

Study Schedule

Economics and Finance, M.Sc.

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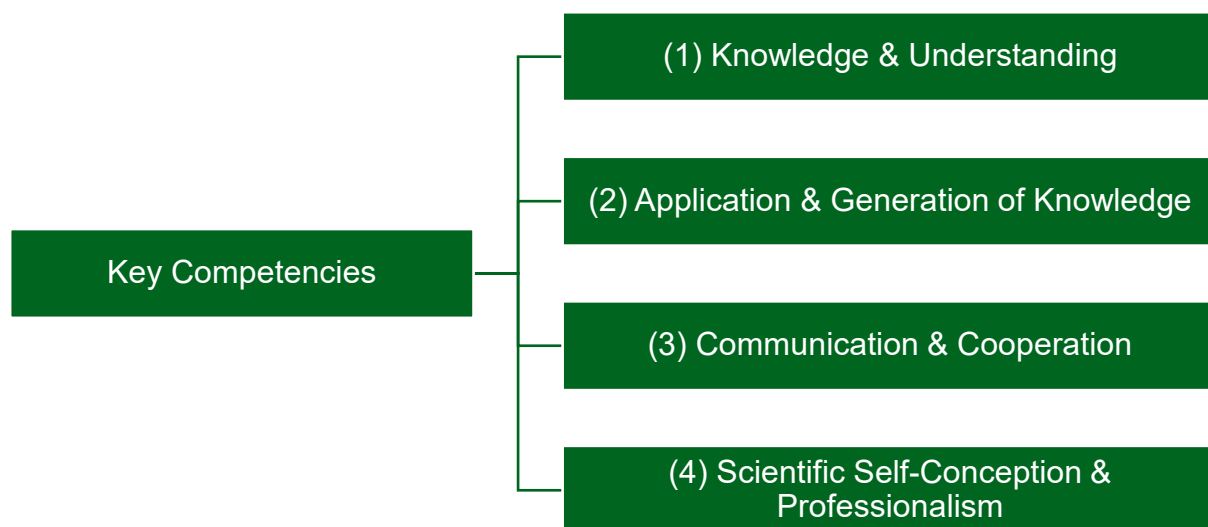
1. Information about Study Programme

1.1 Profile of Study Programme

Place of Study	Campus Kleve
Start Date	Winter Term & Summer Term
Language	English
Study Model	Full-Time Studies
Duration of Study	3 Semesters
Amount of Credits	90 ECTS
Degree Awarded	Master of Science, M.Sc.
Examination Regulation and Further Information	https://www.hochschule-rhein-waal.de/en/faculties/society-and-economics/degree-programmes/economics-and-finance-msc

1.2 Key Competencies

The study programme *Economics and Finance* teaches the following competencies on Master-level: (1) knowledge and understanding, (2) use, application and knowledge production, (3) communication and cooperation, (4) academic conduct/ professionalism. These competencies are outlined in the *German Standards for Higher Education* (Resulting from the Ministry of Education Conference on February 16, 2017; online available: https://www.kmk.org/fileadmin/Dateien/veroeffentlichungen_beschluesse/2017/2017_02_16-Qualifikationsrahmen.pdf) and are described in more detail within the course descriptions included in this study schedule.



2. Study Programme

2.1 Recommended Study Plan

No.	Module	CH	L	S	E	Pra	Pro	EX	CP	Sem.1	Sem.2	Sem.3	WT/ST
M-EF_01	Managerial Economics and Industrial Organisation	4	2		2			P	5	5			
M-EF_02	Advanced Public Finance	4	2		2			P	5	5			
M-EF_03	Banking and Risk Theory	4	2		2			P	5	5			
M-EF_04	Econometrics	4	2		2			P	5	5		X	
M-EF_05	Quantitative Methods	4	1		1	2		P	5	5		X	
M-EF_06	International Economics & Sustainable Development	4	2	2				P	5	5			
M-EF_07	Applied Corporate Finance	4	2		2			P	5	5			
M-EF_08	Research in Economics and Finance	6		2			4	P	10	10		X	
M-EF_09	Modelling Financial Markets	4	1		1	2		P	5	5			
M-EF_10	Elective Subjects	8	8					P	10	5	5		
M-EF_10.01	Financial Market Regulation	4	4					P	5	5			
M-EF_10.02	Applied Game Theory and Auctions	4	4					P	5	5			
M-EF_10.03	Incentive Based Regulatory Economics	4	4					P	5	5			
M-EF_10.04	Institutions and Organisational Economics	4	4					P	5	5			
M-EF_10.05	Economic Analysis of Accounting	4	4					P	5	5			
M-EF_10.06	Tax Impact on Financial Decision Making	4	4					P	5	5			
M-EF_10.07	Derivatives, Financial and Real Options	4	4					P	5	5			
M-EF_10.08	Innovation Management & Investment in Emerging Technologies	4	4					P	5	5			
M-EF_10.09	Behavioural Economics and Finance	4	4					P	5	5			
M-EF_10.99	Language Course Business English or German	4	4					P	5	5	5		
M-EF_11	Current Topics in Economics and Finance	4		2		1	1	P	5		5	X	
M-EF_12	Master Thesis							P	22		22		
M-EF_13	Colloquium							P	3		3		
Gesamt		50	22	6	12	5	5		90	30	30	30	

Abbreviations: CH = Contact Hours per Week; L = Lecture; S = Seminar; E = Exercise; Pra = Practical Training; Pro = Project; EX = Type of Examination; E = Examination; C = Certificate; CP = Credit Points; Sem = Semester.

2.2 Descriptions of Modules

Module M-EF_01: Managerial Economics and Industrial Organisation

Classification	Study Semester	Offer	Equivalent	Language	Responsible Professor
Required Module	1	Winter Term	-	English	Prof. Dr. Jörn Sickmann

Size of Group	Workload	Contact Hours	Self Study	Credit Points
up to 50	150 h	60 h	90 h	5

Formal Prerequisites	Recommended Prerequisites	Further Information
-	Bachelor Courses in Microeconomics, Business Mathematics and Game Theory	-

Learning Outcomes*
<p>Upon completion of this module, students are expected to be able to:</p> <ul style="list-style-type: none"> Understand the linkages between several economic theories and the managerial decision-making process to make strategic decisions under risk and uncertainty.^{1,2} Use microeconomic concepts and tools in the process of problem solving and decision-making inside and outside the firm.¹ Demonstrate knowledge and understanding of advanced concepts of industrial organisation, including the relationship between the structure of industrial and commercial markets and the conduct and performance of firms within these markets.¹ Apply these concepts to analyse structure, conduct and performance of real world industries; evaluate the results critically; and recognize limitations of the different theoretical approaches.² Transfer theoretical knowledge to practical situations in managerial economics and industrial organisation.² <p><small>* 1 = Knowledge & Understanding, 2 = Application & Generation of Knowledge, 3 = Communication & Cooperation, 4 = Scientific Self-Conception & Professionalism</small></p>

Content
<p>The course <i>M-EF_01a: Managerial Economics</i> is concerned with the application of economic tools and concepts to managerial and administrative decision-making. The course discusses and applies microeconomic principles and tools to managerial decisions. Emphasis will be placed on decision making and asymmetric information within the firm as well as on strategic decisions vis-à-vis players outside the firm. The course includes these main topics:</p> <ul style="list-style-type: none"> Economic decision making Decision making under risk and uncertainty Signalling under information asymmetry Price bundling and switching costs Production decisions Strategic investments Internal pricing and incentives Efficiency and productivity analysis. <p>The focus of the course <i>M-EF_01b: Advanced Industrial Organisation</i>, on the other hand, lies on the analysis of competitive processes of industries which differ from the idealized textbook forms of "pure monopoly" and "perfect competition". This includes a very wide range of both "traditional" (e.g. energy, transport, telecoms) and "modern" (e.g. social networks such as Facebook) industries. The following topics are covered:</p> <ul style="list-style-type: none"> Structure, Conduct, and Performance Paradigm Analysis of market structure (concentration measures, market entry barriers, Lerner index etc.) Non-cooperative behaviour (e.g. Cournot, Bertrand and Stackelberg model) Cooperative strategies (collusion, cartelization, mergers) Pricing strategies, price discrimination Two-sided markets Competition policy and regulation Innovations (patents and patent races)

Bibliography
<ul style="list-style-type: none"> • Dobbs, I. (2000) <i>Managerial Economics</i>, Oxford: Oxford University Press. • Allen, W. B., Weigelt, K., Doherty, N., and Mansfield, E. (2009) <i>Managerial Economics: Theory, Applications, and Cases</i>, 7th ed., New York: W. W. Norton & Company. • Milgrom, P. and Roberts, J. (1992) <i>Economics, Organization and Management</i>, Englewood Cliffs, NJ: Prentice Hall. • Viscusi, W. K., Vernon, J. M., and Harrington Jr., J.E. (2005) <i>Economics of Regulation and Antitrust</i>, 4th ed., Cambridge, MA: MIT Press. • Carlton, D., and Perloff, J. (2005/ 2015) <i>Modern Industrial Organisation</i>, 4th / 5th ed., International / Global Edition, Boston: Addison-Wesley. • Waldman, D. E., and Jensen, E. J. (2013 / 2016) <i>Industrial Organisation: Theory and Practice</i>, 4th / 5th ed., Boston: Addison-Wesley. • Lipczynski, J., Wilson, J., Goddard, J. (2013/ 2017) <i>Industrial Organisation: Competition, Strategy, Policy</i>, 4th / 5th ed., Harlow: Financial Times Prentice Hall. • Gibbons, R., and Roberts, J. (2012) <i>The Handbook of Organizational Economics</i>, 1st ed., Princeton, NY: Princeton University Press. • Belleflamme, P., and Peitz, M. (2010) <i>Industrial Organisation: Markets and Strategies</i>, Cambridge: Cambridge University Press. • Cabral, L. (2000) <i>Introduction to Industrial Organisation</i>, 1st ed., Massachusetts and London: MIT Press. • Church, J. R., and Ware, R. (2000) <i>Industrial Organisation – A Strategic Approach</i>, 1st ed., Boston: McGraw-Hill. • Shy, O. (1996) <i>Industrial Organization: Theory and Applications</i>, Cambridge, Massachusetts and London, England: MIT Press. • Further reading will be recommended as the course progresses.

Course(s)	Contact Hours	Teacher(s)
M-EF_01a: Managerial Economics (Lecture + Exercise)	2	Prof. Dr. Hasan Alkas
M-EF_01b: Advanced Industrial Organisation (Lecture + Exercise)	2	Prof. Dr. Jörn Sickmann

Requirements for the Awarding of Credit Points	Possible Examination	Significance of Mark
Examination	Written Exam	5%

Module M-EF_02: Advanced Public Finance

Classification	Study Semester	Offer	Equivalent	Language	Responsible Professor
Required Module	1	Winter Term	-	English	Prof. Dr. habil. Gregor van der Beek

Size of Group	Workload	Contact Hours	Self Study	Credit Points
up to 50	150 h	60 h	90 h	5

Formal Prerequisites	Recommended Prerequisites	Further Information
-	Bachelor Courses in Microeconomics	-

Learning Outcomes*
<p>Upon successful completion of the module, the students will:</p> <ul style="list-style-type: none"> Have an overview of public finances in industrialized and developing countries and be able to analyse and interpret public finances in an international setting.^{1,2} Be equipped to examine government expenditure and public revenue policies and to estimate their incentive effects from a normative and positive perspective.^{1,2} <p><small>* 1 = Knowledge & Understanding, 2 = Application & Generation of Knowledge, 3 = Communication & Cooperation, 4 = Scientific Self-Conception & Professionalism</small></p>

Content
<ul style="list-style-type: none"> The positive and normative economic approach to government expenditure and to public revenue, especially to taxes and public debt. Discussion of the role, rationale, objectives and consequences of fiscal government intervention in the market economy.

Bibliography
<ul style="list-style-type: none"> Gruber, J. (2015) <i>Public Finance and Public Policy</i>, 4th ed., New York: Worth Publishers. Rosen, H.S. and Gayer, T. (2010) <i>Public Finance</i>, 10th international ed., New York: McGraw Hill.

Course(s)	Contact Hours	Teacher(s)
M-EF_02: Advanced Public Finance (Lecture + Exercise)	4	Prof. Dr. habil. Gregor van der Beek

Requirements for the Awarding of Credit Points	Possible Examination	Significance of Mark
Examination	Written Exam, Term Paper, or any Combination	5%

Module M-EF_03: Banking and Risk Theory

Classification	Study Semester	Offer	Equivalent	Language	Responsible Professor
Required Module	1	Winter Term	-	English	Prof. Dr. Ralf Bauer

Size of Group	Workload	Contact Hours	Self Study	Credit Points
up to 50	150 h	60 h	90 h	5

Formal Prerequisites	Recommended Prerequisites	Further Information
-	Bachelor Courses in Corporate Finance, Statistics/Probability Theory	-

Learning Outcomes*
<p>Students will gain a general understanding of the instruments, valuation techniques and performance management of financial markets.¹ After having successfully passed the course, students will comprehend the tasks, the asset selection process and the fund manager's criteria for decision-making.¹ Students will understand in detail the theoretical concept of risk diversification for selected financial instruments using derivatives.¹ Students will also gain an overview of the banking sector and its two main product classes (deposits and loans) and their management.¹ They will understand the necessity of risk management and bank regulation and their importance for the stability of the financial system.¹ Their gained knowledge will prepare the students for later employment in the financial sector or the area of asset and fund management.²</p> <p><small>* 1 = Knowledge & Understanding, 2 = Application & Generation of Knowledge, 3 = Communication & Cooperation, 4 = Scientific Self-Conception & Professionalism</small></p>

Content
<p>The Banking lecture includes the following topics:</p> <ul style="list-style-type: none"> ▪ Financial sector overview ▪ Theoretical background of banks ▪ Deposits ▪ Loans ▪ Risk management ▪ Bank regulation <p>The Portfolio lecture includes the following topics:</p> <ul style="list-style-type: none"> ▪ Risk and return ▪ Asset classes ▪ No-Arbitrage concept ▪ Performance Measurement and Management ▪ Markowitz separation ▪ Single-Index Model ▪ CAPM

Bibliography
<ul style="list-style-type: none"> ▪ Bodie, Z., Kane, A. & Marcus, A. (2015). <i>Investments</i>. New York: McGraw Hill. ▪ Bodie, Z., Kane, A. & Marcus, A. (2013). <i>Essentials of investments</i>. New York: McGraw Hill. ▪ Sharpe, W., Alexander, G. & Bailey, J. (1999). <i>Investments</i>. New Jersey: Prentice Hall.

Course(s)	Contact Hours	Teacher(s)
M-EF_03: Banking and Risk Theory (Lecture + Exercise)	4	Prof. Dr. Ralf Bauer

Requirements for the Awarding of Credit Points	Possible Examination	Significance of Mark
Examination	Written Exam	5%

Module M-EF_04: Econometrics

Classification	Study Semester	Offer	Equivalent	Language	Responsible Professor
Required Module	1	Summer and Winter Term	-	English	Prof. Dr. Gernot Müller

Size of Group	Workload	Contact Hours	Self Study	Credit Points
up to 25	150 h	60 h	90 h	5

Formal Prerequisites	Recommended Prerequisites	Further Information
-	Bachelor Courses in Descriptive and Inferential Statistics, Algebra and Analysis	-

Learning Outcomes*
<p>Upon successful completion of the course, students will know, understand, analyse, select and use econometric principles, concepts and methods commonly employed in quantitative economics and finance.¹ They will be able to assess the strengths and shortcomings of the tools, and to apply them to real-life problems selected from economics, business and finance.²</p> <p><small>* 1 = Knowledge & Understanding, 2 = Application & Generation of Knowledge, 3 = Communication & Cooperation, 4 = Scientific Self-Conception & Professionalism</small></p>

Content
<p>Basic and intermediate econometric concepts with a main focus on tools and techniques relevant for doing research in the fields of microeconomics, macroeconomics and finance, including the following:</p> <ul style="list-style-type: none"> ▪ Simple and multiple univariate regression ▪ Multivariate regression approaches ▪ Time series modelling and forecasting ▪ Concepts of volatility and correlation ▪ Switching models ▪ Panel data analysis ▪ Simulations

Bibliography
<ul style="list-style-type: none"> ▪ Brooks, C. (2014) <i>Introductory Econometrics for Finance</i>, 3rd ed., Cambridge: Cambridge University Press. ▪ Greene, W.H. (2017) <i>Econometric Analysis</i>, 8th international ed., Boston – London: Pearson.

Course(s)	Contact Hours	Teacher(s)
M-EF_04: Econometrics (Lecture + Exercise)	4	Prof. Dr. Gernot Müller

Requirements for the Awarding of Credit Points	Possible Examination	Significance of Mark
Examination	Written Exam	5%

Module M-EF_05: Quantitative Methods

Classification	Study Semester	Offer	Equivalent	Language	Responsible Professor
Required Module	1	Summer and Winter Term	-	English	Prof. Dr. Ralf Bauer

Size of Group	Workload	Contact Hours	Self Study	Credit Points
up to 25	150 h	60 h	90 h	5

Formal Prerequisites	Recommended Prerequisites	Further Information
-	Bachelor Courses in Corporate Finance, Statistics/Probability Theory	-

Learning Outcomes*
<p>Upon completion of this module, students are expected to:</p> <ul style="list-style-type: none"> Have enhanced knowledge of probability theory.¹ Apply theoretical knowledge to the valuation of financial instruments.^{1,2} Value important financial instruments presented in class based on the duplication/hedging method.² Be prepared for later employment in the financial sector.⁴ Be able to open a dataset in R, perform basic data preparation, and perform a basic statistical test in R.^{1,2} Be able to design and execute a basic economic experiment using experimental software (e.g. zTree)^{1,2} <p><small>* 1 = Knowledge & Understanding, 2 = Application & Generation of Knowledge, 3 = Communication & Cooperation, 4 = Scientific Self-Conception & Professionalism</small></p>

Content
<p>In the course <i>M-EF_05a: Financial Mathematics</i>, the following topics will be included:</p> <ul style="list-style-type: none"> Basics of probability theory Standard normal distribution Hedging and duplication method/ "No-arbitrage valuation" Bond valuation Loan calculation and risk premium calculation Valuation of further financial instruments <p>The course <i>M-EF_05b: Experimental and Statistics Software</i> focuses on the practical skills required to execute an economics experiment and analyse its results. The students will learn to operate commonly utilised experimental software (e.g. zTree) and will be able to use the basic functionality of a commonly used statistics software programme (e.g. R).</p>

Bibliography
<ul style="list-style-type: none"> Bodie, Z., Kane, A. & Marcus, A. (2015). <i>Investments</i>. New York: McGraw Hill. Hull, J. (2017). <i>Futures, Options, and other Derivatives</i>. Harlow: Pearson.

Course(s)	Contact Hours	Teacher(s)
M-EF_05a: Financial Mathematics (Lecture + Exercise)	2	Prof. Dr. Ralf Bauer
M-EF_05b: Experimental and Statistics Software (Lecture + Practical Training)	2	Prof. Dr. Jörn Sickmann

Requirements for the Awarding of Credit Points	Possible Examination	Significance of Mark
Examination	Written Exam, Assignment, or any Combination	5%

Module M-EF_06: International Economics and Sustainable Development

Classification	Study Semester	Offer	Equivalent	Language	Responsible Professor
Required Module	2	Summer Term	-	English	Prof. Dr. Corinne Lohre

Size of Group	Workload	Contact Hours	Self Study	Credit Points
up to 50	150 h	60 h	90 h	5

Formal Prerequisites	Recommended Prerequisites	Further Information
-	Microeconomics, Macroeconomics	-

Learning Outcomes*
<p>Upon successful completion of the course, the students shall be able to analyse the effects of global economic integration with respect to economic efficiency, overall wealth and economic development.¹ The students shall have a better understanding of issues of economic globalisation and shall be able to critically discuss them (specifically with respect to sustainable development).^{1,2} Furthermore, students shall have improved their capacity to work efficiently in teams and to prepare, present and discuss current topics in international economics in a convincing and academic manner.^{3,4}</p> <p><small>* 1 = Knowledge & Understanding, 2 = Application & Generation of Knowledge, 3 = Communication & Cooperation, 4 = Scientific Self-Conception & Professionalism</small></p>

Content
<ul style="list-style-type: none"> • Analysis of motivations for international trade and consequences of international trade for national economies (trade theory) as well as analysis of the effects of politically determined instruments of trade (trade policy). • Discussion of the motivations for and the consequences of international trade agreements. • Exchange rates, the foreign exchange market, determinants and policy implication of different exchange rate regimes. • Aspects of economic globalization, consequences for sustainable development and potential policy responses.

Bibliography
<ul style="list-style-type: none"> • Krugman, P. R., Obstfeld, M., and Melitz, M. J. (2018) <i>International Economics: Theory and Policy</i>, 11th edition, Pearson. • Copeland, L. C. (2014) <i>Exchange Rates and International Finance</i>, 6th edition, Pearson. • Rogers, P. P., Jalal, K. F., and Boyd, J. A. (2008) <i>An Introduction to Sustainable Development</i>, London: Earthscan.

Course(s)	Contact Hours	Teacher(s)
M-EF_06a: International Economics (Lecture)	2	Prof. Dr. Corinne Lohre
M-EF_06b: Sustainable Development (Seminar)	2	Prof. Dr. Corinne Lohre

Requirements for the Awarding of Credit Points	Possible Examination	Significance of Mark
Examination	Written Exam, Term Paper, or any Combination	5%

Module M-EF_07: Applied Corporate Finance

Classification	Study Semester	Offer	Equivalent	Language	Responsible Professor
Required Module	2	Summer Term	-	English	Prof. Dr. Ute Merbecks

Size of Group	Workload	Contact Hours	Self Study	Credit Points
up to 50	150 h	60 h	90 h	5

Formal Prerequisites	Recommended Prerequisites	Further Information
-	-	-

Learning Outcomes*
<p>Upon successful completion of the course, students will have a profound understanding of financial metrics and will be able to distinguish between different types of financing (internal financing, equity financing and debt financing).¹ Furthermore, they will be able to illustrate the theoretical valuation techniques used for decision-making under certainty and uncertainty. Accordingly, students will gain access to the main types of financial risks and risk management tools.¹ They will be able to model real financial instruments by their cash-flows and risks for rational decision-making.²</p> <p><small>* 1 = Knowledge & Understanding, 2 = Application & Generation of Knowledge, 3 = Communication & Cooperation, 4 = Scientific Self-Conception & Professionalism</small></p>

Content
<ul style="list-style-type: none"> The metrics of corporate finance and the objectives of financial management are defined. A managerial cash-flow statement is presented to the students and a taxonomy of performance measures is critically evaluated. Basic valuation concepts and tools for decision-making in financial management. After providing a critical overview, details on present value models for the analysis of financial instruments in an uncertain setting are introduced and discussed. Basic tools of internal financing: financial management is responsible for influencing the cash-flows for operating the business and paying taxes in different ways. Different approaches to affecting inflows and outflows will be discussed (e.g. factoring). Design of equity contracts and Classification of equity financing in public and private spheres. Different types of shares and basics in capital increase are introduced to the students. Pay-out decision of stock corporations are assessed. Students will apply the present value approach to equity asset valuation. Design of debt contracts and Classification of debt financing by using different criteria. Students will apply the valuation techniques introduced to bond valuation.

Bibliography
<ul style="list-style-type: none"> Berk, J., DeMarzo, P. & Harford, J. (2016). <i>Fundamentals of Corporate Finance</i>. New Jersey: Prentice Hall. Brealy, R. & Myers, S. (2016). <i>Principles of Corporate Finance</i>. New York: McGraw-Hill. Kaiser, D. (2011). <i>Treasury Management</i>. Wiesbaden: Gabler Verlag. Starobom, H. (2013). <i>Corporate Finance</i>. Wiesbaden: Gabler Verlag.

Course(s)	Contact Hours	Teacher(s)
M-EF_07: Applied Corporate Finance (Lecture + Exercise)	4	Professor Dr. Ute Merbecks

Requirements for the Awarding of Credit Points	Possible Examination	Significance of Mark
Examination	Written Exam, Oral Exam, or any Combination	5%

Module M-EF_08: Research in Economics and Finance

Classification	Study Semester	Offer	Equivalent	Language	Responsible Professor
Required Module	2	Summer and Winter Term	-	English	Prof. Dr. Jörn Sickmann

Size of Group	Workload	Contact Hours	Self Study	Credit Points
up to 25	300 h	90 h	210 h	10

Formal Prerequisites	Recommended Prerequisites	Further Information
-	Bachelor Courses in Academic Writing Skills	-

Learning Outcomes*

Upon completion of this module, students are expected to be able to:

- Design and produce a research proposal based on individual research and feedback from supervisors.¹
- Investigate and critically review relevant literature on a research topic in the fields of economics and finance to establish the need for further research and to summarise the findings and key aspects of the proposed research.¹
- Apply key methodological skills relevant for conducting and presenting a research project to carry out independently a group piece of work that includes primary and/or secondary research.^{2,3,4}

* 1 = Knowledge & Understanding, 2 = Application & Generation of Knowledge, 3 = Communication & Cooperation, 4 = Scientific Self-Conception & Professionalism

Content

In the course *M-EF_08a: Applied Research Project*, after learning fundamental techniques involved in the research process, including:

- Bibliographic searching
- Scientific writing skills for research purposes
- Critically reviewing subject literature

Running economic experiments

students independently work in a group on their own research topics, formulated by teachers, in the fields of economics and finance.

- During the course *M-EF_08b: Research Methods*, the relevant steps in conducting and presenting own research projects are discussed. This includes:
 - Planning research activities, defining a research topic and structuring a research proposal
 - Composing research problems, questions and objectives
 - Drawing up a conceptual framework
 - Selecting appropriate qualitative and/or quantitative research methods and procedures; determining relevant theories and models to be used
 - Collecting data with the help of surveys or economic experiments
 - The layout of presentation slides and presentation techniques

At the end of this module, each group of students is expected to deliver a research proposal (10–15 pages) make a presentation about their own project in class (10–15 slides) and finally submit a complete research paper (20–25 pages).

Bibliography

- Ethridge, D. E. (2004) *Research Methodology and Applied Economics: Organizing, Planning, and Conducting Economic Research*, 2nd ed., Ames, IO: Blackwell Publishing.
- Friedman, D., Cassar, A., and Selten, R. (2004) *Economics Lab: An Introduction to Experimental Economics* (Routledge Advances in Experimental and Computable Economics), London: Routledge Chapman & Hall.
- Friedman, D., and Cassar, A. (2004) *Economics Lab – An Intensive Course in Experimental Economics*, New York: Routledge
- Saunders, M., Lewis, P., and Thornhill, A. (2009) *Research Methods for Business Students*, 6th ed., Harlow: Pearson.
- Patten, M. L., and Newhart, M. (2017) *Understanding Research Methods: An Overview of the Essentials*, 10th ed., New York: Routledge
- Faculty Society and Economics, Hochschule Rhein-Waal (2016) Academic Writing Manual, Kleve, mimeo
- Faculty Society and Economics, Hochschule Rhein-Waal (2017) Guideline to Harvard Referencing Style, Kleve, mimeo

Course(s)	Contact Hours	Teacher(s)
M-EF_08a: Applied Research Project (Project)	4	Prof. Dr. Jörn Sickmann
M-EF_08b: Research Methods (Seminar)	2	Prof. Dr. Gernot Müller

Requirements for the Awarding of Credit Points	Possible Examination	Significance of Mark
Examination	Term Paper	10%

Module M-EF_09: Modelling Financial Markets

Classification	Study Semester	Offer	Equivalent	Language	Responsible Professor
Required Module	2	Summer Term	-	English	Prof. Dr. Ute Merbecks

Size of Group	Workload	Contact Hours	Self Study	Credit Points
up to 50	150 h	60 h	90 h	5

Formal Prerequisites	Recommended Prerequisites	Further Information
-	Bachelor Courses in Corporate Finance	-

Learning Outcomes*
<p>Upon successful completion of the course, students will be able to:</p> <ul style="list-style-type: none"> Describe the process of issuing shares by listed companies.¹ Illustrate the allocation of shares to the shareholders and understand the different share types.¹ Understand trading on stock exchanges in detail by working on case studies in the laboratory.² Apply key equity valuation methods to perform stock valuations.^{1,2} Extract key information from financial statements and assess the limits of financial reports for valuation purposes.^{1,2} Critically evaluate different valuation tools and identify the limits of different valuation models.^{2,4} Improve the credibility of valuations by using a professional and transparent approach.⁴ <p>* 1 = Knowledge & Understanding, 2 = Application & Generation of Knowledge, 3 = Communication & Cooperation, 4 = Scientific Self-Conception & Professionalism</p>

Content
<p>The course <i>M-EF_09a: Stock Exchange and Market Simulations</i> will include the following topics:</p> <ul style="list-style-type: none"> Shareholders' equity shown in financial statements (accounting for retained earnings, dividends, and splits; stockholders' equity transactions as reported in the financial statements) Right of shareholders and classes of stocks (par/non-par; common/preferred, registered/non-registered) The processes of issuing stocks (IPO, Direct Placement, Capital Increase, Stock Split). Theory of stock exchanges and institutional framework for trading German stocks on Frankfurt Stock Exchange Market simulation in the MaTRiX laboratory (case studies) <p>The course <i>M-EF_09b: Equity Valuation</i> will include the following topics:</p> <ul style="list-style-type: none"> The concept of value Strategy and value creation Market-based models to valuation Financial statement analysis Cash-flow-based and earnings-based models of valuation Forecasting of cash-flows and earnings Determination of discount rates

Bibliography
<ul style="list-style-type: none"> Berk, J., DeMarzo, P., and Harford, J. (2016) <i>Fundamentals of Corporate Finance</i>, 4th ed., London: . Gitman, L., and Zutter, C. (2014) <i>Principles of Corporate Finance</i>, 7th ed., London: . Mishkin, F., and Eakins, S. (2015) <i>Financial Markets and Institutions</i>, 8th ed., Prentice Hall. Pinto, J. E. et al. (2014) <i>Equity Asset Valuation</i>, 3rd ed., Hoboken. Penman, S. H. (2013) <i>Financial Statement Analysis and Security Valuation</i>, 5th international ed., New York: McGraw Hill. Palepu, K. G., Healy, P. M., and Peek, E. (2016) <i>Business Analysis and Valuation IFRS Edition, Text and Cases</i>, 4th ed., South-Western Cengage Learning. Damodaran, A. (2012) <i>Investment Valuation</i>, 3rd ed., Wiley.

Course(s)	Contact Hours	Teacher(s)
M-EF_09a: Stock Exchange and Market Simulations (Lecture + Practical Training)	2	Prof. Dr. Ute Merbecks
M-EF_09b: Equity Valuation (Exercise + Practical Training)	2	Prof. Dr. Philipp Schorn

Requirements for the Awarding of Credit Points	Possible Examination	Significance of Mark
Examination	Written Exam, Assignment, or any Combination	5%

Module M-EF_10.01: Financial Market Regulation

Classification	Study Semester	Offer	Equivalent	Language	Responsible Professor
Elective Module	1	Winter Term	-	English	Prof. Dr. Ute Merbecks

Size of Group	Workload	Contact Hours	Self Study	Credit Points
up to 25	150 h	60 h	90 h	5

Formal Prerequisites	Recommended Prerequisites	Further Information
-	-	-

Learning Outcomes*
<p>Upon successful completion of the module, students will be able to describe the basic instruments used by governments and public authorities to intervene in financial markets.¹ They will be able to illustrate the theoretical models of financial markets.¹ Furthermore, students will be able to discuss different approaches used as a rationale for financial market interventions.¹ The module will provide a critical view on current financial regulatory issues with the aim to identify the most appropriate regulatory policies. Therefore, students will be able to evaluate real regulatory cases critically.²</p> <p><i>* 1 = Knowledge & Understanding, 2 = Application & Generation of Knowledge, 3 = Communication & Cooperation, 4 = Scientific Self-Conception & Professionalism</i></p>

Content
<p>The premise of the course is an understanding of the economic tools traditionally used in regulating financial markets, which include remedying market failures and collecting tax revenue. Beyond traditional approaches, new insights from psychology and neuroscience will be discussed to explain consumer behaviour in financial markets. This will help students to understand the design of different policy tools that better motivate desired behaviour change or are more cost-effective than traditional financial market policy tools. Hence, the course intends to give students a profound understanding of the various choices available to policy makers in relation to the design and structure of national and supranational regulatory institutions and frameworks on financial markets.</p>

Bibliography
<ul style="list-style-type: none"> ▪ Madrian, B.C. (2014): Applying Insights from Behavioral Economics to Policy Design, Annual Review of Economics, vol. 6, pp. 663-688. ▪ Merville, L. J./Osborne, D.K. (1990): Constitutional Democracy and the Theory of Agency, Constitutional Political Economy, vol. 1, pp. 21–47. ▪ Kenning, P. et al. (2017): Verbraucherwissenschaften, Rahmenbedingungen, Forschungsfelder und Institutionen, Wiesbaden. ▪ Kenning, P. (2014): Consumer Neuroscience, Stuttgart. ▪ Stigler, G.J. (1971): The Theory of Economic Regulation, Bell Journal of Economics and Management Science, vol. 2, pp. 3-21. ▪ Thaler, R.H./Sunstein, C.R.: Nudge: Improving Decisions about Health, Wealth, and Happiness, New Haven 2008.

Course(s)	Contact Hours	Teacher(s)
M-EF_10-01: Financial Market Regulation (Lecture)	4	Prof. Dr. Ute Merbecks

Requirements for the Awarding of Credit Points	Possible Examination	Significance of Mark
Examination	Written Exam, Oral Exam, or any Combination	5%

Module M-EF_10.02: Applied Game Theory and Auctions

Classification	Study Semester	Offer	Equivalent	Language	Responsible Professor
Elective Module	1	Winter Term	-	English	Prof. Dr. Hasan Alkas

Size of Group	Workload	Contact Hours	Self Study	Credit Points
up to 25	150 h	60 h	90 h	5

Formal Prerequisites	Recommended Prerequisites	Further Information
-	-	-

Learning Outcomes*
<p>By the end of the course, students will be familiar with the methods necessary to analyse economic situations and to understand the linkages between individual decision-making and multi-person interactions.¹ The focus will be on the design, presentation and simulation of various games and auctions in the classroom.¹ Students will be able to apply and assess the taught theoretical game concepts in order to make decisions and develop the best response strategies.^{2,3} Students will be able to evaluate auction designs and the optimal bidding strategy associated with different types of auctions, and thereby apply mechanism design and the revelation principle to find out the optimal auction type.^{2,3} Students will be able to use the revenue equivalence theory to assess the differences between forms of auctions that will be applied to different risk types.^{1,2,3}</p> <p>* 1 = Knowledge & Understanding, 2 = Application & Generation of Knowledge, 3 = Communication & Cooperation, 4 = Scientific Self-Conception & Professionalism</p>

Content
<p>The interdependence of individual decisions will be analysed in a theoretical game framework. Relevant concepts and methods to solve non-cooperative games will be discussed and applied to practical economic and business situations. Main topics to be covered include:</p> <ul style="list-style-type: none"> • Types and structures of games • Strategies and various types of equilibria • Sequential and simultaneous games • Extensive-form games • Parallel and sequential auction types and their simulations • Mechanism design • Optimal bidding strategy • Revelation principle • Revenue equivalence <p>Relevant intermediate and advanced level microeconomic concepts will be presented and explained throughout the course. The theory of individual decision-making with particular reference to situations with asymmetrical information and risk will be analysed and applied.</p>

Bibliography
<ul style="list-style-type: none"> • Binmore, K. (2007). <i>Playing for Real: A Text on Game Theory</i>. Oxford: Oxford University Press. • Dixit, A., Skeath, S. & Reiley, D. (2009). <i>Games of Strategy</i>. New York: W&W Norton & Company. • Axelrod, R. (2006). <i>The Evolution of Cooperation</i>. New York: Perseus Books Group. • Klemperer, P. (2003). <i>Auctions Theory and Practice</i>. Bangladesh: University Press Group. • Krishna, V. (2009). <i>Auction theory</i>. Cambridge: Academic press.

Course(s)	Contact Hours	Teacher(s)
M-EF_10.02: Applied Game Theory and Auctions (Lecture)	4	Prof. Dr. Hasan Alkas

Requirements for the Awarding of Credit Points	Possible Examination	Significance of Mark
Examination	Written Exam, Assignment, or any Combination	5%

Module M-EF_10.03: Incentive Based Regulatory Economics

Classification	Study Semester	Offer	Equivalent	Language	Responsible Professor
Elective Module	1	Winter Term	-	English	Prof. Dr. Hasan Alkas

Size of Group	Workload	Contact Hours	Self Study	Credit Points
up to 25	150 h	60 h	90 h	5

Formal Prerequisites	Recommended Prerequisites	Further Information
-	-	-

Learning Outcomes*

This course aims to contribute to students' enhanced understanding of the ways in which governments and public authorities intervene in regulated markets.¹ They will be able to assess regulatory measures and remedies and their impact on the sectors.² They will apply concepts from competition and regulation theory, notably methods associated with regulatory cases at EU level.² The focus will be on incentive-based regulation mechanisms. By the end of the course, students will be able to use the basic methods of regulatory and competition economics and apply them to concrete cases, by designing simulations in the class.^{2,3} The course aims to give students a basic understanding of the economics of regulation and antitrust.¹ The course will also familiarize students with political, legal and historical aspects, and provide them with industry-specific knowledge, such as on network sectors.¹

* 1 = Knowledge & Understanding, 2 = Application & Generation of Knowledge, 3 = Communication & Cooperation, 4 = Scientific Self-Conception & Professionalism

Content

- The course focuses on the principles of ex ante and ex post regulation, especially in network industries, and evaluates the relationship between supranational and national independent regulatory authorities on one hand and ministries on the other. The changing shift of regulation towards digital dominance and the role of data will be assessed using case studies.
- The course intends to give students a profound understanding of the various remedies available to policy makers and national supervisory authorities in relation to the design and structure of national and supranational regulatory institutions and frameworks. The course will provide a critical view on current regulatory developments with the aim to identify the most appropriate regulatory policies and discuss ways to integrate regulatory and industrial policy at EU level.
- Students will analyse and discuss practical regulation cases under the supervision of the professor and demonstrate that they are able to structure, analyse and apply their knowledge to real cases from network industries by applying simulations such as on co-investment.
- The following topics will be assessed and appropriate concepts and methods for their analysis will be selected and applied:
 - Introduction to the theory of regulation and incentive-based structures
 - Institutional setting of regulation in the EU
 - Market entry and replicability
 - Network effects
 - Anticompetitive strategies of incumbents
 - Dynamic and static effects of competition in regulated markets
 - Asymmetric wholesale obligations
 - Cost-based regulation vs. incentive regulation
 - Price regulation and margin squeeze tests
 - Digital dominance
 - Incentives related to the sunset clause and the investment ladder
 - Risk-sharing and its relevance for infrastructure investments

Bibliography

- Viscusi, W. K., J. M. Vernon, and J.E. Harrington Jr. (2005) Economics of Regulation and Antitrust, 4th ed., Cambridge, MA: MIT Press.
- Motta, M. (2004) Competition Policy: Theory and Practice, New York, NY: Cambridge University Press.
- Laffont, J. and J. Tirole (1993) A Theory of Incentives in Procurement and Regulation.
- Brandenburger, A.M. and B. J. Nalebuff (1998) Co-Opetition, New York, NY: Currency Doubleday.

Course(s)	Contact Hours	Teacher(s)
M-EF_10.03: Incentive Based Regulatory Economics (Lecture)	4	Prof. Dr. Hasan Alkas

Requirements for the Awarding of Credit Points	Possible Examination	Significance of Mark
Examination	Written Exam	5%

Module M-EF_10.04: Institutions and Organisational Economics

Classification	Study Semester	Offer	Equivalent	Language	Responsible Professor
Elective Module	1	Winter Term	-	English	Prof. Dr. Hasan Alkas

Size of Group	Workload	Contact Hours	Self Study	Credit Points
up to 25	150 h	60 h	90 h	5

Formal Prerequisites	Recommended Prerequisites	Further Information
-	-	-

Learning Outcomes*
<p>Upon successful completion of the course, students will understand the role of institutions and apply advanced concepts from industrial organisation and microeconomics in order to analyse horizontal and vertical organisational problems.^{1,2} Graduates will be able to theoretically assess employment and promotion schemes, decision-making processes and structural issues in organisation and institutions.² There will be a focus on employment and promotion schemes, career concern models, implicit and explicit contracts, hiring decisions and job design.</p> <p>* 1 = Knowledge & Understanding, 2 = Application & Generation of Knowledge, 3 = Communication & Cooperation, 4 = Scientific Self-Conception & Professionalism</p>

Content
<p>The course addresses the following topics:</p> <ul style="list-style-type: none"> ▪ Boundaries and roles of institutions and firms ▪ Transaction cost theory and organisational efficiency ▪ Property rights and the theory of the firm ▪ Personnel management ▪ Decision-making in organisations ▪ Structures and processes in organisations ▪ Horizontal and vertical organisational problems ▪ Corporate governance and institutions of management control ▪ Hidden action – LEN model ▪ Methods to allocate internal resources and transfer pricing ▪ Agency theory and influencing activities ▪ Alternative forms of organisations (partnerships and cooperatives) ▪ Truth-telling mechanism and payment schemes used to overcome information asymmetry

Bibliography
<ul style="list-style-type: none"> ▪ Milgrom, P. Roberts, J. (1992). <i>Economics, Organization and Management</i>. New Jersey: Prentice Hall. ▪ Roberts, J. (2004). <i>The Modern Firm</i>. Oxford: Oxford University Press. ▪ Gibbons, R., & Roberts, J. (2012). <i>The Handbook of Organizational Economics</i>. Princeton: Princeton University Press. ▪ Gibbons, R. (2005). Incentives Between Firms (and Within), <i>Management Science</i>, 51, pp. 2-17. ▪ Lazear, E.P. & Gibbs, M. (1998). <i>Personnel Economics in Practice</i>. Hoboken: Wiley.

Course(s)	Contact Hours	Teacher(s)
M-EF_10.04: Institutions and Organisational Economics (Lecture)	4	Prof. Dr. Hasan Alkas

Requirements for the Awarding of Credit Points	Possible Examination	Significance of Mark
Examination	Oral Exam	5%

Module M-EF_10.05: Economic Analysis of Accounting

Classification	Study Semester	Offer	Equivalent	Language	Responsible Professor
Elective Module	2	Summer Term	-	English	Prof. Dr. Philipp Schorn

Size of Group	Workload	Contact Hours	Self Study	Credit Points
up to 25	150 h	60 h	90 h	5

Formal Prerequisites	Recommended Prerequisites	Further Information
-	Bachelor Courses in Financial Accounting, Corporate Finance and Research Methods	-

Learning Outcomes*
<p>This course is intended to provide an introduction to accounting theory and an in-depth treatment of contemporary issues and problems in the field of financial accounting and standard-setting. Upon the successful completion of this course, students will be able to:</p> <ul style="list-style-type: none"> ▪ Explain the nature of accounting theories in a historical context as well as their relevance to a contemporary business environment characterised by incomplete financial reporting regulation.¹ ▪ Apply relevant accounting theories to understand how financial accounting aids the functioning of capital markets and why it needs to be regulated.² ▪ Understand and critically evaluate accounting research in the context of capital markets and to identify future research opportunities.² ▪ Apply different research tools to analyse current trends and problems in financial reporting.² ▪ Use and reference a broad range of accounting theories and to support decision-making as an accounting professional across a range of business and social contexts.⁴ <p><small>* 1 = Knowledge & Understanding, 2 = Application & Generation of Knowledge, 3 = Communication & Cooperation, 4 = Scientific Self-Conception & Professionalism</small></p>

Content
<p>In this course, fundamental concepts and problems of financial accounting are analysed according to economic theory. Practical recommendations for accounting regulation are also devised. Topics to be discussed include:</p> <ul style="list-style-type: none"> ▪ Concept of decision-usefulness ▪ Positive accounting theory ▪ Earnings management / accounting choices ▪ Conservatism ▪ Regulation of financial accounting, i.e. disclosure requirements and possible consequences of regulation ▪ Economic impact of financial reporting ▪ Standard-setting and harmonization of financial reporting ▪ Auditing and its impact on financial accounting

Bibliography
<ul style="list-style-type: none"> ▪ Scott, W. R. (2015) <i>Financial Accounting Theory</i>, 7th ed., Toronto: Pearson Canada Inc. ▪ Wolk, H., Dodd, J., and Rozycki, J. (2017) <i>Accounting Theory, Conceptual Issues in a Political and Economic Environment</i>, 9th ed., Sage. ▪ Current research papers as announced in class.

Course(s)	Contact Hours	Teacher(s)
M-EF_10.05: Economic Analysis of Accounting (Lecture)	4	Prof. Dr. Philipp Schorn

Requirements for the Awarding of Credit Points	Possible Examination	Significance of Mark
Examination	Written Exam, Assignment, or any Combination	5%

Module M-EF_10.06: Tax Impact on Financial Decision Making

Classification	Study Semester	Offer	Equivalent	Language	Responsible Professor
Elective Module	2	Summer Term	-	English	Prof. Dr. Ralf Klapdor

Size of Group	Workload	Contact Hours	Self Study	Credit Points
up to 25	150 h	60 h	90 h	5

Formal Prerequisites	Recommended Prerequisites	Further Information
-	-	-

Learning Outcomes*
<p>After the successful completion of this course, students will:</p> <ul style="list-style-type: none"> Be competent in the international discussion about the elimination of double taxation and the fight against minor taxation.¹ Be able to use various methods to evaluate tax burdens.^{1,2} Be able to analyse the tax impact of financial and investment decisions.² Be able to integrate tax strategy in corporate decision making.² <p>* 1 = Knowledge & Understanding, 2 = Application & Generation of Knowledge, 3 = Communication & Cooperation, 4 = Scientific Self-Conception & Professionalism</p>

Content
<p>Main topics to be covered include:</p> <ul style="list-style-type: none"> Influence of taxation on investment decisions (investment decisions in a world without taxes, net present value after taxation, analysis of tax impact on investment ranking, importance of tax law, tax paradox, impact of special depreciation and investment grants) Influence of taxation on financial decisions (initial calculation for contractual payments vs. profit distribution, calculating and analysing marginal tax rates, financing by equity vs. debts) Implicit taxes, clienteles and arbitrage International tax coordination (OECD model tax convention, transfer-pricing guidelines) New developments after BEPS (main outcome of BEPS, multilateral instruments, ATAD)

Bibliography
<ul style="list-style-type: none"> Scholes, M. et al. (2015) <i>Taxes and Business Strategy</i>, 5th ed., Upper Saddle River, NJ: Pearson/Prentice Hall. Schaz, D., and Schanz, S. (2010) <i>Business Taxation and Financial Decisions</i>, Springer Heidelberg. Hji Panayi, C. (2013) <i>European Union Corporate Tax Law</i>, Cambridge University Press New York.

Course(s)	Contact Hours	Teacher(s)
M-EF_10.06: Tax Impact on Financial Decision Making (Lecture)	4	Prof. Dr. Ralf Klapdor

Requirements for the Awarding of Credit Points	Possible Examination	Significance of Mark
Examination	Written Exam, Assignment, or any Combination	5%

Module M-EF_10.07: Derivatives, Financial and Real Options

Classification	Study Semester	Offer	Equivalent	Language	Responsible Professor
Elective Module	2	Summer Term	-	English	Prof. Dr. Jörn Sickmann

Size of Group	Workload	Contact Hours	Self Study	Credit Points
up to 25	150 h	60 h	90 h	5

Formal Prerequisites	Recommended Prerequisites	Further Information
-	-	-

Learning Outcomes*
<p>By the end of the course, students will have:</p> <ul style="list-style-type: none"> Acquired a profound knowledge of how derivative products work, how they are used and how they are priced.¹ Gained a deep understanding of options theory, and learned how to transfer insights from option theory to analyse certain aspects related to the (non-financial) real economy, e.g., how to value managerial flexibility.^{1,2} Understood how to complement traditional investment decision rules with an analysis of real options.^{1,2} <p>* 1 = Knowledge & Understanding, 2 = Application & Generation of Knowledge, 3 = Communication & Cooperation, 4 = Scientific Self-Conception & Professionalism</p>

Content
<p>In this course, a broad range of derivative products will be introduced, including forwards, futures, swaps and options. Students will learn how these products work, how they are used for hedging, speculation and arbitrage and also how they are priced. In the second half of the course a particular emphasis will be laid on financial and real options theory. Students will be introduced to option pricing theory (including binomial trees and the Black Scholes Merton Model). Students will learn how the real-options approach allows the financial manager to take into account strategic considerations with regard to the mode of market entrance and the value of managerial flexibility in investment decision making. Traditional investment decision rules, like the Net Present Value (NPV) rule, will be extended to take into account the real value of options. After providing a general introduction to real options theory, the course will cover in-depth the option to delay, the option to expand and the option to abandon.</p>

Bibliography
<ul style="list-style-type: none"> Hull, John C. (2011) <i>Options, Futures, and Other Derivatives</i>, 8th ed., NJ: Prentice Hall. [Main Textbook] Damodaran, A. (2008) <i>The Promise and Peril of Real Options</i>, NY: Stern School of Business. Dixit, A. K. and R. S. Pyndick (1994) <i>Investment Under Uncertainty</i>, Englewood Cliffs, NJ: Prentice Hall. Trigeorgis, L. (1996) <i>Real Options - Managerial Flexibility and Strategy in Resource Allocation</i>, Cambridge, MA: MIT Press.

Course(s)	Contact Hours	Teacher(s)
M-EF_10.07: Derivatives, Financial and Real Options (Lecture)	4	Prof. Dr. Jörn Sickmann

Requirements for the Awarding of Credit Points	Possible Examination	Significance of Mark
Examination	Written Exam, Assignment, or any Combination	5%

Module M-EF_10.08: Innovation Management & Investment in Emerging Technologies

Classification	Study Semester	Offer	Equivalent	Language	Responsible Professor
Elective Module	2	Summer Term	-	English	Prof. Dr. Hasan Alkas

Size of Group	Workload	Contact Hours	Self Study	Credit Points
up to 25	150 h	60 h	90 h	5 CP

Formal Prerequisites	Recommended Prerequisites	Further Information
-	-	-

Learning Outcomes*
<ul style="list-style-type: none"> • The course aims to provide students with the knowledge to understand different levels of the innovation management process as well as the interdisciplinary and multifunctional dimensions of innovations.¹ • Students will apply their knowledge on innovations and Key Enabling Technologies (KETs) to problems arising in the context of innovation management related to high-tech industries.² • They will apply their knowledge to problems arising in the context of innovation management and especially to emerging markets.² • They will be able to evaluate problems at the operational as well as the strategic level.³ • They will apply innovation management tools and assess their shortcomings and will be able to demonstrate fundamentals in the relevant tools needed to understand emerging technology markets and to discuss their role for increasing competitiveness and productivity.^{2,3} • The linkage between innovation at micro levels and the impact on economic growth will be analysed during the course.¹ <p><small>* 1 = Knowledge & Understanding, 2 = Application & Generation of Knowledge, 3 = Communication & Cooperation, 4 = Scientific Self-Conception & Professionalism</small></p>

Content
<p>The following topics will be assessed and appropriate concepts and methods for their analysis will be selected and applied:</p> <ul style="list-style-type: none"> • Innovation management and technical change • Technology-oriented industrial policy and growth theories • Economics of patents and performance indicators • Role of ICT and broadband on productivity and competitiveness • Tools for analysing investments in emerging markets • Investment strategies in emerging technologies • Clustering technology fields (country cases) • Innovation skills and metrics • Innovation strategies and firm routines • Open-source and cooperative innovations • Innovation and the location of production • Competitiveness of nations and ecosystems • Technological trajectories • Managing innovation and technical change

Bibliography
<ul style="list-style-type: none"> • Tidd, J., J. Bessant (2005) <i>Managing Innovation: Integrating Technological, Market and Organizational Change</i>, Chichester: Wiley & Sons. • Dixit, A. K. and R. S. Pyndick (1994) <i>Investment Under Uncertainty</i>, Englewood Cliffs, NJ: Prentice Hall. • Fraser, A. B. (2010) <i>Fisher Investments on emerging markets</i>. Hoboken, N.J.: Wiley. • Sauvant, K., W. Maschek, and G. McAllister (2010) <i>Foreign direct investments from emerging markets: the challenges ahead</i>. New York, N.Y.: Palgrave Macmillan. • Kose, M. (2010) <i>Emerging markets resilience and growth amid global turmoil</i>. Washington, D.C.: Brookings Institution Press.

Course(s)	Contact Hours	Teacher(s)
M-EF_10.08: Innovation Management & Investment in Emerging Technologies (Lecture)	4	Prof. Dr. Hasan Alkas

Requirements for the Awarding of Credit Points	Possible Examination	Significance of Mark
Examination	Oral Exam, Assignment, or any Combination	5%

Module M-EF_10.09: Behavioural Economics and Finance

Classification	Study Semester	Offer	Equivalent	Language	Responsible Professor
Elective Module	2	Summer Term	-	English	Prof. Dr. Thomas Pitz

Size of Group	Workload	Contact Hours	Self Study	Credit Points
up to 25	150 h	60 h	90 h	5

Formal Prerequisites	Recommended Prerequisites	Further Information
-	-	-

Learning Outcomes*
<p>Upon successful completion of the module, students will be able to characterise differences between rational and descriptive economic theories.¹ By the end of the course, students will be familiar with the main methods and results in the field of behavioural economics and finance.² This includes the methodological background of experimental economics.² The students will be able to design, run and analyse experiments related to behavioural finance.³ The students will be able to work independently on actual research questions in the field of behavioural economics and finance.⁴</p> <p><small>* 1 = Knowledge & Understanding, 2 = Application & Generation of Knowledge, 3 = Communication & Cooperation, 4 = Scientific Self-Conception & Professionalism</small></p>

Content
<p>The course will introduce psychological research about bounded rational behaviour in economics and finance. The classical economic theory is based on the assumption that investors behave in a rational, predictable and unbiased manner. In the 1970s, Kahneman and Tversky criticised – based on experimental results – the omnipotent, rational “homo economicus” as not corresponding to actual human behaviour. Decision-makers often use heuristics instead of purely (unbounded) rational reasoning. The class introduces the classical results of behavioural and experimental economics from psychologists as well as economists. The main aspects to be covered are: rational choice and game theory, quasi-rational choice, introduction to behavioural and experimental economics, prospect theory, psychology of financial markets bubbles and crashes. Students will also get the opportunity to design and run their own experiments in the laboratory of experimental economics.</p>

Bibliography
<ul style="list-style-type: none"> • Baddeley, M. (2013) <i>Behavioural Economics and Finance</i>, Routledge, New York. • Dhami, S. (2017) <i>The Foundations of Behavioral Economic Analysis</i>, Oxford University Press. • Forbes, W. (2009) <i>Behavioural Finance</i>, New York: Wiley. • Kahneman, K., and Tversky, A. (2000) <i>Choices, Values and Frames</i>, Cambridge University Press. • Michael Maschler, M., et al. (2013) <i>Game Theory</i>, Cambridge University Press.

Course(s)	Contact Hours	Teacher(s)
M-EF_10.09: Behavioural Economics and Finance (Lecture)	4	Prof. Dr. Thomas Pitz

Requirements for the Awarding of Credit Points	Possible Examination	Significance of Mark
Examination	Written Exam, Assignment, or any Combination	5%

Module M-EF_10.99: Language Course Business English or German

Classification	Study Semester	Offer	Equivalent	Language	Responsible Professor
Elective Module	1 / 2	Summer and Winter Term	-	-	International Center

Size of Group	Workload	Contact Hours	Self Study	Credit Points
up to 20	150 h	52 h	98 h	5

Formal Prerequisites	Recommended Prerequisites	Further Information
Level A1.1 onwards: preliminary stage	-	-

Learning Outcomes*
At the end of the course, students are able to communicate appropriately on economic matters, depending on their level.

Bibliography/Resources/Media
<ul style="list-style-type: none"> ▪ Digital media, additional material (OER), language learning software

Course(s)	Contact Hours	Teacher(s)
M-EF_10.99: Language Course Business English or German (Lecture)	4	International Center

Requirements for the Awarding of Credit Points	Possible Examination	Significance of Mark
Examination	Written Exam, Oral Exam, Project Work, or any Combination	5%

Module M-EF_11: Current Topics in Economics and Finance

Classification	Study Semester	Offer	Equivalent	Language	Responsible Professor
Required Module	3	Summer and Winter Term	-	English	Prof. Dr. Jörn Sickmann

Size of Group	Workload	Contact Hours	Self Study	Credit Points
up to 25	150 h	60 h	90 h	5

Formal Prerequisites	Recommended Prerequisites	Further Information
-	Bachelor Courses in Microeconomics and Industrial Organisation; M-EF_08	-

Learning Outcomes*
<p>The student will formulate a detailed research proposal in a topic of their choosing. The main focus of this proposal will be to establish a feasible outline for the student's own master's thesis (although such a link is not formally required). The exact theme, topic and research methodology are fully at the discretion of the student, with the only requirement being that it forms a suitable topic for a future thesis. The lectures of this course are provided to the students as a refresher of the main skills needed to initiate and successfully complete a research project. Combined with the student's prerequisite knowledge, the student will attain a deep level of understanding on the "why" and "how" of research in the fields of finance and economics. Upon completion of the course, the student will present his/her topic to colleagues, and provide a well-argued peer review on the work of other researchers.</p> <p><small>* 1 = Knowledge & Understanding, 2 = Application & Generation of Knowledge, 3 = Communication & Cooperation, 4 = Scientific Self-Conception & Professionalism</small></p>

Content
<p>The lectures will provide a succinct refresher of critical research-related skills, including topics on research methodology, different research strategies, basic statistical skills and skills related to academic writing. The contents of the research proposal are dependent on the topics selected by the student.</p>

Bibliography
<ul style="list-style-type: none"> Various peer-reviewed journal publications, dependent on the selected topic.

Course(s)	Contact Hours	Teacher(s)
M-EF_11: Current Topics in Economics and Finance (Seminar + Practical Training + Project)	4	Prof. Dr. Jörn Sickmann

Requirements for the Awarding of Credit Points	Possible Examination	Significance of Mark
Examination	Written Exam, Assignment, or any Combination	5%

Module M-EF_12: Master Thesis

Classification	Study Semester	Offer	Equivalent	Language	Responsible Professor
Required Module	3	Winter and Summer Term	-	English	Supervisor (Professor of HSRW)

Size of Group	Workload	Contact Hours	Self-Study	Credit Points
-	660 h	10 h	650 h	22

Formal Prerequisites	Recommended Prerequisites	Further Information
50 CP	-	-

Learning Outcomes*
<p>The purpose of the master thesis is to demonstrate profound knowledge in the fields of economics and finance. Furthermore, students will need to prove their ability to analyze a given task independently using scientific methods. The tasks of the student include among others:</p> <ul style="list-style-type: none"> Defining a research topic and formulating research questions. Structuring and planning of their work. Critical review of existing literature. Drawing up a conceptual framework. Selecting appropriate qualitative and/or quantitative research methods and procedures, determining relevant theories and models to be used as well as justifying the scientific methods used and criticizing existing approaches. Synthesizing different theories learned in the Master program. <p>Moreover, students should prove their ability to:</p> <ul style="list-style-type: none"> Work independently. Express themselves in a scientific context. Be critical citizens who analyze and contribute towards solving economic and social challenges. <p>* 1 = Knowledge & Understanding, 2 = Application & Generation of Knowledge, 3 = Communication & Cooperation, 4 = Scientific Self-Conception & Professionalism</p>

Content
<p>Students are working on applied or theoretical research topics in the field of economics and finance. The topics will be specified by the responsible professor (i.e. the supervisor), together with the student. The research may take the form of an internal master thesis or an external master thesis at a company or another organization.</p>

Bibliography
<ul style="list-style-type: none"> Faculty Society and Economics, Hochschule Rhein-Waal (2016) Academic Writing Manual, Kleve, mimeo Faculty Society and Economics, Hochschule Rhein-Waal (2017) Guideline to Harvard Referencing Style, Kleve, mimeo Ethridge, D. E. (2004) <i>Research Methodology and Applied Economics: Organizing, Planning, and Conducting Economic Research</i>, 2nd ed., Ames, IO: Blackwell Publishing. Friedman, D., D. Friedman, A. Cassar, and R. Selten (2004) <i>Economics Lab: An Introduction to Experimental Economics (Routledge Advances in Experimental and Computable Economics)</i>, London: Routledge Chapman & Hall. Topic dependent.

Requirements for the Awarding of Credit Points	Possible Examination	Significance of Mark
Examination	Thesis	30%

Module M-EF_13: Colloquium

Classification	Study Semester	Offer	Equivalent	Language	Responsible Professor
Required Module	3	Summer and Winter Term	-	English	Supervisor (Professor of HSRW)

Size of Group	Workload	Contact Hours	Self-Study	Credit Points
-	90 h	8 h	82 h	3

Formal Prerequisites	Recommended Prerequisites	Further Information
77 CP	-	-

Learning Outcomes*
Students will be able to demonstrate profound knowledge in the fields of economics and finance. They will present the main results of their academic work appropriately (e.g. poster and power point presentations) and will be able to answer topic related questions.
<i>* 1 = Knowledge & Understanding, 2 = Application & Generation of Knowledge, 3 = Communication & Cooperation, 4 = Scientific Self-Conception & Professionalism</i>

Content
The Master thesis is to be presented and discussed.

Bibliography
<ul style="list-style-type: none"> ▪ Faculty Society and Economics, Hochschule Rhein-Waal (2016) Academic Writing Manual, Kleve, mimeo ▪ Faculty Society and Economics, Hochschule Rhein-Waal (2017) Guideline to Harvard Referencing Style, Kleve, mimeo ▪ Topic dependent.

Requirements for the Awarding of Credit Points	Possible Examination	Significance of Mark
Examination	Oral Examination	5%