level of difficulty than Derivative Markets, seeks to find a balance between theory and practice on financial derivatives by examining the fundamental principles of the valuation of derivative securities and apply them to a series of case studies. Financial Regulation The course discusses economic principles of financial regulation (transparency, moral hazard, bank runs, and capital adequacy) and evaluates current regulatory frameworks such as Basel I/II. The course focuses on the regulation of major institutional players in financial market, i.e. banks, investment funds, exchanges, pension funds, and insurance companies. Special attention is given to incentive compatibility and international competition on regulation.

4 Ects

Block IV

Fixed Income Investments

By far the most important asset class in portfolios remain fixed income assets as government bonds, defaultable corporate bonds and derivatives. This course discusses the basics of term structure modeling and fixed income risk management. After this course, students have a thorough understanding of the principles and limitations of the popular duration analysis and are equipped with techniques that are more generally applicable. Special attention will be given to large fixed income portfolios and valuing liabilities for pension funds.

4 Ects

Risk Management Techniques I

The course discusses different methods to measure and manage financial risk and performance with special emphasis on downside risk measures such as Value-at-Risk (VAR), semi-variance, CVaR, Stress tests, worst case and scenario analysis, etc. Various statistical techniques are studied which are specifically designed to measure breakdown probabilities. Most asset returns turn out to be heavy tailed. That is to say, very bad outcomes occur more frequently than the normal distribution predicts. Therefore, heavy tailed distributions are studied in detail, especially their additive properties. Subsequently we investigate the Extreme Value Theory for the sake of stress testing and scenario analysis. We apply these and other techniques to the estimation and management of VAR, both at the individual asset level and the portfolio level. We also apply the techniques to the area of portfolio management. In particular, we pay attention to risk budgeting, economic capital estimation, performance attribution, and risk assessment for both market and credit portfolios. The pc lab session

implements the techniques. Given the link between proper risk management and stability of the financial system, we also pay attention to various aspects of risk management from a supervisory point of view. The inherent fragility of the financial system is explained and a scale for the system's stability is developed.

4 Ects

Market Microstructure

The purpose of the course is to acquaint students with research in market microstructure. Market microstructure has grown rapidly as one important and most empirically oriented subfield of finance. Research in this field focuses on the intertwined relationships between price volatility, liquidity, price discovery and market design. Models in market microstructure provide a framework for the analysis of price determination in financial markets at the micro level.

4 Ects

Electives

Block III

Real Estate Finance

Real Estate Finance provides an in-depth analysis of the role of real estate assets for portfolio decision-making. Students will be provided the necessary tools to analyze the different vehicles of real estate investments (such as, REITs, CMBS), describe the international real estate marketplace, and address the issues and challenges of performance measurement for real estate assets. The course also aims at analyzing the different channels characterizing the financing process of real estate assets. We will study how real estate assets differ from other asset types (such as plants and equipments) and whether this has implications for the financing process.

4 Ects

Banking Regulation

The current financial crisis will imply a significant change in the regulatory environment of financial institutions. This course will provide a theoretical base for the analysis of financial regulation, will review current practice in financial regulation, and discusses extensively the lessons of the current financial crisis on the future of financial regulation. The course will combine a sound theoretical analysis with an approach that analyses and describes the rules and institutions involved in financial regulation.

4 Ects

Economics of Entrepreneurship

This course deals with focus on the development and financing of new ventures. The lectures will use theoretical and practical examples of the process of incubating and growing a new venture. We will apply financial and economic theory to the study of new venture strategy, methods of financial forecasting, valuation of new ventures, financial contracting, and choice of financing.

4 Ects

Block IV

Bankruptcy and Corporate Reorganisation

The course will focus on the decision-making processes of corporate managers, stock holders, creditors, unions, financial advisers, investors and turnaround specialists. The course includes both domestic and international cases, representing a broad range of issues from mergers to raising capital.

4 Ects

Derivatives II

Derivatives are a major contribution to risk in any portfolio. It is essential to be able to price these assets well. The course provides an in depth treatment of derivative pricing by using no-arbitrage

models. It considers standard derivatives but also more complex options like interest rate derivatives, credit derivatives, volatility derivatives, inflation related products, exotic derivatives, energy derivatives, cat bonds, securitization, counter party risk, and reinsurance treaties. A case study covers pricing with binomial trees. For practical purposes numerical approximations and hedging methods are discussed.
4 Ects

All courses offered by Duisenberg school of finance are subject to change.