Frankfurt School of Finance & Management
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# Frankfurt School Exchange Student Information

## Overview of Winter Semester 2024 MSc Modules

## Master of Finance*

Core courses and concentrations courses might be combined but it can happen that there is one or two clashes, for scheduling constraints. Please note that some combinations of concentrations might not be compatibles with other courses. These incompatibilities will be indicated on the selection platform.

**Quarter Schedules courses:**

| | | |
|---|---|---|
| Quarter 1: | Academic period: | 02 September – 19 October 2024 |
| | Exam Week: | 21 October – 26 October 2024 |
| Quarter 2: | Academic period: | 28 October – 14 December 2024 |
| | Exam Week: | 16 December – 21 December 2024 |

| Course | Type of course | Quarter |
|---|---|---|
| Statistics & Econometrics | Core course | 1 |
| Foundations of Finance | Core course | 1 |
| Macro & Monetary Economics* | Core course | 1+2 |
| Financial Statement Analysis | Core course | 2 |
| Financial Products & Modelling | Core course | 2 |
| Financial Engineering** | Core course | 1 |
| Portfolio Management | Concentration course | 1 |
| Portfolio Optimization in Continuous Time | Concentration course | 2 |
| FinTech: Innovations in Financial Technology | Concentration course | 2 |
| Credit Risk | Concentration course | 1 |
| Debt Finance | Concentration course | 1 |
| Equity Finance | Concentration course | 1 |
| Case Studies in Investment Banking** | Concentration course | 2 |
| Renewable Energy Finance | Concentration course | 2 |
| Financing Sustainability and Transformation | Concentration course | 1 |
| Environmental Social and Governance Investing** | Concentration course | 1 |

**This module is scheduled across Q1 and Q2*
*** These courses are Block weeks and are scheduled from Monday to Saturday*

Only course tittles of the following courses changed:
*FinTech: Disruptive Innovation? → FinTech - Innovations in Financial Technology*
*Sustainable Finance" → Financing Sustainability and Transformation*
*Environmental Social and Governance Investing → Managing ESG in Investing*

If you combine in your selection core courses and concentrations, it may happen that there will be a clash as they belong to two different intakes. A maximum of two sessions overlap between courses are allowed for international students to enrich the courses portfolio.

**Current as of June 2024. This module catalogue is subject to change.*

**Statistics & Econometrics [QUM71030]**

| | | | | | |
|---|---|---|---|---|---|
| Module Coordinator | | Mönch, Emanuel | | | |
| Programme(s) | | Master of Finance | | | |
| Term | | Semester 1 Q1 | | | |
| Module Duration | | 1 Semester | | | |
| Compulsory/Elective Module | | Compulsory Module | | | |
| Credits: | | 6 | | | |
| Frequency | | Annually | | | |
| Language | | English | | | |
| Total Workload | 150 h | Academic Teaching Hours: | 44 | Remaining Workload: | Self-study |
| | | One academic teaching hour corresponds to 45 minutes. | | | |
| | | Self-study includes lesson preparation and follow-up activities, reading assignments, assessment preparation, take-home assignments, etc. | | | |
| Prerequisites | | Basic knowledge in Mathematics (differential calculus, linear algebra) and statistical methods (descriptive and inferential statistics, econometrics) | | | |
| Content | | Statistical Foundations:<br>• Probability Basics: Random Variables and Distributions<br>• Moments of Statistical Distributions<br>• Behaviour of Large Samples (Law of Large Numbers)<br>• Central Limit Theorem, Normal Distribution<br>• Conditional Probability and Independence<br>• Covariance and Correlation<br><br>Introduction to Econometrics:<br>• Classical Linear Regression Model<br>• Ordinary Least Squares (OLS) Estimation of the Linear Regression Model<br>• Inference in the Linear Regression Model<br>• Multivariate Linear Regression Models<br>• Dynamic Linear Models<br>• Time Series Forecasting<br>• Volatility Modeling<br>• Limited Dependent Variable Models<br>• Panel Models<br><br>Elements of Programming:<br>• Applications in Probability (Monte Carlo Simulation)<br>• Applications in Financial Econometrics (Regression Analysis) | | | |

<table>
<tr><td>Intended Learning Outcomes</td><td>

*Knowledge:*
On successful completion of this module, students will have a thorough comprehension of general statistical principles, i.e. they can:
- explain general statistical principles
- critically evaluate statistical charts
- design appropriate econometric models for problems in finance
- critically interpret statistical/econometric analyses

*Skills:*
On successful completion of this module, students will have the proven ability to apply statistical and econometric methods to examples and cases from practical finance, i.e. they can:
- apply basic statistical tools used in the academic literature
- demonstrate a competent level of analytical reasoning
- design appropriate econometric models
- interpret the estimated results

*Competence:*
On successful completion of this module students can tackle some statistical and econometric problems, i.e. they can:
- design themselves and critically evaluate empirical analyses of financial data

</td></tr>
<tr><td>Forms of teaching, methods and support</td><td>The concepts explained in the class are illustrated with additional exercises and case studies that are part of the lecture notes. Most of the exercises are solved. In addition, some examples are illustrated with corresponding computer code in Python where appropriate.</td></tr>
<tr><td>Type of Assessment(s) and performance</td><td>

<table>
<tr><td>Type of examination</td><td>Duration or length</td><td>Performance Points</td><td>Due date or date of exam</td></tr>
<tr><td>Homework Assignment</td><td>90 min</td><td>30</td><td>During the module</td></tr>
<tr><td>Written exam</td><td>90 min</td><td>90</td><td>Exam week</td></tr>
</table>

Examination Requirements:
Relevant for the exam is the content of the lectures. Written test, open notes open book exam, non-programmable calculator.

Assignment Requirements:
Relevant for the homework assignment is the content of the lectures until the due-date of the assignment. The individual assignment tests the general understanding of concepts and requires students to apply the methods covered in class to individual datasets using Python.

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</table>

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|---|---|
| Recommended Literature | • Brooks (2019): Introductory Econometrics for Finance, Lecture Notes<br>• Additional material will be distributed in the course |
| Module Structure | Since experience shows that the mathematical and statistical skills of students who specialise in economics and finance differ substantially because of different backgrounds, this module is supposed to provide a common ground for all of them as a starting platform. |
| Usability in other Modules/Programmes | Subsequent modules, including Market Risk Modelling, Portfolio Management, and most importantly, Master Thesis |
| Last Approval Date | 2024/05/14 |

**Foundations of Finance [FIN71025]**

| | | | | | |
|---|---|---|---|---|---|
| Module Coordinator | | Sangiorgi, Francesco | | | |
| Programme(s) | | Master of Finance | | | |
| Term | | Semester 1 Q1 | | | |
| Module Duration | | 1 Semester | | | |
| Compulsory/Elective Module | | Compulsory Module | | | |
| Credits: | | 6 | | | |
| Frequency | | Annually | | | |
| Language | | English | | | |
| Total Workload | 150 h | Academic Teaching Hours: | 44 | Remaining Workload: | Self-study |
| | | One academic teaching hour corresponds to 45 minutes. | | | |
| | | Self-study includes lesson preparation and follow-up activities, reading assignments, assessment preparation, take-home assignments, etc. | | | |
| Prerequisites | | Bachelor Degree | | | |
| Content | | This course is intended to provide a market-oriented framework for analyzing the major types of financial decisions made by corporations. Lectures and readings will provide an introduction to present value techniques, capital budgeting principles and problems, asset valuation, the operation and efficiency of financial markets, and the financial decisions of firms. Throughout the class, we will solve problems to enhance our understanding of the covered topics.<br><br>Topics:<br>• Time value of money and the Net Present Value rule<br>• Interest rates and bond valuation<br>• Measuring risk, diversification, mean-variance analysis<br>• CAPM and multifactor models<br>• Stock valuation<br>• Market efficiency<br>• Capital budgeting techniques<br>• Capital structure<br>• Payout policy | | | |

<table>
<tr><td>Intended Learning Outcomes</td><td>Knowledge:<br>On successful completion of this module, students will have a thorough comprehension of i) the functioning of asset markets and the fundamental tools of asset valuation, and ii) the analysis of the main capital structure and investment decisions made by corporations. They will be able to:<br>• Explain the nature and role of different financial markets<br>• Describe the importance of risk and return in financial decision making<br>• Discuss the impact of financial market frictions on the financing decisions of firms<br><br>Skills:<br>On successful completion of this module, students will acquire the theoretical foundations and analytical tools necessary for financial decision making and valuation, i.e. they can:<br>• Apply key financial concepts to value financial securities<br>• Implement valuation techniques for capital budgeting purposes<br>• Evaluate the impact of financing decisions on firm value<br><br>Competence:<br>On successful completion of this module, students will understand the key concepts of modern asset pricing and corporate finance theory and will be able to apply them to practice. In particular, they can:<br>• Apply asset pricing and corporate finance theory to solve problems that investors and firms typically face<br>• Synthesize and critically evaluate information for sound financial decision making<br>• Analyze and interpret data correctly to select value-enhancing projects</td></tr>
<tr><td>Forms of teaching, methods and support</td><td>Lectures and problem sets</td></tr>
<tr><td>Type of Assessment(s) and performance</td><td><table>
<tr><td>Type of examination</td><td>Duration or length</td><td>Performance Points</td><td>Due date or date of exam</td></tr>
<tr><td>Written exam</td><td>120 min</td><td>120</td><td>Exam week</td></tr>
</table></td></tr>
<tr><td>Recommended Literature</td><td>• Berk and DeMarzo, Corporate Finance, 2014, 3rd ed., Pearson<br>• Bodie, Kane and Marcus, Investments, 2014, 10th ed., McGraw-Hill</td></tr>
<tr><td>Module Structure</td><td>11 classes including lectures and problem sets corrections, plus additional tutorials with the teaching assistant of the course.</td></tr>
<tr><td>Usability in other Modules/Programmes</td><td>Financial Products and Modeling; Corporate Finance and Valuation.</td></tr>
<tr><td>Last Approval Date</td><td>2024/05/14</td></tr>
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**Macro- & Monetary Economics [ECO71016]**

| | | | | | |
|---|---|---|---|---|---|
| Module Coordinator | | Winkler, Adalbert | | | |
| Programme(s) | | Master of Finance | | | |
| Term | | Semester 1 Q1 | | | |
| Module Duration | | 1 Semester | | | |
| Compulsory/Elective Module | | Compulsory Module | | | |
| Credits: | | 6 | | | |
| Frequency | | Annually | | | |
| Language | | English | | | |
| Total Workload | 150 h | Academic Teaching Hours: | 44 | Remaining Workload: | Self-study |
| | | One academic teaching hour corresponds to 45 minutes. | | | |
| | | Self-study includes lesson preparation and follow-up activities, reading assignments, assessment preparation, take-home assignments, etc. | | | |
| Prerequisites | | Bachelor Degree | | | |

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| Content | **I Macroeconomics with microeconomic foundations – The Neoclassical Model**<br>I.1 Methodological approach<br>I.2 The labour market<br>I.3 The capital market<br>I.4 A real intertemporal model with investment<br>I.5 The money market<br>I.6 The complete neoclassical model<br><br>**II Keynesian Macroeconomics**<br>II.1 Methodological approach<br>II.2 The aggregate supply curve with sticky nominal wages<br>II.3 Deriving the aggregate demand curve from the IS and the LM curve<br>II.4 The complete Keynesian sticky wage model<br>II.5 The General Theory of Employment, Interest and Money: Selected Issues<br><br>**III Monetary Economics**<br>III.1 The money supply process, credit, investment and saving<br>III.2. The price stability mandate and the Philipps curve<br>III.3 Conventional monetary policy and monetary policy strategies<br>III.4 Unconventional monetary policy and monetary economics in an open economy<br>(box, if time permits) |

<table>
<tr><td>Intended Learning Outcomes</td><td>Knowledge:<br>On successful completion of this module, students will have a thorough comprehension of the major models of macroeconomic and monetary theory, i.e. they can:<br>• Explain the working of labor, goods, capital and money markets within the respective theories<br>• Compare and contrast theories with regard to interdependence / independence of markets, the neutrality of money, wage and price stickiness and macroeconomic policies, notably monetary policy<br>• Explain the macroeconomic policy approaches with regard to stabilizing the price level and employment.<br><br>Skills:<br>On successful completion of this module, students will have the proven ability to apply advanced knowledge to macroeconomic and monetary policy making, i.e. they can:<br>• Analyse the application of monetary policy instruments in different economic settings, i.e. a financial crisis, negative supply shocks etc..<br>• Assess and appraise macroeconomic, notably monetary policy, as conducted in mature market economies<br>• Demonstrate effective skills in comprehension of macroeconomic modelling<br><br>Competence:<br>On successful completion of this module, students can take responsibility to transfer these models when assessing real world macroeconomic developments and policy decisions such as oil price shocks, financial shocks and crises, the COVID-19 pandemic, changes in the fiscal balance, changes in interest rates and central bank balance sheets.</td></tr>
<tr><td>Forms of teaching, methods and support</td><td>Interactive Lecture</td></tr>
<tr><td>Type of Assessment(s) and performance</td><td>
<table>
<tr><th>Type of examination</th><th>Duration or length</th><th>Performance Points</th><th>Due date or date of exam</th></tr>
<tr><td>Homework Assignment</td><td>15 min</td><td>15</td><td>After completion of the neoclassical Model part.</td></tr>
<tr><td>Homework Assignment</td><td>15 min</td><td>15</td><td>After completion of the Keynesian economics part, including tutorials.</td></tr>
<tr><td>Written exam</td><td>90 min</td><td>90</td><td>Exam week</td></tr>
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|---|---|
| Recommended Literature | **I Macroeconomics with microeconomic foundations – The Neoclassical model**<br>• **Williamson, S. (2018), Macroeconomics, 6th edition, Global edition,** https://ebookcentral.proquest.com/lib/franksfm/reader.action?docID=5833549&ppg=22 Chapter 3: Business Cycle Measurement, pp. 90 – 116, Chapter 4: Consumer and Firm Behavior: The Work-Leisure Decision and Profit Maximization, pp. 118 – 161, Chapter 9: A Two-Period Model: The Consumption-Savings Decision and Credit Markets, pp. 326 – 370 (most importantly until page 352), Chapter 11: A Real Intertemporal Model with Investment, 399 – 460 (most importantly until page 446), Chapter 12: Money, Banking, Prices and Monetary Policy, 462 – 497, Chapter 13: Business Cycle Models with Flexible Prices and Wages, 498 – 509<br><br>**Bofinger, P (2001), Monetary Policy** (https://ebookcentral.proquest.com/lib/franksfm/reader.action?docID=1037319&ppg=24 ) Chapter 1, pp. 3 – 6, 11 – 15, Chapter 2, pp. 20 – 24, 28 – 31, Chapter 3, p. 48 – 53<br><br>**II Keynesian Macroeconomics**<br>• **Williamson, S. (2008), Macroeconomics, 3rd (!) ed., Pearson: Boston et al., pp. 441 – 474 (sections II.2-II.5 (excluding Annex))**<br>• **Bofinger, P (2001), Monetary Policy** (https://ebookcentral.proquest.com/lib/franksfm/reader.action?docID=1037319&ppg=24 ): Chapter 2, pp. 24 - 38<br>• **Jakab, Z., Kumhof, M. (2015), Banks are not intermediaries of loanable funds—facts, theory and evidence, Bank of England Staff Working Paper No. 529**<br>**III Monetary Economics**<br>• **Bofinger, P (2001), Monetary Policy** (https://ebookcentral.proquest.com/lib/franksfm/reader.action?docID=1037319&ppg=24 ) Chapter 2, pp. 24-38, Chapter 7, pp. 174-202, Chapter 8, pp. 248-274<br>• Bhattarai, S., Neely, C. J. (2022). An analysis of the literature on international unconventional monetary policy. Journal of Economic Literature, 60(2), 527-97.<br>• Deutsche Bundesbank (2017),The role of banks, non-banks and the central bank in the money creation process, Monthly Report, April, 13-33<br>• Jakab, Z., Kumhof, M. (2015), Banks are not intermediaries of loanable funds—facts, theory and evidence, Bank of England Staff Working Paper No. 529 |
| Module Structure | I Macroeconomics with microeconomic foundations – The neoclassical model<br>II Keynesian macroeconomics<br>III Monetary economics |

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|---|---|
| Usability in other Modules/Programmes | Subsequent modules, e.g. Financial Markets and Institutions |
| Last Approval Date | 2024/05/24 |

**Financial Statement Analysis [ACC71018]**

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|---|---|---|---|---|---|
| Module Coordinator | | Andreicovici, Ionela | | | |
| Programme(s) | | Master of Finance | | | |
| Term | | Semester 1 Q2 | | | |
| Module Duration | | 1 Semester | | | |
| Compulsory/Elective Module | | Compulsory Module | | | |
| Credits: | | 6 | | | |
| Frequency | | Annually | | | |
| Language | | English | | | |
| Total Workload | 150 h | Academic Teaching Hours: | 44 | Remaining Workload: | Self-study |
| | | One academic teaching hour corresponds to 45 minutes. | | | |
| | | Self-study includes lesson preparation and follow-up activities, reading assignments, assessment preparation, take-home assignments, etc. | | | |
| Prerequisites | | None | | | |
| Content | | • Understanding financial statements<br>• Financial programing<br>• Ratio analysis<br>• Analyzing profitability<br>• Accounting quality<br>• Credit risk analysis<br>• Forecasting<br>• Valuation | | | |

<table>
<tr><td>Intended Learning Outcomes</td><td>

*Knowledge:*
Upon successful completion of this module, students will have a thorough comprehension of the major concepts, approaches, and techniques useful for financial statement analysis, i.e. they can:

- Explain how complex business transactions are recorded in financial statements
- Analyze financial statements

*Skills:*
Upon successful completion of this module, students will have the proven ability to apply their theoretical and applied accounting knowledge and the analytical toolkit to typical decision problems in which financial information is used, i.e. they can:

- Assess the financial consequences of entering certain transactions
- Adjust and extrapolate financial statements to let them articulate
- Conduct independent empirical investigations

*Competence:*
Upon successful completion of this module, students can take responsibility to transfer these concepts to typical decision situations in finance and management such as

- Develop and apply tools in financial statement analysis
- Take decisions based on financial statements
- Understand the limitations of financial statement numbers

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<tr><td>Forms of teaching, methods and support</td><td>

- Lecture
- Discussion
- Exercises
- Case studies

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<tr><td>Type of Assessment(s) and performance</td><td>

<table>
<tr><th>Type of Examination</th><th>Duaration or length</th><th>Performance Points</th><th>Due date or date of exam</th></tr>
<tr><td>Project works</td><td>Throughout the entire course</td><td>40</td><td>end of module</td></tr>
<tr><td>Written Examination</td><td>80 minutes</td><td>80</td><td>exam week</td></tr>
</table>

The examination forms complement each other and test different sets of knowledge. The written examination evaluates students' grasp of theoretical concepts and their ability to analyze and evaluate a company’s current performance using financial statement information. The project work assesses students’ ability to conduct independent empirical investigations.

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|---|---|
| Recommended Literature | Course material:<br><br>Slides will be provided to accompany the lecture. Other course material of a more preparatory nature (readings, cases, case inputs files, etc.) will be posted to the course website prior to class. |
| Module Structure | The basic format of the classes consists of lectures and case study discussions. Classes will<br>generally start with an introduction to the main topic at hand, followed by case studies and exercises. |
| Usability in other Modules/Programmes | Advanced corporate valuation, Mergers and Acquisitions. |
| Last Approval Date | 2024/05/27 |

**Financial Products & Modelling [FIN71579]**

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|---|---|---|---|---|---|
| Module Coordinator | | Vilkov, Grigory | | | |
| Programme(s) | | Master of Finance | | | |
| Term | | Semester 1 Q2 | | | |
| Module Duration | | 1 Semester | | | |
| Compulsory/Elective Module | | Compulsory Module | | | |
| Credits: | | 6 | | | |
| Frequency | | Annually | | | |
| Language | | English | | | |
| Total Workload | 150 h | Academic Teaching Hours: | 44 | Remaining Workload: | Self-study |
| | | One academic teaching hour corresponds to 45 minutes. | | | |
| | | Self-study includes lesson preparation and follow-up activities, reading assignments, assessment preparation, take-home assignments, etc. | | | |
| Prerequisites | | Previous Core Modules, Python basics | | | |
| Content | | Financial Markets<br>• Trading, Instruments, Participants, and Mechanics<br>• Regulatory Framework<br>Introduction to Financial Products<br>• Discrete-Time Valuation Framework<br>• Equity Derivatives<br>• Valuation of Fixed Income Instruments<br>• Introduction to Interest Rate Derivatives: Swaps<br>Introduction to Modeling: Tools and Programming with Python<br>• Introduction to Python<br>• Pricing / linear algebra<br>• Solving all course-related problems in Python | | | |

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| Intended Learning Outcomes | *Knowledge:*<br>On completion of this model, students will be able to express substantial knowledge on financial products and modelling, i.e., they can:<br>• Describe the organization and functionality of financial markets and their regulatory framework<br>• Identify the most relevant financial instruments for a specified purpose<br><br>*Skills:*<br>On successful completion of this model, students will have the proven ability to apply learned methods to the financial products and modelling (within discrete pricing framework), e.g., they can:<br>• Analyze financial markets and evaluate financial instruments of different levels of complexity using Python environment<br>• Develop an appropriate solution for a given financial risk situation and know how to implement the solution using various financial instruments<br>• Evaluate financial instruments with required standard and non-standard features theoretically an din Python<br>• Write simple fucntional programs in Python for product evaluation, trading and risk management purposes<br><br>*Competence:*<br>On successful completion of this model, students will have acquired the competence to:<br>• Evaluate and manage complex financial instruments to adequately solve financial management problems<br>• Assume a responsible position in the area of financial risk management, investment banking, asset management or corporate finance |
| Forms of teaching, methods and support | Lectures, applied tutorials, individual home assignments |

Type of Assessment(s) and performance

| Type of examination | Duration or length | Performance Points | Due date or date of exam |
|---|---|---|---|
| Written Exam as Online Quiz | 60 minutes | 60 | Exam week |
| Homework Assignment 1 | 2 to 6 hours each, depending on the competency level | 6 | During the module, about weekly |
| Homework Assignment 2 | 2 to 6 hours each, depending on the competency level | 6 | During the module, about weekly |
| Homework Assignment 3 | 2 to 6 hours each, depending on the competency level | 6 | During the module, about weekly |
| Homework Assignment 4 | 2 to 6 hours each, depending on the competency level | 12 | During the module, about weekly |
| Class participation/ case study | One full class | 10 | During the module |
| Homework assignment 5 (Python Essentials 1 Certificate) | 40 minutes | 20 | End of first week of teaching |

Assignments allow for learning efficient use of programming for modeling and solving tasks related to financial modeling. Exam tests the theoretical knowledge acquired in the course and the efficient application of modeling skills to solving practical examples.

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|---|---|
| Recommended Literature | *Extensively used in the course*<br>• Hull, John C : Options, Futures and other Derivatives,10th ed., Pearson<br>• QuantEcon online book : https://python-programming.quantecon.org/intro.html<br>• Online tutorials for Python (DataCamp, etc.)<br><br>*Useful as an additional reference*<br>• Sundaram, Rangarajan K. and Sanjiv Das, Derivatives: Principles and Practice, Mcgraw Hill Book 2010 |
| Module Structure | This module discusses the most important financial instruments. These include stocks, bonds, and derivatives like swaps, futures, options. For all instruments, we will clarify the intermediate and final cash flows, introduce basic valuation methods, and discuss possible applications. The module also discusses rules of securities trading as well as the organization and functionality of securities exchanges and over-the-counter markets. Most classes will involve both theoretical discussions and practical applications using Python. Students are expected to invest singificant amount of time into learning Python and applying it to solving homework, exam, and other modeling problems. |
| Usability in other Modules/Programmes | Master thesis, and multiple individual courses, including Risk Management, Corporate Finance and Valuation, Market Risk Modeling, Derivatives Analysis, Financial Engineering, Credit Risk, and Portfolio Management. |
| Last Approval Date | 2024/05/24 |

**Financial Engineering [FIN74945]**

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|---|---|---|---|---|---|
| Module Coordinator | | Heidorn, Thomas | | | |
| Programme(s) | | Master of Finance | | | |
| Term | | Semester 3 Q1 | | | |
| Module Duration | | 1 Semester | | | |
| Compulsory/Elective Module | | Concentration Module | | | |
| Credits: | | 6 | | | |
| Frequency | | Annually | | | |
| Language | | English | | | |
| Total Workload | 150 h | Academic Teaching Hours: | 44 | Remaining Workload: | Self-study |
| | | One academic teaching hour corresponds to 45 minutes. | | | |
| | | Self-study includes lesson preparation and follow-up activities, reading assignments, assessment preparation, take-home assignments, etc. | | | |
| Prerequisites | | Derivative Analysis | | | |
| Content | | 1. Understanding Interest Rate Risk<br>1.1 Forecast<br>1.2 Value at Risk for Rates<br>1.3 Cash Flow at Risk<br>1.4 Interest Rate Swaps<br><br>2. Pricing and Risk Analysis<br>2.1 Reverse/Leverage Floater<br>2.2 Callable Bond<br>2.3 Collared Floater<br>2.4 Interest Rate Swap with Euribor in Arrears<br><br>3. Structuring a Financial Package<br>3.1 Individual Pension Plan<br>3.2 Pension Plan from a Life Insurance<br>3.3 Foreign Exchange Management for a Corporate<br>3.4 Kerosine Hedge for an Airline | | | |

<table>
<tr><td>Intended Learning Outcomes</td><td>Knowledge:<br>On successful completion of this module, students will have a thorough comprehension of the major concepts, approaches and techniques in Financial Engineering i.e. they can:<br>• Evaluate complex financial products<br>• Understand the arbitrage relations in the financial market<br>• Create solutions for individual financial situations<br><br>Skills:<br>On successful completion of this module, students will have the proven ability to apply advanced knowledge to efficiently manage financial positions, i.e. they can<br>• Analyze the risk/return relationship of the products<br>• Communicate the solution to the customer<br>• Work in international groups under pressure<br><br>Competence:<br>On successful completion of this module, students can take responsibility to transfer these concepts to typical leadership and management situations in banks, such as Treasury, Sales and Trading.</td></tr>
<tr><td>Forms of teaching, methods and support</td><td>Transfer of the elements of investment banking under time pressure with the help of group case studies and external talks.</td></tr>
<tr><td>Type of Assessment(s) and performance</td><td><table><tr><td>Type of examination</td><td>Duration or length</td><td>Performance Points</td><td>Due date or date of exam</td></tr><tr><td>Presentations</td><td>120 min</td><td>120</td><td>During the module</td></tr></table><br>Presentations will be based on case studies.</td></tr>
<tr><td>Recommended Literature</td><td>• John C. Hull: Options, Futures and other Derivatives, Prentice Hall International 8th Edition 2012<br>• Hans R. Stoll / Robert E. Whaley: Futures and Options, South Western Publishing Cincinatti 1993<br>• Heidorn Thomas: Finanzmathematik in der Bankenpraxis, Gabler 6. Auflage 2009</td></tr>
<tr><td>Module Structure</td><td>Financial engineering will take application a step further. Under strong time constraints the students will use their knowledge from the capital market concentration to prepare and present case studies. On the one hand this focuses on pricing, analysing and selling financial products to clients. On the other hand the students learn to work in international groups. Additionally special talks by market specialists on FX trading and interest rate markets give additional insight.</td></tr>
<tr><td>Usability in other Modules/Programmes</td><td>Other modules in Capital Markets concentration</td></tr>
<tr><td>Last Approval Date</td><td>2024/06/19</td></tr>
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**Portfolio Management [FIN73745]**

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|---|---|---|---|---|---|
| Module Coordinator | | Uhlmann, Alexander | | | |
| Programme(s) | | Master of Finance | | | |
| Term | | Semester 3 Q1 | | | |
| Module Duration | | 1 Semester | | | |
| Compulsory/Elective Module | | Concentration Module | | | |
| Credits: | | 6 | | | |
| Frequency | | Annually | | | |
| Language | | English | | | |
| Total Workload | 150 h | Academic Teaching Hours: | 44 | Remaining Workload: | Self-study |
| | | One academic teaching hour corresponds to 45 minutes. | | | |
| | | Self-study includes lesson preparation and follow-up activities, reading assignments, assessment preparation, take-home assignments, etc. | | | |
| Prerequisites | | Financial Products and Modeling (with introduction to programming) | | | |

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| Content | **Theory & Practice of portfolio optimization**<br>• Risk, Risk Premium, and the CAPM: Estimating expected returns, systematic risk, estimating CAPM alpha and beta<br><br>• Equities in the Cross-Section: The equity market, portfolios based on stock characteristics, the Fama-French three (four) factors<br><br>• Equities in the Time-Series: The Random Walk model, Market timing and predicting stock returns, Estimating volatility, time-varying volatility (ARCH and GARCH), Fama-Macbec tests<br><br>• Other Asset Classes: Derivatives, Fixed Income, Alternatives, Main risk factors and importance of correlation for portfolio construction<br><br>• Portfolio Choice: Optimal portfolio, limits of Mean-Variance, Black-Litterman<br><br>• Portfolio Management implementation: Liquidity, Currency risks, Shrinkage, Constraints, Rebalancing<br><br>• Risk Management: VaR, tail-risk, Conditional VaR, Expected Shortfall, Estimation<br><br>• Portfolio Management in practice: Asset Management for individuals, Mutual Funds, ETFs, Performance Measurement, ESG investments |

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| Intended Learning Outcomes | ***Knowledge:***<br>On successful completion of this module, students will have a thorough comprehension of quantitative portfolio management, i.e. they can:<br>• Specify modern portfolio optimization tools and methods, applied to single and multiple asset classes<br>• Outline the evolution of portfolio management from modern portfolio theory as formulated by Markowitz (1952) to risk parity modelling, benchmarking, and multi-factor modelling, which are the state of the art in the asset management industry.<br>• Specify modern risk management and tail-risk optimization tools and methods, applied to single and multiple asset classes<br>• Outline the evolution of portfolio risk, in particular tail-risk, management from modern risk management theory, beginning with Value-at-Risk in 1993, to risk parity modelling, dynamic tail-risk optimization and portfolio insurance models, and multi-factor modelling, which are the state of the art in the asset management industry and financial risk management<br><br>***Skills:***<br>On successful completion of this module, students will have the proven ability to apply theoretical tools in real situations, i.e. they can:<br>• Use various portfolio and risk optimization techniques in realistic situations<br>• Evaluate risk and performance for various portfolios<br>• Build risk optimized portfolio using modern portfolio theory (with necessary adjustments) and more advanced approaches.<br><br>***Competence:***<br>On successful completion of this module, students can transfer the acquired knowledge and methods to real life situations in organizations, i. e. they can:<br>• Research, process, and analyze market information to build efficient portfolios from multiple asset classes<br>• Analyze portfolio performance including profitability and risk profile<br>• Assume a responsible position in the area of financial risk management, investment banking (both sell - and buy-side), and asset managment, e.g. as portfolio managers |
| Forms of teaching, methods and support | Lectures, group home assignment (3 students each), in-class discussions and exercises of the practical issues in portfolio management |

<table>
<tr><td>Type of Assessment(s) and performance</td><td>
<table>
<tr><td>Type of examination</td><td>Duration or length</td><td>Performance Points</td><td>Due date or date of exam</td></tr>
<tr><td>1 group home assignment</td><td>at least two sessions</td><td>30</td><td>During the module</td></tr>
<tr><td>Quiz</td><td>30 minutes</td><td>30</td><td>To be announced</td></tr>
<tr><td>Written Exam</td><td>60 minutes</td><td>60</td><td>Exam week</td></tr>
</table>
<br>Competencies evaluated: Programming skill and data management (Home Assignment). Discerning of competing theoretical knowledge (Quiz). Theoretical knowledge and argumentative skills (Written Exam)</td></tr>
<tr><td>Recommended Literature</td><td>Extensively used in the course:<br><br>Asset Allocation From Theory to Practice and Beyond, By William Kinlaw, Mark P. Kritzman, David Turkington (2021)<br><br>Additional material posted on Canvas</td></tr>
<tr><td>Module Structure</td><td>This module starts with the extensive discussion of the theoretical and computational tools used in the portfolio analysis and in risk management. Theoretical lectures will be supported by group home assignments/ in-class quizzes. In these home assignments the students will apply the covered theoretical tools to a number of real portfolio analysis problems, also introduced in class in the form of lectures.<br><br>Extending the portfolio risk management perspective in the first half we will have a deeper emphasis on portfolio optimization methods such as risk parity and multi-factor investing. The second half focuses on portfolio tail risk, which discusses in detail Value-at-Risk and its extensions of tail-risk management for portfolio risk optimization, followed by micro risk management using risk factors.</td></tr>
<tr><td>Usability in other Modules/Programmes</td><td>Dedicated electives on Portfolio Optimisation</td></tr>
<tr><td>Last Approval Date</td><td>2024/05/22</td></tr>
</table>

**Portfolio Optimization in Continuous Time**
**[FIN93946]**

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|---|---|---|---|---|---|
| Module Coordinator | | Vecer, Jan | | | |
| Programme(s) | | Master of Finance | | | |
| Term | | Semester 3 Q1 | | | |
| Module Duration | | 1 Semester | | | |
| Compulsory/Elective Module | | Concentration Module | | | |
| Credits: | | 6 | | | |
| Frequency | | Annually | | | |
| Language | | English | | | |
| Total Workload | 150 h | Academic Teaching Hours: | 44 | Remaining Workload: | Self-study |
| | | One academic teaching hour corresponds to 45 minutes. | | | |
| | | Self-study includes lesson preparation and follow-up activities, reading assignments, assessment preparation, take-home assignments, etc. | | | |
| Prerequisites | | Statistics and Econometrics; Capital Markets or Risk Management concentration | | | |
| Content | | Basis concepts: physical measure, risk neutral measure, growth optimal portfolio, replication of the contingent claims.<br><br>Review of financial models in continuous time: simple random walk, Brownian motion, stochastic calculus, concept of no arbitrage and risk neutral measure, replication and hedging.<br><br>Metron's portfolio problem, link to derivative prices, approximation with traded options, estimation of the model parameters, comparison with Markowitz portfolio theory, model implementation using real market data<br><br>Bayesian approach to modeling: principles of Bayesian statistics, comparison to the frequentist approach, working with multiple trading models including automatic recalibration of model parameters, asymptotic wealth distribution for Bayesian traders | | | |

<table>
<tr><td>Intended Learning Outcomes</td><td>Knowledge:<br><br>On successful completion of this module, students will have a thorough comprehension of cutting edge techniques of modern portfolio theory, including:<br><br>- utility maximization and finding optimal payoff functions<br>- estimate market parameters by Bayesian statistical techniques<br>- construct rubust optimal portfolios with dynamic evolution for arbitrary asset classes<br><br>Skills:<br><br>On successful completion of this module, students will be able:<br><br>- analyze market data in order to create dynamically evolving scenario predictions for future asset price evolutions<br>- work with large financial data sets (using Python)<br>- identify sets of profitable scenarios and replicate them by trading<br>- compute confidence intervals for the final portfolio values<br><br>Competence:<br><br>The graduates of this course can apply this knowledge in investment or hedge funds, banks, or in wealth management firms.</td></tr>
<tr><td>Forms of teaching, methods and support</td><td>Lecture, discussion, computer simulations, case studies and questions</td></tr>
<tr><td>Type of Assessment(s) and performance</td><td><table><tr><td>Typ of examination</td><td>Duration or length</td><td>Performance points</td><td>Due date or date of exam</td></tr><tr><td>Project Works and Homework Assignments</td><td>20 hours, including in-session project development</td><td>120</td><td>Exam week</td></tr></table><br>All assignments are done in Python and they are individual.</td></tr>
<tr><td>Recommended Literature</td><td>Vecer, J.: Principles of Bayesian Portfolio Choice</td></tr>
<tr><td>Module Structure</td><td>The focus of the module is to fully grasp no arbitrage theory with the consequences on construction of attainable portfolios. The lectures and supplementary materials will help students to master financial data analysis using modern programming languages (such as Python).</td></tr>
<tr><td>Usability in other Modules/Programmes</td><td>AI & New Frontier, Applying Artificial Intelligence in Business, Practical Data Science and Artificial Intelligence in Python, FX Options & Structured Products, Quantitative Trading and Analysis with Python, Master Thesis</td></tr>
<tr><td>Last Approval Date</td><td>2024/05/16</td></tr>
</table>

**FinTech - Innovations in Financial Technology [FIN71948]**

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|---|---|---|---|---|---|
| Module Coordinator | | Kreiterling, Christoph | | | |
| Programme(s) | | Master of Finance | | | |
| Term | | Semester 3 Q1 | | | |
| Module Duration | | 1 Semester | | | |
| Compulsory/Elective Module | | Concentration Module | | | |
| Credits: | | 6 | | | |
| Frequency | | Annually | | | |
| Language | | English | | | |
| Total Workload | 150 h | Academic Teaching Hours: | 44 | Remaining Workload: | Self-study |
| | | One academic teaching hour corresponds to 45 minutes. | | | |
| | | Self-study includes lesson preparation and follow-up activities, reading assignments, assessment preparation, take-home assignments, etc. | | | |
| Prerequisites | | To maximize your learning experience and ensure you can fully engage with the course content, the following prerequisites are required:-Foundational Knowledge: You should have a basic understanding of business administration and financial management. This foundational knowledge will support your comprehension and application of more advanced FinTech concepts discussed in the course.-Technical Skills: Proficiency in presentation software is essential, as you will be expected to articulate your ideas and findings clearly and effectively during presentations.-Commitment to Engagement: Class attendance is mandatory. Your presence and participation are critical to both your personal success and the vibrancy of the learning environment we cultivate together.These prerequisites are designed to set the stage for a deep and engaging exploration of FinTech, ensuring that all participants are prepared and equipped to dive into the complex interactions of finance, technology, and innovation. | | | |

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| Content | Embark on a **transformative journey** through the dynamic realm of FinTech, where **technology catalyses innovation within financial services**, leading to revolutionary business models, applications, processes, and products. This shift is profoundly altering financial markets and institutions along with the very nature of financial services delivery.<br><br>This module, designed for those ready to explore the frontier of financial innovation, aims to arm you with a comprehensive understanding of how FinTech **integrates with and reshapes the financial sector**. You will delve into the most essential **technological breakthroughs** currently redefining finance, exploring their capacity to **streamline operations**, **mitigate informational asymmetries**, and leverage **network effects**.<br><br>Prepare to master the complex **interplay between finance, technology, and regulation**. Through this module, you will gain the essential knowledge and skills to not only keep pace with but also lead in a continually evolving financial landscape. Become a part of the frontline of financial technology, and **position yourself at the cutting edge of the industry**. |

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| Intended Learning Outcomes | This course meticulously prepares you, the students, to excel in the swiftly evolving landscape of financial technology. By engaging with this curriculum, you will achieve a deep and practical understanding of several critical dimensions:<br><br>1. **Innovation and Application**: You will be able to integrate cutting-edge FinTech technologies and analytics into groundbreaking business models. You will be able to drive market trends through strategic innovation.<br><br>2. **Strategic Management**: Develop decisive leadership skills essential for navigating the strategic complexities where FinTech is a pivotal element. Equip yourself with advanced managerial insights to dominate in technology-driven financial landscapes.<br><br>3. **Foundational Knowledge**: Clearly articulate and critically evaluate the fundamental pillars of FinTech, addressing essential questions such as "What is FinTech?" and "Who are the key players in the field?"<br><br>4. **Sector-Specific Technologies**: Expertly navigate and elucidate the application of FinTech across diverse sectors, including Money and Payment Systems, Emerging Technologies, Digital and Alternative Finance, and crucial areas such as RegTech and Data Security.<br><br>5. **Ecosystem Understanding**: Analyse and detail the intricate interplay and synergies among various stakeholders and technologies that define the vibrant FinTech ecosystem.<br><br>6. **Navigating Future Trends**: Strategically forecast and shape the future trajectories of FinTech. You will develop the foresight and strategic acumen to capitalize on emerging technological innovations.<br>Upon completing this module, you will be thoroughly equipped with both the theoretical frameworks and the practical skills necessary to carve a leading path in the transformative realm of FinTech, poised to confront its challenges and leverage its vast opportunities.<br><br>By mastering this module, you will be equipped not only with theoretical knowledge but also practical skills to build a path in the transformative field of FinTech, ready to face its challenges and capitalize on its opportunities. |

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| Forms of teaching, methods and support | This module is designed as an interactive learning experience, demanding active engagement and commitment to excellence from each participant. **Attendance is compulsory** to foster a cohesive learning environment.<br>• **Interactive Lectures**: Be prepared to engage yourself in lectures that require not only attention but active participation. Your insights and inquiries will drive deeper exploration of topics.<br>• **Collaborative Assignments**: Engage in team-based projects that culminate in presentations, allowing you to harness collective intelligence and refine your communication skills.<br>• **Peer Review**: Develop critical analytical skills by engaging in structured peer reviews of your classmates' work, providing, and receiving constructive feedback.<br>• **Dynamic Participation**: Expect to demonstrate your engagement through a variety of in-class activities. These will include posing questions, participating in discussions, sharing your relevant personal experiences, and responding to both spontaneous and structured quizzes.<br>This module structure is designed to ensure you not only absorb information but also apply it, preparing you to navigate and influence the fast-evolving domain of FinTech. |

Type of Assessment(s) and performance

This module rigorously assesses your engagement and mastery of the subject through a structured and comprehensive evaluation system.
**Attendance is essential** for successful completion.

| Type of examination | Duration or length | Performance points | |
|---|---|---|---|
| Oral Participation | Ongoing throughout the module | 30 | |
| Project Work | Ongoing throughout the module | 30 | |
| Written examination | 60 minutes | 60 | |

**Assessment Components and Criteria**

1. **Oral Participation**: Daily participation is crucial and will be meticulously evaluated. This involves your ability to engage in meaningful discussions, apply complex reasoning, and effectively communicate your ideas.
   Points: 5 points for each of the **six morning sessions**

2. **Project Work**: You will collaborate with peers on daily tasks, emphasizing teamwork and the ability to navigate group dynamics productively. These assignments also assess your self-regulation skills and punctuality in meeting deadlines.
   Points: 6 points for each of the **five afternoon sessions**

3. **Written examination**: The course culminates in a final exam that evaluates your comprehensive understanding and ability to apply FinTech knowledge. This exam requires you to demonstrate mastery of critical concepts and the effective integration of information from diverse sources.

**Competencies Evaluated**
**Oral Participation**: Effective communication and complex reasoning.
**Project work**: Teamwork, cooperative behavior, self-regulation, and deadline adherence.
**Written examination**: Knowledge application, strategic analysis, and synthesis of information within the FinTech domain.These assessments are designed to challenge you and refine your professional capabilities, ensuring you are well-prepared to contribute innovatively in the FinTech industry.

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| Recommended Literature | Compulsory literature:<br><br>KPMG (2023). Pulse of Fintech.<br><br>CB Insights (2023). State of Fintech Q2’23 Report.<br><br>Dealroom (2023). Fintech Q1 2023 Report.<br><br>CB Insights (2023). The Periodic Table of FinTech.<br><br>Citi GPS (2016) Digital Disruption: How FinTech Is Forcing Banking to a Tipping Point. |

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| Module Structure | Day 1: **Fintech Foundations**: Landscape, Disruption, and Regulation<br>*Morning*:<br>- Navigating New Territories: Explore the expansive landscape of fintech.<br>- Disruption in Action: Understand how technology disrupts traditional finance.<br>- Rules of the Game: Delve into the critical regulations shaping the industry.<br>*Afternoon*: Group Assignments: Apply morning concepts in a collaborative setting.<br><br>Day 2: **Tech-Powered Finance**: Computing, Cloud, and Blockchain<br>*Morning*:<br>- Computing Power: Unpack the role of advanced computing in fintech.<br>- Sky's the Limit: Harness the potential of cloud technologies.<br>- Chain Reaction: Discover how blockchain is revolutionizing finance.<br>*Afternoon*: Group Assignments: Engage in projects that emphasize technological integration.<br><br>Day 3: **Future Forward**: BI, Open Source, and Data Management<br>*Morning*:<br>- Intelligence Insight: Explore the impact of Business Intelligence.<br>- Open Source Innovations: Leverage open source for fintech solutions.<br>- Data-Driven Decisions: Master the art of effective data management.<br>*Afternoon*: Group Assignments: Tackle real-world problems using BI tools and data strategies.<br><br>Day 4: **Transforming Finance**: Digital Transformation and Investment Strategies<br>*Morning*:<br>- Digital Dawn: Examine how digital transformation is reshaping finance.<br>- Invest Wisely: Learn about modern investment strategies influenced by fintech.<br>- Strategic Shifts: Identify the trends and technologies driving market changes.<br>*Afternoon*: Group Assignments: Develop strategic investment plans using digital tools.<br><br>Day 5: **Strategic Fintech**: Building and Limiting Financial Technologies<br>*Morning*:<br>- Building Blocks: Learn the essentials of constructing fintech platforms.<br>- Limitations and Challenges: Discuss the constraints faced by fintech developers.<br>- Strategic Scaffolding: Craft strategies for sustainable fintech growth.<br>*Afternoon*: Group Assignments: Create proposals for overcoming fintech limitations.<br><br>Day 6: **Finale and Foresight**: Exam and Future Insights<br>*Morning*:<br>- Review and Reflect: Recap the week's key concepts and prepare for the exam.<br>- Predictive Patterns: Analyze trends to predict the future of fintech. |

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| | - Futuristic Forecasting: Engage with emerging technologies and their potential impact.<br>*Hint: No afternoon session.* |
| Usability in other Modules/Programmes | Elective "Blockchain and Digital Assets" and Thesis. |
| Last Approval Date | 2024/04/29 |

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**Credit Risk [FIN71947]**

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| Module Coordinator | | Irle, Sebastian | | | |
| Programme(s) | | Master of Finance | | | |
| Term | | Semester 3 Q1 | | | |
| Module Duration | | 1 Semester | | | |
| Compulsory/Elective Module | | Concentration Module | | | |
| Credits: | | 6 | | | |
| Frequency | | Annually | | | |
| Language | | English | | | |
| Total Workload | 150 h | Academic Teaching Hours: | 44 | Remaining Workload: | Self-study |
| | | One academic teaching hour corresponds to 45 minutes. | | | |
| | | Self-study includes lesson preparation and follow-up activities, reading assignments, assessment preparation, take-home assignments, etc. | | | |
| Prerequisites | | None. | | | |
| Content | | 1. Introduction to credit risk modeling<br>2. Portfolio default risk<br>3. Migration and default risk in the trading book<br>4. Credit Default Swaps (CDS) and estimation of default probabilities with CDS spreads | | | |

<table>
<tr><td>Intended Learning Outcomes</td><td>Knowledge:<br>On successful completion of this module, students will have a thorough comprehension of loan portfolio default risk models and some structured producs, i.e. they can:<br>• Specify statistical approaches for analysing the dependency structure between loans;<br>• Review modeling approaches for risk management, particularly involving KMV-type models.<br><br>Skills:<br>On successful completion of this module, students will have the proven ability to apply statistical methods to estimate the risk of financial losses due to rating migrations and defaults, i.e. they can:<br>• Estimate probabilities of default from CDS spreads;<br>• Apply risk modeling techniques to compute the VaR of a loan portfolio model;<br>• Apply risk modeling techniques to compute the VaR of trading book positions with specific interest rate risk, taking into account migration and default risks only.<br><br>Competence:<br>On successful completion of this module, students can take responsibility to transfer these methods to situations in organisations, i.e. they can:<br>• Appreciate the importance of quantitative risk management;<br>• Discuss any advanced model for migration and default risk with quantitative risk modelers;<br>• Discuss fundamental approaches for pricing structured products with quantitative risk modelers;<br>• Assess and judge quantitative loan portfolio models in the context of bankwide risk management;<br>• Act as an interface between risk modelers and risk managers.</td></tr>
<tr><td>Forms of teaching, methods and support</td><td>Lecture, script, coding examples, group project.</td></tr>
<tr><td>Type of Assessment(s) and performance</td><td><table><tr><td>Type of examination</td><td>Duration or length</td><td>Performance Points</td><td>Due date or date of exam</td></tr><tr><td>Project work</td><td>30 min</td><td>120</td><td>During the module</td></tr></table><br>The project work consists of case study presentations in groups.</td></tr>
<tr><td>Recommended Literature</td><td>• Hull, E.G.: Options, Futures & Other Derivatives, Prentice-Hall International, London 2000</td></tr>
<tr><td>Module Structure</td><td>Lecture and group projects.</td></tr>
<tr><td>Usability in other Modules/Programmes</td><td>Applying Artificial Intelligence in Business, Quantitative Trading and Analysis with Python, Alternative Investments, Blockchain, Resource Allocation Strategy</td></tr>
<tr><td>Last Approval Date</td><td>2024/05/10</td></tr>
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**Debt Finance [FIN71065]**

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| Module Coordinator | | Steffen, Sascha | | | |
| Programme(s) | | Master of Finance | | | |
| Term | | Semester 3 Q1 | | | |
| Module Duration | | 1 Semester | | | |
| Compulsory/Elective Module | | Concentration Module | | | |
| Credits: | | 6 | | | |
| Frequency | | Annually | | | |
| Language | | English | | | |
| Total Workload | 150 h | Academic Teaching Hours: | 44 | Remaining Workload: | Self-study |
| | | One academic teaching hour corresponds to 45 minutes. | | | |
| | | Self-study includes lesson preparation and follow-up activities, reading assignments, assessment preparation, take-home assignments, etc. | | | |
| Prerequisites | | Foundations of Finance, Corporate Finance | | | |
| Content | | **Topics**<br>• Introduction to “Debt Finance” & Capital structure decisions of firms<br>• Credit risk<br>• Securitization<br>• Bank lending and contract design<br>• Loan syndication<br>• Debt renegotiation<br>• Secondary markets: Bonds & Loans<br>• Leveraged loan markets and LBOs<br>• Leveraged debt restructuring<br>• Private equity investors in leveraged loans<br>• Middle market lending, direct lending funds | | | |

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| Intended Learning Outcomes | Competencies developed<br>The skills and knowledge that you will learn in this course comprise the techniques for financial decision making in an international setting, including<br><br>• Deciding between debt and equity<br>• Financing international projects<br>• Estimating the value of a businesses<br>• Evaluating credit risk of firms<br>• Structuring & negotiating loans<br>• Understanding incentives in lending syndicates<br>• Decide between bond vs loan financing<br>• Explaining funding options available to firms<br>• Understanding the role of commercial and investment banks in raising capital<br>• Understanding causes and consequences of financial crises and the effect of regulation on economic growth<br><br>This course has two main learning objectives:<br><br>• Show proficiency in finance as a major business function in a global environment.<br>• Display critical thinking and analytical ability for creativity and innovation. |
| Forms of teaching, methods and support | The course is highly interactive with case studies/exercises in almost every class. Thus, you need to be prepared, have read the lecture material before the class in which they are discussed and be prepared to engage in a discussion which I moderate. I will cold-call students if I have the feeling they are not prepared. Some of the cases are more quantitative in nature but our focus is on the economics. The case studies complement a rigorous discussion of the underlying theory and introduction of institutional characteristics. I will draw from recent empirical and theoretical academic research whenever possible.<br><br>There will be problem sets to review the material. Problem sets include concept questions (I want you to understand the "why" in addition to the "how") as well as empirical questions. I want you to work on these problem sets on time and I will discuss a subset of the question in two tutorials during the course.<br><br>Guest speakers from highly reputable firms will strengthen your learning experience. |

<table>
<tr><td>Type of Assessment(s) and performance</td><td>
<table>
<tr><td>Type of examination</td><td>Duration or length</td><td>Performance points</td><td>Due date or date of exam</td></tr>
<tr><td>Written examination</td><td>60 minutes</td><td>60</td><td>Exam week</td></tr>
<tr><td>Case Studies</td><td>30 minutes</td><td>60</td><td>During the module</td></tr>
</table>
</td></tr>
<tr><td>Recommended Literature</td><td>Required: Lecture Notes and Slides (and additional material I post throughout the class)<br><br>Recommended: Berk, Jonathan, and Peter DeMarzo, Corporate Finance, Pearson International Edition.<br><br>Those of you with a limited exposure to finance may also find the following additional text useful:<br><br>Downes, John, and Jordan Elliot Goodman, Barron s Financial Guides: Dictionary of Finance and Investment Terms, 9th edition (Barron’s Educational Series, 2014)</td></tr>
<tr><td>Module Structure</td><td>One of the critical activities a company must do well to succeed is the raising of capital. This course explores the role of financial intermediaries (such as commercial and investment banks or private equity firms) in helping non-financial firms raise capital. We study domestic and international funding markets and financial instruments available to firms to raise capital. We take the view of both the firm that wants to raise capital and the intermediaries who provide funds. While a large part of the class focuses on capital raising issues relevant to larger (publicly listed) firms, we also examine financing choices of smaller firms, so-called small-medium enterprises (SME).<br><br>We cover topics in this course such as the bank debt versus bond debt, the process, participants and economics of loan syndication, importance of relationships between firms and intermediaries (and between intermediaries), credit risk, financial contracting, and private equity and leveraged buyouts (LBOs). We will discuss these topics also in the context of the 2008-2009 global financial crisis. While most of our discussion takes a micro-level perspective (with implications on firms and contracts etc.), we also discuss macroeconomic implications such as what current credit market conditions might imply for future economic development (e.g. GDP growth or aggregate investment and employment).</td></tr>
<tr><td>Usability in other Modules/Programmes</td><td>Other modules in Corporate Finance Concentration</td></tr>
<tr><td>Last Approval Date</td><td>2024/05/29</td></tr>
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**Equity Finance [FIN75385]**

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| Module Coordinator | | Kappis, Tobias; Söffge, Fabian | | | |
| Programme(s) | | Master of Finance | | | |
| Term | | Semester 3 Q1 | | | |
| Module Duration | | 1 Semester | | | |
| Compulsory/Elective Module | | Concentration Module | | | |
| Credits: | | 6 | | | |
| Frequency | | Annually | | | |
| Language | | English | | | |
| Total Workload | 150 h | Academic Teaching Hours: | 44 | Remaining Workload: | Self-study |
| | | One academic teaching hour corresponds to 45 minutes. | | | |
| | | Self-study includes lesson preparation and follow-up activities, reading assignments, assessment preparation, take-home assignments, etc. | | | |
| Prerequisites | | Principles or Foundations of Finance; Corporate Finance; Intermediate level Excel modelling skills; Familiarity with key concepts of Accounting; | | | |
| Content | | The objective of this module is to develop students' appreciation of the aspects of equity financing throughout the lifecycle of a company. The nature of fundraising and contracting changes as companies grow from their nascent, early stages to become mature, large enterprises. Understanding the dynamics between various types of investors (angels, VC, PE, public) and entrepreneurs, and also the practicalities of raising VC and PE funds from institutional investors are key for adequate funding of successful growth companies. Moreover, the course contains a comprehensive overview of the metrics of the private equity business. Students will gain insights into the whole lifecycle of Private Equity (fundraising, investor returns, carried interest, etc.). Moreover, typical process steps during a M&A process will be elaborated on (sell-side coordinated processes vs. buy-side process steps). All this will be embedded in a case study allowing students to apply the day-to-day toolset of a private equity professional and work on investment hypotheses. The case study will cover the development of own investment hypotheses, including sustainability endeavours. | | | |

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| Intended Learning Outcomes | To familiarise students with the practicalities of the investment process, esp. from a venture capital and private equity perspective.<br><br>Knowledge:<br>Following completion of the module students will<br>(i) be (more) familiar with how the private equity business model works,<br>(ii) understand the varying needs of equity funding throughout the life cycle,<br>(iii) understand structures of institutional equity investors,<br>(iv) Explain the concepts of venture capital and private equity investments,<br>(v) be able to understand how decarbonisation and returns can go hand-in-hand,<br>(vi) be introduced to the day-to-day work and toolset of an investment professional (e.g., Capital IQ, MS Office applications),<br>(vii) will be familiar with the impact of sustainable finance on the private equity industry.<br><br>Skills:<br>Upon successful completion of the module, students will have the to ability to<br>(i) evaluate private equity investment targets<br>(ii) explain concepts of private equity strategies<br>(iii) compare investment opportunities<br>(iv) solve private equity related issues<br><br>Competence:<br>On successful completion of this module, students can take responsibility to transfer the knowledge and practiced methods in equity financing to real world situations, e.g. they can:<br>(i) Explain the concepts and techniques of equity financing<br>(ii) Identify adequate terms for equity contracting according to the company's stage<br>(iii) Compare and contrast the different types of equity investors<br>(iv) Discuss various financing concepts for LBO candidates |
| Forms of teaching, methods and support | Lectures, case work and team project. |

<table>
<tr><td>Type of Assessment(s) and performance</td><td>
<table>
<tr><th>Type of examination</th><th>Duration or length</th><th>Performance Points</th><th>Due date or date of exam</th></tr>
<tr><td>Team project</td><td>30 hours</td><td>60</td><td>During the module</td></tr>
<tr><td>Written exam</td><td>60 min</td><td>60</td><td>Exam week</td></tr>
</table>
<br>The team project consists of a group work / case study, whereas final results will be presented in front of the full course in a pitch-format. Pitch presentation format is expected to be c. 20 minutes per group with a max. slide package of 10-15 slides (appendix slides allowed).<br><br>Learning goals with the case study are to<br>(i) collaborate in group works and subsequently present results of case studies<br>(ii) apply the necessary private equity toolkit in a practical setup</td></tr>
<tr><td>Recommended Literature</td><td>Lecture slide sets, student's notes selected literature that will be provided during the lecture.</td></tr>
<tr><td>Module Structure</td><td>This course contains both the theoretical foundations of equity finance, and real-life examples of equity investments. Focus of this module is the company and its need for (external) equity funding, and the complex and far reaching opportunities and threats for stakeholders (entrepreneurs, investors, potential investors).</td></tr>
<tr><td>Usability in other Modules/Programmes</td><td>Other modules in Corporate Finance Concentration</td></tr>
<tr><td>Last Approval Date</td><td>2024/07/01</td></tr>
</table>

**Case Studies in Investment Banking**
**[FIN77385]**

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|---|---|---|---|---|---|
| Module Coordinator | | Hirst, Simon; Santiago Ramos, Maria del Amor | | | |
| Programme(s) | | Master of Finance | | | |
| Term | | Semester 3 Q2 | | | |
| Module Duration | | 1 Semester | | | |
| Compulsory/Elective Module | | Concentration Module | | | |
| Credits: | | 6 | | | |
| Frequency | | Annually | | | |
| Language | | English | | | |
| Total Workload | 150 h | Academic Teaching Hours: | 44 | Remaining Workload: | Self-study |
| | | One academic teaching hour corresponds to 45 minutes. | | | |
| | | Self-study includes lesson preparation and follow-up activities, reading assignments, assessment preparation, take-home assignments, etc. | | | |
| Prerequisites | | Corporate Finance, Corporate Valuation | | | |

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| Content | This course is teaches the core concepts and numerical analysis that underpins investment banking, and has a decade-long track record when it comes to materially assisting students wanting to join Wall Street firms and other similar professions. Many students from prior years have gone on to work at major investment banks and private equity firms such as Goldman Sachs, JP Morgan, Morgan Stanley, The Blackstone Group and Evercore, both in London and Frankfurt. The feedback from these students is that the content of this course materially enhanced their ability to hit the ground running when they joined these firms.<br><br>***This course is structured specifically around the 3 key pillars of corporate finance***, so as to prepare students aiming to enter the world of investment banking, private equity, fund management or senior financial management roles within a major corporation. These are:<br><br>**- Equity Capital Markets (IPOs, Spin-Offs and Venture Capital)**<br>**- Debt Capital Markets (Fixed Income)**<br>**- Mergers & Acquisitions**<br><br>This course first teaches the core concepts in academic terms, and then uses a series of Case Sudies, all written and researched by Simon Hirst, to illustrate these concepts in numerical terms. Thirdly, the Professor has written a large number of accompanying Excel models which will be used to analyse with precision each type of transaction in a template format. The cases all involve some of the largest real transactions which have taken place in recent years. No prior detailed knowledge of these products is required, and the Excel models are simple to use, even for those with limited spreadsheet experience.<br><br>After the first day, the class will form into self-selected teams and each team will have private 20-minute group with the Professor in the afternoon session to work on a group presentation which will be presented on the Saturday morning of Class. This is an essential part of the learning process, because it will illustrate the thought process required to solve complex corporate finance issues. |

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| Intended Learning Outcomes | *Knowledge:*<br>On successful completion of this module, students will have an in-depth understanding of modern investment banking, e.g. they can:<br>• Understand the structure of corporate finance transactions which relate to Equity Capital Markets, Fixed Income and M&A in conceptual, numerical and strategic terms<br>• Understand each type of transaction in the context of real Case Studies<br>• Interpret these transactions with the aid of Excel templates<br><br>*Skills:*<br>On successful completion of this module, students will have the proven ability to relate the gained knowledge and studied concept to real world situations, e.g. they can:<br>• Undertand how these transactions work and what they are trying to achieve<br>• Interpret the needs of clients trying to implement these investment banking transactions<br>• Learn how to apply judgement to optimise the structure and strategic objectives for a range of key investment banking transactions<br><br>*Competence:*<br>On successful completion of this module, students will be able to transfer the learned concepts to the investment banking industry and corporate finance departments of large global corporations, e.g. they can:<br>• Partake in the financial advisory process<br>• Relate the knowledge of an IB practitioner to a valued client<br>• Identify new transaction opportunities for clients |
| Forms of teaching, methods and support | **Lectures & Case Study Discussions**<br><br>***Lectures***<br>i) Presentations covering the key concepts of Equity Capital Markets, Venture Capital, Debt Capital Markets and Mergers & Acquisitions<br>ii) Specific Case Studies that show examples of real and large transaction in all of these key product areas<br><br>***Excel***<br>In-Class Excel Excercises where the professor will use his own templates, and guide the class through writing the formulas for themselves<br><br>***Team Mentoring Sessions***<br>Working as a team and using the Professor as their mentor to undertake the Case Study exam |

Type of Assessment(s) and performance

| Type of examination | Duration or length | Performance Points | Due date or date of exam |
|---|---|---|---|
| Multiple choice test (individual) | 30 Minutes | 30 | Exam Week |
| Case studies (group) | 20 minutes | 70 | Saturday morning session |
| Individual Assignment | 45 minutes | 20 | Friday afternoon |

The **Multiple Choice Exam** is an individual in-class quiz on concepts taught in Class during the module and involves 30 questions to be answered in 30 minutes, each with 4 possible answers, only one of which is correct. 1 point per correct answer - no negative marks for wrong answers. This will take place in the Exam Week which follows the course.

The **Case Study Exam** is a group project which will cover a specific Investment Banking Case set by Prof. Hirst. It will require a Powerpoint Presentation and an Excel Model. Time will be set aside during part of each of the last 4 afternoons of Lectures for Case Preparation on a team-by-team basis under the mentorship of the Professor. Teams will be given 20 minutes to present their Case on Saturday morning. Each group will be graded separately, but members of each team will be awarded the same team grade, provided they attend group sessions and make a genuine contribution.

The **Individual Assignment** will take place in-class and will require students to write answers to a series of short essay questions on investment banking concepts covered in class, which may reference some numerical calculations.

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| Recommended Literature | Required:<br>• Cases studies and presentations/excel spreadsheets(will be made available in the course)<br><br>Highly Recommended:<br>• *The course materials and lecture notes are designed to be all-inclusive and have been designed so that they are easily to follow after the lectures have been delivered. Additional reading materials will have only limited benefit because they are often written by academics who have no experience in structuring and executing these transactions, and therefore coule prove to be confusing. It is more important to understand the lecture slides completely, rather than to broaden out into unrleated materials which may not have been prpared on a consistent basis.*<br><br>Recommended (to refresh corporate finance basics):<br>• Damodaran, A., Damodaran on Valuation, John Wiley & Sonso<br>• Berk, J. and De Marzo, P., Corporate Finance, Pearson International<br>• Hillier, D., Ross, S., Westerfield, R., Jaffe, J. and Jordan, B., Corporate Finance, McGraw-Hill, European Edition<br>• Brealey, R., Myers, S. and Allen, F., Corporate Finance, McGraw-Hill International Edition |
| Module Structure | The module structure has three elements:<br>• Presentations which give a detailed understanding of the key concepts relating to M&A/Private Equity, Equity Capital Markets and Debt Capital Markets<br>• Case Studies in each of these topics, using live examples with a detailed analysis of the numbers in each case<br>• Review of financial models which are used to interpret numbers in each type of transaction |
| Usability in other Modules/Programmes | Other modules in Corporate Finance Concentration; M&A and Advanced M&A electives |
| Last Approval Date | 2024/05/10 |

**Renewable Energy Finance [FIN70955]**

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|---|---|---|---|---|---|
| Module Coordinator | | Moslener, Ulf | | | |
| Programme(s) | | Master of Finance | | | |
| Term | | Semester 3 Q2 | | | |
| Module Duration | | 1 Semester | | | |
| Compulsory/Elective Module | | Elective Module | | | |
| Credits: | | 6 | | | |
| Frequency | | Annually | | | |
| Language | | English | | | |
| Total Workload | 150 h | Academic Teaching Hours: | 44 | Remaining Workload: | Self-study |
| | | One academic teaching hour corresponds to 45 minutes. | | | |
| | | Self-study includes lesson preparation and follow-up activities, reading assignments, assessment preparation, take-home assignments, etc. | | | |
| Prerequisites | | Previous modules; basic economics; basic finance | | | |
| Content | | This module enables you to put a project idea / technology into context: environmental, technological, regulatory. Based on this, you will learn how to use standard finance tools - notably project finance - to make considered assessments and suggestions about financing approaches that reflect the true specificity of the underlying issues related to renewable energy infrastructure investment. Discussions in class will touch upon a variety or aspects around the energy transition. | | | |

<table>
<tr><td>Intended Learning Outcomes</td><td>Knowledge:<br>Because students acquire a rich factual knowledge of the specifics of renewable energy markets, they are, e.g. able to<br>• describe the underlying technologies<br>• explain the market mechanisms and financing requirements and<br>• discuss the politics including the portfolio of investment support instruments<br>Skills:<br>Students will be able to evaluate the immediate consequences of the specifics of the respective markets, i.e. they are able to<br>• analyse market designs and support mechanisms<br>• analyse the basics of a project finance transaction<br><br>Competence:<br>Students will have the ability to make comprehensive, multi-disciplinary assessments of choices in the development and implementation of renewable energy in power production, i. e. they are able to<br>• prepare project investment decisions<br>• reflect the impact of policy instruments on such a decision<br>• communicate complex policy and financing issues with a view to support decision making</td></tr>
<tr><td>Forms of teaching, methods and support</td><td>Interactive lectures. Support through E-learning elements. Cases and in-class-discussion.</td></tr>
<tr><td>Type of Assessment(s) and performance</td><td><table>
<tr><td>Type of examination</td><td>Duration or length</td><td>Performance Points</td><td>Due date or date of exam</td></tr>
<tr><td>Writtenl exam</td><td>60 min</td><td>60</td><td>exam week</td></tr>
<tr><td>Presentation</td><td>10-15 min + Discussion</td><td>60</td><td>during the course</td></tr>
</table><br>The exam will be a closed book exam.<br><br>The presentations will be in-class presentations in groups (including commented slidessystematically cover “hot topics” in the field. These presentations and the discussion in particular serves the learning goal:<br>• Students will have the ability to make comprehensive, multi-disciplinary assessments of choices in the development and implementation of renewable energy in power production, i. e. they are able to<br>- prepare project investment decisions<br>- reflect the impact of policy instruments on such a decision<br>- communicate complex policy and financing issues with a view to support decision making</td></tr>
<tr><td>Recommended Literature</td><td>Specialised articles and Reports - to the extent needed.</td></tr>
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| Module Structure | Block I / Market Environment:<br>• Regulatory Environment<br>• Climate Change & Climate Policy<br>• Energy Economics<br>• Renewable Energy: Technologies & Markets<br><br>Block II / Financing:<br>• Financing Projects<br>• Financing Instruments (Public and Private)<br>• Cases (e.g. Hydro/Wind)<br>• Student Cases/Presentations (e.g. relevant real world projects, innovative financing schemes, cash flow …)<br>• Latest trends in international climate finance |
| Usability in other Modules/Programmes | Alternative Investments, Mergers and Acquisitions, Entrepreneurship, Master`s Thesis |
| Last Approval Date | 2024/05/16 |

**Financing Sustainability and Transformation**
**[FIN72658]**

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|---|---|---|---|---|---|
| Module Coordinator | | Moslener, Ulf | | | |
| Programme(s) | | Master of Finance | | | |
| Term | | Semester 3 Q1 | | | |
| Module Duration | | 1 Semester | | | |
| Compulsory/Elective Module | | Elective Module | | | |
| Credits: | | 6 | | | |
| Frequency | | Annually | | | |
| Language | | English | | | |
| Total Workload | 150 h | Academic Teaching Hours: | 44 | Remaining Workload: | Self-study |
| | | One academic teaching hour corresponds to 45 minutes. | | | |
| | | Self-study includes lesson preparation and follow-up activities, reading assignments, assessment preparation, take-home assignments, etc. | | | |
| Prerequisites | | Basic knowledge in economics, finance. | | | |
| Content | | This module explores the intersection of finance and sustainability, focusing on the foundational concepts underlying sustainable finance, central elements of sustainable finance and tools for sustainable financing. This will enable you to discuss the basics of environmental economics and the philosophy of sustainability in the context of finance. You will learn, which elements constitute sustainable finance such as climate scenarios, sustainability standards and metrics, and sustainable financial products. Finally, you will get a basic understanding of practical applications of sustainable finance such as portfolio construction with ESG tilting, risk management strategies for dealing with transitional and physical risks, and the use of machine learning in sustainability. | | | |

<table>
<tr><td>Intended Learning Outcomes</td><td>Upon completion of this module, you will:<br><br>Knowledge<br>Apply the fundamental principles of environmental economics and the philosophy of sustainability.<br>Ba able to use your knowledge of climate science, including the implications of global warming, biodiversity loss, and ecological limits in the context of finance.<br>Acquire familiarity with various sustainability-related financial scenarios, carbon accounting standards, and sustainability metrics.<br>Skills<br>Analyze and interpret complex data and reports related to climate science and sustainable finance.<br>Apply environmental economic theories to the development and assessment of sustainability policies and financial instruments.<br>Construct and manage sustainable investment portfolios using modern financial tools and strategies such as ESG tilting and scenario analysis.<br>Competences<br>Critically assess the role of finance in promoting sustainability and address the dual challenges of managing financial risks and supporting ecological goals.<br>Employ state-of-the-art techniques such as scenario analysis for analyzing sustainability aspects.<br>Develop a holistic understanding of sustainable finance products and their regulatory frameworks, preparing for leadership roles in the finance sector.</td></tr>
<tr><td>Forms of teaching, methods and support</td><td>Interactive lectures. Support through E-learning elements. Cases and in-class-discussion.</td></tr>
<tr><td>Type of Assessment(s) and performance</td><td>
<table>
<tr><td>Type of examination</td><td>Duration or length</td><td>Performance Points</td><td>Due date or date of exam</td></tr>
<tr><td>Written Exam</td><td>60</td><td>60</td><td>Exam Week</td></tr>
<tr><td>Presentation</td><td>ca. 15 min plus discussion</td><td>60</td><td>during the course</td></tr>
</table>
<br>Within the group presentation the most relevant learning goals out of those above will be:<br>• Apply the fundamental principles of environmental economics and the philosophy of sustainability.<br>• Be able to use your knowledge of climate science, including the implications of global warming, biodiversity loss, and ecological limits in the context of finance.<br>• Employ state-of-the-art techniques such as scenario analysis for analyzing sustainability aspects.</td></tr>
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| Recommended Literature | Further literature can be helpful in preparation for the course:<br><br>Roncalli, T. (2022). Handbook of Sustainable Finance. Available at SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4277875<br><br>IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. In Press. https://www.ipcc.ch/report/ar6/wg1/chapter/summary-for-policymakers/ |
| Module Structure | Part I: The WHY of Sustainable Finance<br>• Philosophy of Sustainability<br>• Science of Climate Change & Biodiversity<br>• Introduction to Environmental Economics<br>• The Role of Finance in the Transformation<br><br>Part II: The WHAT of Sustainable Finance<br>• (Climate) Scenarios<br>• Carbon & Environmental Accounting<br>• Sustainability Metrics<br>• Sustainability Products<br><br>Part III: The HOW of Sustainable Finance<br>• Sustainable Portfolio Construction<br>• ESG and Risk Management<br>• Machine Learning in Sustainable Finance<br><br>All parts will cover relevant concepts and include discussions on ongoing developments. |
| Usability in other Modules/Programmes | Linked to other modules of the MSc Finance Concentration Sustainable Finance, Master`s ThesisOther electives for which this module could be helpful background information:- Insights into Manufacturing Industry- (Advanced) Mergers and Acquisition |
| Last Approval Date | 2024/05/14 |

**Managing ESG in Investing [MGT70487]**

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|---|---|---|---|---|---|
| Module Coordinator | | Newton, Andrew William | | | |
| Programme(s) | | Master of Finance | | | |
| Term | | Semester 3 Q1 | | | |
| Module Duration | | 1 Semester | | | |
| Compulsory/Elective Module | | Elective Module | | | |
| Credits: | | 6 | | | |
| Frequency | | Annually | | | |
| Language | | English | | | |
| Total Workload | 150 h | Academic Teaching Hours: | 44 | Remaining Workload: | Self-study |
| | | One academic teaching hour corresponds to 45 minutes. | | | |
| | | Self-study includes lesson preparation and follow-up activities, reading assignments, assessment preparation, take-home assignments, etc. | | | |
| Prerequisites | | Principles or Foundations of Finance. Basic ethics. Bachelor's Degree in business | | | |

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| Content | This course is designed to complement your quantitative skills in financial analysis and portfolio management with the conceptual and analytical insights needed to compete for jobs in what the Financial Times has called the ESG 'war for talent' – the current high demand for those with the knowledge and skills necessary to integrate environmental, social, and governance (ESG) factors into investment decision-making.<br>Coverage includes:<br>• Three motives for ESG investing: people, power, and profit<br>• Stakeholder analysis for investors<br>• Understanding transmission mechanisms from values to value<br>• The central role of reputation and company culture in linking values to value<br>• The 'E' and the 'S': seeing business through the lenses of human rights, justice and sustainability.<br>• The 'G': corporate governance paradigms, risks and opportunities<br>• ESG data challenges, and reporting standards related to ESG analysis<br>• Active ownership strategies: engagement, coalition-building, voting, resolutions, and exit<br>• Fixed income ESG<br>• Climate change and transition finance as a cross-cutting issue<br>Some work each day is conducted in teams of your own choice. Among other tasks, you will get time to work on your deliverable for the group presentation assessment in the final session. I will be available to spend time with each team during these periods to talk through issues you have encountered in your presentation. |

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| Intended Learning Outcomes | Knowledge:<br>Upon successful completion of this module, students will know and understand the rationales for, core concepts of, and approaches to the integration of environmental, social, and governance factors into investment decision-making e.g. they will be able to:<br>• Identify and explain the three main drivers (people, power, profit) for integrating ESG insights into investment (and therefore corporate) decision-making;<br>• Explain the ethical and political norms against which ESG performance is benchmarked, including human rights, justice, and sustainability;<br>• Identify a firm's stakeholders, and explain the significance of the different bases on which stakeholders are connected to an enterprise for value creation and risk;<br>• Understand and explain climate change as a cross-cutting issue;<br>• Explain the various transmission mechanisms by which values performance affects firm value and risk both for equity and fixed income investors, including the mediating role of reputational resources such as trust and legitimacy;<br>• Locate relevant, comparable, and robust data on firm ESG performance;<br>• Identify the range of active ownership strategies open to investors wishing to influence portfolio companies on their ESG performance, and explain the success factors required for each.<br>Skills:<br>Upon successful completion of this module, students will be able to (complete the following tasks/solve the following problems):<br>• Analyse a firm's stakeholders, and the different capacities in which each is connected to the enterprise;<br>• Identify performance benchmarks for existing ESG concerns such as climate change, diversity, and global inequality in terms of specific ethical, political, and industry norms, and identify emerging ESG concerns in the same terms;<br>• Research data on a firm's ESG performance and analyse that performance against norms and peers;<br>• Analyse the available tactical choices available for the active ownership of an investment and identify those most likely to succeed.<br>Competence:<br>Upon successful completion of this module, students will have learned about how to integrate environmental, social and governance concerns into investment strategy, selection, and active ownership. Specifically, they will be ready to:<br>• Undertake robust research and analysis of a firm's ESG performance;<br>• Craft compelling arguments applying ESG performance insights for input to portfolio strategy formulation and investment selection processes;<br>• Devise and execute realistic strategies for the ongoing active ownership of portfolio assets in line with client ESG objectives. |

<table>
<tr><td>Forms of teaching, methods and support</td><td>Pre-course readings, interactive lectures, group work, case studies, classroom exercises, student presentations.</td></tr>
<tr><td>Type of Assessment(s) and performance</td><td>
<table>
<tr><th>Type of examination</th><th>Duration or length</th><th>Performance Points</th><th>Due date or date of exam</th></tr>
<tr><td>Oral participation</td><td>Throughout the course</td><td>20</td><td>Throughout the course</td></tr>
<tr><td>Group presentation</td><td>20 minutes per group</td><td>70</td><td>Last session Saturday morning</td></tr>
<tr><td>Written examination</td><td>30 minutes</td><td>30</td><td>Exam week</td></tr>
</table>
<ul>
<li>The assessments have the potential for a maximum 120 points in total. Full instructions and grading rubrics are set out in the Assessments Pack.</li>
<li>The group presentation assessment requires self-selected or (failing that) assigned groups of students to evaluate a given company stock and/or bond from an ESG perspective, including articulation of an active ownership strategy. The 20-minute presentation takes place on the last afternoon of class. (70 points). To cultivate professionalism in team work, and to encourage the full involvement of all team members, the grades of individual team members are adjusted with the aid of a peer evaluation tool.</li>
<li>The written examination is an individual, computer-based, multiple-choice test taken during exam week. The test contains 30 questions and lasts 30 minutes. (30 points)</li>
</ul>
The group presentation and written examination assessments are integrative: they concern the whole content of the course. The oral participation grade only concerns the material being covered in that particular class.<br><br>Students should review the Assessments information on Canvas for detailed instructions and grading rubrics.
</td></tr>
<tr><td>Recommended Literature</td><td>The core text is:<br>UNPRI. 2023. ESG integration in listed equity: A technical guide. URL: https://www.unpri.org/listed-equity/esg-integration-in-listed-equity-a-technical-guide/11273.article (accessed May 18, 2024).An additional recommended text is:<br>Schoenmaker, D., and Schramade, W. Principles of Sustainable Finance. Oxford: Oxford University Press. 2019.</td></tr>
<tr><td>Module Structure</td><td>Lectures take place in one concentrated block-week</td></tr>
<tr><td>Usability in other Modules/Programmes</td><td>Master thesis</td></tr>
<tr><td>Last Approval Date</td><td>2024/05/27</td></tr>
</table>