

Elective Modules Economics & Econometrics | Wahlfächer Economics & Econometrics

WahlKat-EE: Catalogue of Elective Modules: Economics & Econometrics | Wahlkatalog: Economics & Econometrics

Module Description

WI000100: Advanced Microeconomics | Advanced Microeconomics

Version of module description: Gültig ab summerterm 2019

Module Level: Master	Language: English	Duration: one semester	Frequency: summer semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

Students receive credit for the module after passing a multiple choice exam (written, 120 minutes). Students apply advanced concepts and methods of microeconomics (most notably of expected utility theory and game theory) to concrete decision problems and develop solutions. They show their ability to assess and evaluate decisions under uncertainty and asymmetric information (e.g. on insurance markets) as well as strategic interaction of decision makers (e.g. under oligopolistic competition). Hereby, students demonstrate their capacity for abstraction (thinking in economic models) and concretization (interpreting and applying the results of the model).

Repeat Examination:

Next semester

(Recommended) Prerequisites:

WI000021 "Economics I (Microeconomics)" OR WI001056 "Principles of Economics"

Content:

The module imparts advanced concepts and methods of microeconomics focussing on choice under uncertainty and strategic interaction. It examines markets under asymmetric information and imperfect competition.

- Expected Utility Theory
- Risk Preferences
- Insurance Markets

- i) Adverse Selection
- ii) Moral Hazard
- Game Theory
 - Nash Equilibrium
- i) in pure and mixed strategies
- ii) in simultaneous and sequential games
- iii) in one shot and repeated games
 - Strategic Interaction in Oligopolistic Markets
- i) Simultaneous and sequential quantity competition (Cournot, Stackelberg)

Intended Learning Outcomes:

Participation in the module will enable the students

- to apply expected utility theory in order to describe and evaluate decisions under uncertainty and/or asymmetric information. They will be capable of
 - analyzing the functioning of competitive insurance markets,
 - assessing market failure arising from asymmetric information,
 - solving problems of incentive compatibility.
- to apply game theory in order to analyze strategic interaction. They will be capable of
 - identifying and assessing equilibria,
 - practicing backward induction,
 - analyzing social dilemmas and coordination problems.
- to conceive policy advice and to evaluate concrete policy measures (e.g. in the field of social security or competition policy).

Teaching and Learning Methods:

The module consists of a lecture as well as an exercise course. The lecture content will be conveyed to the students by means of verbal presentation. The exercise course aims to encourage students to independently deliberate the presented economic problems, which are discussed in the lecture and in the relevant literature. In the exercise course, participants apply the acquired knowledge by solving exercises and implementing case studies, partially this process takes place in group work. Moreover, concrete issues raised by students are addressed and online polls are conducted at regular intervals. The polls contain multiple-choice questions similar to those presented in the exam and help course participants gauge their level of performance relative to others.

Media:

Text books, script, exercises, online polls, videos

Reading List:

- Gravelle, Hugh and Ray Rees (2004): Microeconomics, Pearson
- Jehle, Geoffrey and Philip Reny (2011): Advanced Microeconomic Theory, Pearson
- Kreps, David (1990): A Course in Microeconomic Theory, Princeton University Press
- Osborne, Martin (2004): An Introduction to Game Theory, Oxford University Press
- Shy, Oz (1996): Industrial Organization: Theory and Applications, MIT Press

- Zweifel, Peter and Roland Eisen (2012): Insurance Economics, Springer

Responsible for Module:

Feilcke, Christian; Dr. rer. pol.

Courses (Type of course, Weekly hours per semester), Instructor:

Advanced Microeconomics (WI000100, englisch) (Vorlesung mit integrierten Übungen, 4 SWS)

Feilcke C

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

MGT001297: Advanced Seminar Economics, Policy & Econometrics: Insurance Economics | Advanced Seminar Economics, Policy & Econometrics: Insurance Economics

Version of module description: Gültig ab summerterm 2021

Module Level: Master	Language: English	Duration: one semester	Frequency: winter semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

Seminar participants elaborate a topic in insurance economics - either independently or in groups of two or three (depending on the total number of participants). The examination comprises two parts:

- 1) Presentation (1/3 of grade) on the selected topic and a corresponding brief written précis (extensive handout) followed by a discussion
- 2) Written seminar paper (12 pages) (2/3 of grade) on the selected topic

Students should demonstrate their capacity for abstraction (thinking in economic models) and concretization (interpreting and applying the results of the model, deriving recommendations for political action) regarding current topics.

Repeat Examination:

Next semester

(Recommended) Prerequisites:

Participants should be familiar with the fundamental microeconomic analysis of choice under uncertainty, in particular with expected utility theory (as taught for instance in "Advanced Microeconomics" at TUM School of Management).

Content:

Seminar participants analyze selected problems in insurance economics from a theoretical as well as practical perspective. A particular focus of the seminar will be on the optimal design of insurance contracts in different informational settings and in different market structures.

Furthermore, participants will derive recommendations for an optimal regulation of insurance markets in the presence of market failures.

Intended Learning Outcomes:

After participation, students will be able to explain and present specific topics in insurance economics by means of micro- and welfare-economic concepts. Furthermore, they are able to assess the debated theoretical and empirical contributions to insurance economics and to integrate them in the literature. By means of discussions following the presentations, students learn to critically reflect upon the assumptions and methods of the debated economic models.

Teaching and Learning Methods:

Seminar participants elaborate a topic in insurance economics - either independently or in groups of two or three (depending on the total number of participants). The examination comprises a presentation as well as a seminar paper on the selected topic.

Media:

Reading List:

- Dionne, G. (Ed.). (2013). Handbook of Insurance. Springer Science & Business Media.
- Zweifel, P., & Eisen, R. (2012). Insurance Economics. Springer Science & Business Media.

Responsible for Module:

Feilcke, Christian; Dr. rer. pol.

Courses (Type of course, Weekly hours per semester), Instructor:

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

MGT001311: Advanced Seminar Economics, Policy & Econometrics: Regression Shrinkage Methods in Economics | Advanced Seminar Economics, Policy & Econometrics: Regression Shrinkage Methods in Economics

Version of module description: Gültig ab summerterm 2021

Module Level: Master	Language: English	Duration: one semester	Frequency: winter semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

Seminar paper (50%), presentation (50%); seminar paper (approx. 10 pages without figures and tables) and presentation (approx. 15 minutes) and participation in the discussions during the seminar.

Repeat Examination:

End of Semester

(Recommended) Prerequisites:

The prerequisite courses include Empirical Research Methods or equivalent.

Content:

The seminar gives an introduction to regression shrinkage methods (e.g. Ridge and Lasso regressions). The students should be enabled to understand basic concepts in regression shrinkage and to utilize recent results for their own applied work. Both econometric theory and (economic) applications will be included in the course.

Intended Learning Outcomes:

At the end of this module, students will be able to

- use regression shrinkage methods in empirical economics
- understand the technical conditions and assumptions of these models
- assess the limitations of these approaches in real applications
- interpret the econometric results in a meaningful way.

Teaching and Learning Methods:

Media:

Reading List:

Hansen Bruce: Econometrics, online textbook
available at <http://www.ssc.wisc.edu/~bhansen/econometrics>

Hastie Trevor, Tibshirani Robert and Friedman Jerome: The Elements of Statistical Learning,
Springer,
available at <https://web.stanford.edu/~hastie/Papers/ESLII.pdf>

Gareth James, Witten Daniela, Hastie Trevor and Tibshirani Robert: An Introduction to Statistical Learning with Applications in R, Springer,
available at <https://www.statlearning.com>

Responsible for Module:

Farbmacher, Helmut; Prof. Dr.

Courses (Type of course, Weekly hours per semester), Instructor:

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

MGT001312: Microeconometric Methods for Big Data | Microeconometric Methods for Big Data [MM for Big Data]

Version of module description: Gültig ab summerterm 2021

Module Level: Master	Language: English	Duration: one semester	Frequency: irregularly
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

The final written exam (90 minutes) is to assess students' understanding of basic and advanced concepts in microeconomics. Students have to show that they not only understand the econometric theories but also can apply this knowledge in empirical economics and interpret the results in a meaningful way. The exam is at least partly based on multiple choice questions. Students may use a non-programmable calculator.

Students have the possibility to improve their final grade by taking a voluntarily midterm assignment. Participating successfully in this assignment improves the final grade by 0.3. The midterm assignment consists of handing in an exercise sheet, which may also include some data work. The completion of the exercise sheet is not mandatory, but highly recommended. The exercise sheet is to assess students' learning progress for the further course of the module.

Repeat Examination:

Next semester

(Recommended) Prerequisites:

The prerequisite courses include Empirical Research Methods or equivalent.

Content:

This modul prepares students for empirical research (e.g. for their Master's Thesis). We discuss the following topics:

1. Main Concepts in Econometrics: Causal Effects and Ceteris Paribus Analysis, Data Structures and Sampling, etc.
2. Main Concepts in Asymptotic Analysis: Convergence in Probability, Convergence in Distribution, Slutsky's Lemma, Continuous Mapping Theorem, etc.
3. Asymptotic Theory for OLS, 2SLS and GMM

4. Regression Shrinkage Methods (Ridge, Lasso, Elastic Net)
5. Decision Trees, Random/Causal Forests

Intended Learning Outcomes:

At the end of this module, students will be able to

- use state-of-the-art econometric methods in empirical economics
- understand the technical conditions and assumptions of these models
- assess the limitations of these approaches in real applications
- interpret the econometric results in a meaningful way
- and apply this knowledge to enhance the decision-making process.

Teaching and Learning Methods:

The module consists of lectures and integrated exercises. The lectures build a thorough understanding of microeconometric methods. In the exercises students learn to apply these methods in empirical economics. In addition to the integrated exercises, an excercise sheet is provided on which the student can practice individually and improve their final grade. Afterwards, the excercise sheet will be discussed in class. The excercise sheet includes various topics that are relevant for the exam.

Media:

Reading List:

Hansen Bruce: Econometrics, online textbook
available at <http://www.ssc.wisc.edu/~bhansen/econometrics>

Hastie Trevor, Tibshirani Robert and Friedman Jerome: The Elements of Statistical Learning, Springer,
available at <https://web.stanford.edu/~hastie/Papers/ESLII.pdf>

Gareth James, Witten Daniela, Hastie Trevor and Tibshirani Robert: An Introduction to Statistical Learning with Applications in R, Springer,
available at <https://www.statlearning.com>

Several units also have readings from published journal articles.

Responsible for Module:

Farbmacher, Helmut; Prof. Dr.

Courses (Type of course, Weekly hours per semester), Instructor:

Microeconometric Methods for Big Data (MGT001312, englisch) (Vorlesung mit integrierten Übungen, 4 SWS)

Farbmacher H [L], Farbmacher H, Groh R, Mühlegger M

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

MGT001313: Advanced Seminar Economics, Policy & Econometrics: Productivity, Efficiency and Risk | Advanced Seminar Economics, Policy & Econometrics: Productivity, Efficiency and Risk

Version of module description: Gültig ab summerterm 2021

Module Level: Master	Language: English	Duration: one semester	Frequency: winter semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

Coursework will be based on reading and discussing selected scientific papers. In addition academic elaboration and research on a specific topic related to the seminar's overall theme will be used.

Students will be required

- (i) to summarize the key insights on one of the seminar topics by a written essay (seminar paper), and to
- (ii) to present their findings in class in a 15-20 minutes presentation.

The course examination will consist of these two parts: (i) written seminar paper, and (ii) oral in-class presentation and discussion.

Repeat Examination:

End of Semester

(Recommended) Prerequisites:

Principles of Economics, Applied Statistics and Econometrics

Content:

The performance of various economic units (firms, departments, organisations etc.) is a key question in microeconomics. Such performance can be measured based on various concepts (as e.g. productivity, efficiency, technical change) applying various methods (as e.g. non-parametric data envelopment analysis, parametric stochastic frontier analysis) and different microdatasets. The applied productivity and efficiency literature is constantly evolving, however, seminal contributions are still highly relevant for current scientific work in the field. Hence, this seminar will cover key topics within the field of applied production analysis and performance measurement, such as: production/cost/profit/revenue functions, econometric modelling and

estimation of performance functions, empirical requirements in terms of data and framing, interpretation of empirical performance results and quality checks, derivation of management and policy recommendations etc.

Intended Learning Outcomes:

Students will study the key concepts in the research field of production economics and quantitative efficiency analysis also considering related risk concepts. The overall aim is to understand and reflect upon the role of microeconomic analysis and modelling in a production context as well as being able to apply stochastic and non-stochastic empirical measurement techniques to produce evidence with regard to the productivity of economic units, various forms of efficiency at firm and sectoral level and related management and policy implications. The seminar uses advanced original economic and empirical research articles for illustrating these concepts and for deriving fundamental insights and recommendations.

Teaching and Learning Methods:

Students will study selected academic articles related to the assigned topics. Students will be coached by the instructor(s) and perform their own in-depth research of related material, methods and data. Students will identify key research questions, methodological approach, required datasets and derived results and recommendations. Hence, a key objective is to enable students to acquire the ability to comprehend and reflect scientific work in related areas as well as communicate and effectively work in teams.

Media:

Lectures. Seminar presentations and discussions.

Reading List:

Coelli, T et. Al. (2005). An Introduction to Efficiency and Productivity Analysis. Springer; Kumhakar, S. (2015). Stochastic Frontier Analysis Using Stata. Cambridge; Kumbhakar, S. and K. Lovell (2003). Stochastic Frontier Analysis. Cambridge; plus various selected academic journal articles (Journal of Productivity Analysis JPA, Empirical Economics EE, Journal of Applied Econometrics JAE etc.)

Responsible for Module:

Sauer, Johannes; Prof. Dr. agr.

Courses (Type of course, Weekly hours per semester), Instructor:

Advanced Seminar Economics, Policy & Econometrics (MGT001313, englisch): Productivity, Efficiency and Risk (Limited Places) (Seminar, 4 SWS)

Sauer J [L], Vrachioli M

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

MGT001314: Advanced Seminar Economics, Policy & Econometrics: Advanced Resource Economics | Advanced Seminar Economics, Policy & Econometrics: Advanced Resource Economics

Version of module description: Gültig ab winterterm 2021/22

Module Level: Master	Language: English	Duration: one semester	Frequency: summer semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

Coursework will be based on reading and discussing selected scientific papers. In addition academic elaboration and research on a specific topic related to the seminar's overall theme will be used.

Students will be required

- (i) to summarize the key insights on one of the seminar topics by a written essay (seminar paper), and to
- (ii) to present their findings in class in a 15-20 minutes presentation.

The course examination will consist of these two parts: (i) written seminar paper, and (ii) oral in-class presentation and discussion.

Repeat Examination:

End of Semester

(Recommended) Prerequisites:

Principles of Economics, Advanced Environmental and Natural Resource Economics

Content:

Economics of market allocation; Externalities and environmental problems; Cost-benefit analysis and environmental decision-making; Climate change economics; Land and water use modelling; Dynamic and spatial optimization; Stated/revealed valuation of natural resources; Theory of optimal extraction of renewable and non-renewable resources; Theory of joint production; Application of game theory to resource management; Optimal growth and green accounting etc.

Intended Learning Outcomes:

Students will study the key concepts in the research field of natural resource economics considering also related concepts and empirical methods. The overall aim is to understand and reflect upon the role of microeconomic analysis and modelling in a natural resource context as well as being able to apply empirical measurement techniques to produce evidence with regard to the efficient use of scarce natural resources at firm and sectoral level and related management and policy implications. The seminar uses advanced original economic and empirical research articles for illustrating these concepts and for deriving fundamental insights and recommendations.

Teaching and Learning Methods:

Students will study selected academic articles related to the assigned topics. Students will be coached by the instructor(s) and perform their own in-depth research of related material, methods and data. Students will identify key research questions, methodological approach, required datasets and derived results and recommendations. Hence, a key objective is to enable students to acquire the ability to comprehend and reflect scientific work in related areas as well as communicate and effectively work in teams.

Media:

Lectures. Seminar presentations and discussions.

Reading List:

Tietenberg T. and Lewis L. (2018). Environmental and Natural Resource Economics, 11th ed. Routledge; Angrist J. and Pischke J. (2014). Mastering 'Metrics: The Path from Cause to Effect. Princeton University Press; Dinar A. and Schwabe, K. (2015). Handbook of Water Economics, Books, Edward Elgar Publishing; Journal articles (i.e. Journal of Environmental Economics and Management (JEEM), Journal of the Association of Environmental and Resource Economists (JAERE), Review of Environmental Economics and Policy (REEP), Environmental and Resource Economics (ERE); Resource and Energy Economics (REE) etc.)

Responsible for Module:

Sauer, Johannes; Prof. Dr. agr.

Courses (Type of course, Weekly hours per semester), Instructor:

Advanced Seminar Economics & Policy (MGT001314, englisch): Advanced Resource Economics (Limited places) (Seminar, 4 SWS)

Vrachiol M

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

MGT001315: European Business Law | European Business Law [EBL]

Version of module description: Gültig ab summerterm 2023

Module Level: Master	Language: English	Duration: one semester	Frequency: winter semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

In the final assessment students will need to demonstrate to what extent they have met the Learning Objectives. This assessment will be held as a written exam of 60 minutes.

In this exam students will be asked theoretical questions. This will demonstrate to what extent they have memorised and understood principles of EU law. Students will also be asked to apply their knowledge to known and fictional cases. This second part demonstrates if students have developed the required legal analytical skills, as well as the ability to apply their knowledge to fact settings not discussed in the lecture and to evaluate the legal consequences.

Repeat Examination:

Next semester

(Recommended) Prerequisites:

None

Content:

This module provides an overview of the laws of the European Union that are relevant for national and international businesses.

Topics covered are the institutional framework of the EU, the relationship between the EU and national law, the concept of internal market & 5 freedoms, trade law, EU competition law, and EU IP & licensing agreements.

Intended Learning Outcomes:

At the end of this course students will be able (1.) to name and understand the rules and principles of EU law which are most important for businesses, (2.) to grasp and explain the framework of EU economic policies, in particular the interaction between EU law and member state law, (3.)

to identify and analyse restraints prescribed by EU law from the perspective of businesses and employees, (4.) to assess real life scenarios regarding their EU law implications and to present the results of their analyses in a written memorandum.

Teaching and Learning Methods:

The lecture will cover the theoretical aspects of the module in a discussion with the lecturer. It will also provide the opportunity to work individually or in groups on case scenarios covering issues EU law. The purpose is to repeat and to intensify the content discussed in the lecture and to review and evaluate legal issues. This application facilitates the students' abilities to present their findings in writing.

Media:

Presentations (PPT), Reader, Case studies (including model answers)

Reading List:

Chalmers, Davies & Monti, European Union Law, 3rd edition 2018, Cambridge University Press.

Responsible for Module:

Ann, Christoph; Prof. Dr.

Courses (Type of course, Weekly hours per semester), Instructor:

European Business Law - Exercise (MGT001315, englisch) (Übung, 2 SWS)

Dubov B, Duque Lizarralde M

European Business Law (MGT001315, englisch) (Vorlesung, 2 SWS)

Dubov B, Duque Lizarralde M

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

MGT001317: World Trade Law | World Trade Law [WTO]

Version of module description: Gültig ab summerterm 2023

Module Level: Master	Language: English	Duration: one semester	Frequency: winter semester
Credits:* 6	Total Hours: 90	Self-study Hours: 60	Contact Hours: 30

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

In the final assessment students will need to demonstrate to what extent they have met the Learning Objectives. This assessment will be held as a written exam of 60 minutes.

Students will be asked theoretical questions. This will demonstrate to what extent they have memorised and understood principles of World Trade Law.

Students will also be asked to apply their knowledge to known and fictional cases. This demonstrates if students have developed the required legal analytical skills. Students also need to demonstrate their ability to apply their knowledge to fact settings not discussed in the lecture, and to evaluate the legal consequences.

Repeat Examination:

Next semester

(Recommended) Prerequisites:

Basics in the application of law

Content:

The World Trade Law is of central importance for the global exchange of goods and services. It is determined by international organizations (World Trade Organization WTO, International Monetary Fund IMF, World Bank) and international treaties (GATT, GATS, TRIPS, free trade agreements). The WTO pursues the objective of removing trade barriers and import restrictions and creating uniform rules for trade in goods and services as well as for the observance of intellectual property rights and dispute settlement proceedings.

Topics to be discussed:

- Organization of WTO
- General Agreement on Tariffs and Trade (GATT)
- Agreement on Technical Barriers to Trade (TBT)

- Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)
- Dispute Settlement Understanding (DSU)

Intended Learning Outcomes:

At the end of this module students will be able

- (1.) to understand the basic structure of WTO and the international contracts GATT, GATS, Trips and DSU
- (2.) to grasp the legal framework of business activity in global exchange of goods and services,
- (3.) to analyse legal implications of typical business situations and to identify their options,
- (4.) to present the results of their analysis in a written memorandum.

Teaching and Learning Methods:

The lecture will cover the theoretical aspects of the module in a discussion with the lecturer. It will also provide the opportunity to work individually or in groups on case scenarios (known and unknown), covering issues of global exchange of goods. The purpose is to repeat and to intensify the content discussed in the lecture and to review and evaluate legal issues. Students will develop the ability to present these findings in a concise and well-structured written analysis.

Media:

Lecture, PowerPoint, exercise sheets, exercise portfolio (in Moodle)

Reading List:

Benthlehem, van Damme, McRae & Neufeld, The Oxford Handbook of International Trade Law, 2009, Oxford University Press

Van den Bossche & Zdouc, The Law and Policy of the World Trade Organisation, 4th edition 2017, Cambridge University Press

Responsible for Module:

Ann, Christoph; Prof. Dr.

Courses (Type of course, Weekly hours per semester), Instructor:

World Trade Law - Exercise (MGT001317, englisch) (Übung, 2 SWS)

Bliesze L

World Trade Law (WTO) (MGT001317, englisch) (Vorlesung, 2 SWS)

Bliesze L

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

MGT001320: Advanced Seminar Economics, Policy & Econometrics: Economics of Digital Platforms | Advanced Seminar Economics, Policy & Econometrics: Economics of Digital Platforms

Version of module description: Gültig ab winterterm 2021/22

Module Level: Master	Language: English	Duration: one semester	Frequency: summer semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

The coursework involves reading scientific papers and further academic elaboration and research on a specific topic related to the seminar's overall theme.

The students will be asked to

- (i) summarize the key insights on one of the seminar topics in a written essay (seminar paper), and to
- (ii) present their finding in class in a 30-minutes presentation, followed by 15 minutes of audience discussion.

The examination will consist of these two parts: (i) the written seminar paper, and (ii) the oral in-class presentation. Active classroom participation is expected during the entire course of the seminar.

In addition, students are expected to attend at least one meeting with the instructor. They should present the progress made working on their assigned topic until that point, including but not limited to a sketch of the outlines of their paper and presentation and a summary of the main learnings they have identified.

Repeat Examination:

End of Semester

(Recommended) Prerequisites:

Principles of Economics (for Master in Management)

Content:

This seminar will cover key topics within the Economics of Digital Platforms, such as:

Topic area 1: Tools to Create Network Effects: Ratings, Recommendations, and the Use of Big Data

Topic area 2: Pricing Strategies of Platforms

Topic area 3: Drivers of Platform Expansion

Topic area 4: Platform Design: Nonprice Strategies, Behavioral Biases, Governance

Topic area 5: Competition between platforms: compatibility decisions, multi-homing, mergers, and innovation incentives

Intended Learning Outcomes:

Students will learn the key concepts in the research field of Economics of Digital Platforms. The goal is to understand and reflect upon the functioning of digital markets and where and how these may differ from more traditional markets analyzed in introductory courses. This course covers the driving forces behind platform businesses with a focus on network effects. The course builds on original research on this topic as well as case studies and real-world applications to explain key concepts such as how platforms manage network effects and which price and non-price strategies they choose. In addition, students will be able to analyze how platform behavior affects economic welfare and what challenges may result for economic policy.

Teaching and Learning Methods:

Students will self-study selected articles related to the assigned topic and will be coached throughout the semester by an instructor. A key learning objective is the ability to read, understand and reflect upon scientific articles on the seminar topic. Students will research reference materials, identify potential gaps in the academic literature and public understanding of the focal topic, and learn to derive policy suggestions based on the scientific evidence.

A further learning objective is the communication of the key insights to the seminar group, i.e., to other students. Students are encouraged to form and work in groups (most likely of two, depending on class size).

Media:

Teaching will be in the form of a lecture and seminar presentations.

Reading List:

Core text book: Belleflamme and Peitz (2021). *The Economics of Platforms: Concepts and Strategy*. Cambridge University Press.

Chapters 20-23 from: Belleflamme and Peitz (2015). *Industrial Organization: Markets & Strategies* (2nd ed.). Cambridge University Press.

These texts will be supplemented by selected academic articles. Students are expected to perform their own search for relevant articles, with guidance provided by the instructors.

Responsible for Module:

Hottenrott, Hanna; Prof. Dr.

Courses (Type of course, Weekly hours per semester), Instructor:

Advanced Seminar Economics, Policy & Econometrics (MGT001320, englisch): Economics of Digital Platforms (Limited places) (Seminar, 4 SWS)

Angenendt D, Hottenrott H

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

MGT001321: Advanced Seminar Economics, Policy & Econometrics: Politics of Innovation & Technology | Advanced Seminar Economics, Policy & Econometrics: Politics of Innovation & Technology

Version of module description: Gültig ab winterterm 2021/22

Module Level: Master	Language: English	Duration: one semester	Frequency: summer semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

The coursework involves reading of scientific papers and further academic elaboration and research on a specific topic related to the seminar's overall theme.

The students will be asked to

- (i) summarize the key insights on one of the seminar topics in a written essay (seminar paper), and to
- (ii) present their finding in class in a 30 minutes presentation.

The examination will consist of these two parts: (i) written seminar paper, and (ii) oral in-class presentation. Active class room participation is expected during the entire course of the seminar.

Repeat Examination:

End of Semester

(Recommended) Prerequisites:

Principles of Economics

Content:

Promoting innovation has been identified as an important means to drive economic growth and, more recently, to address societal challenges through mission-oriented policies. Yet, international comparisons show that countries haven't been equally successful in fostering innovation. This course therefore focuses on exploring differences in national innovation systems and identifying recent trends in innovation and technology policies. Key topics that will be covered include:

- differences in innovation performance in cross-country comparison and their political determinants
- case studies of national innovation systems

- the European Union's innovation and technology policy
- recent concepts of innovation policy such as mission orientation and their application

Intended Learning Outcomes:

Students will learn key concepts in the research field of innovation policy. The goal is to understand and reflect upon the role of governments and political actors for stimulating or hampering innovation as well as current concepts of innovation and technology policy. The seminar uses advanced original research articles from Economics, Political Science and Innovation Studies for illustrating these concepts and for deriving fundamental insights.

Teaching and Learning Methods:

Students will self-study selected articles related to the assigned topic and will be coached throughout the semester by the instructor. A key learning objective is the ability to read, understand and reflect upon scientific articles on the seminar topic. Students will perform their own research of reference materials, define a specific research question for their seminar paper, identify potential gaps in the academic literature and public understanding of the focal topic, and learn to derive policy suggestions based on the scientific evidence.

A further learning objective is the communication of the key insights to the seminar group, i.e. to other students. Students are encouraged to form groups and work in groups.

Media:

Teaching will be in the form of a lecture and seminar presentations.

Reading List:

Core readings:

Taylor, Marc Zachory (2016): The Politics of Innovation: Why Some Countries Are Better Than Others at Science and Technology. Oxford: Oxford University Press.

Mazzucato, Mariana (2021): Mission Economy: A Moonshot Guide to Changing Capitalism. Dublin: Allen Lane.

Responsible for Module:

Hottenrott, Hanna; Prof. Dr.

Courses (Type of course, Weekly hours per semester), Instructor:

Advanced Seminar Economics, Policy & Econometrics (MGT001321, englisch): Politics of Innovation & Technology (Limited places) (Seminar, 4 SWS)

Hottenrott H, Bartscherer F

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

MGT001337: Process tracing: Methods and applications | Process tracing: Methods and applications

Version of module description: Gültig ab winterterm 2021/22

Module Level: Master	Language: English	Duration: one semester	Frequency: summer semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

The coursework requirements encompass reading and preparing the weekly reading assignments; in addition, each student will give a presentation (30-45 minutes; individually or in teams of two), that is also the basis for the grade.

Repeat Examination:

Next semester

(Recommended) Prerequisites:

none

Content:

To examine the psychological processes underlying decision making, several process-tracing methods have been developed—such as information boards, eye tracking, verbal protocols, skin conductance measurement, and functional neuroimaging. The methods allow researchers to track people's predecisional information search and information processing, and to measure attentional processes and emotional reactions. This module gives an overview of existing process-tracing methods and discusses applications of the methods. In addition, we will discuss the use of process data for developing and testing cognitive process models of behavior.

Intended Learning Outcomes:

At the end of the module, students have knowledge of existing process-tracing methods and their functionality. Students also know which process-tracing method is most appropriate for a given research question, which process measures can be collected with the methods, and how to interpret the measures. In addition, the students are familiar with the criticisms and limitations of the various process-tracing methods. Finally, they know exemplary cases illustrating how process

data can be used to develop behavioral interventions—for instance, to improve people's decision making.

Teaching and Learning Methods:

In short presentations, the students present empirical articles that illustrate applications of the various process-tracing methods. The module also involves small-group exercises, in which students develop experimental study designs with the process-tracing methods and get some hands-on experience operating them.

Media:

Reading List:

Schulte-Mecklenbeck, M., Johnson, J. G., Böckenholt, U., Goldstein, D. G., Russo, J. E., Sullivan, N. J., & Willemsen, M. C. (2017). Process-tracing methods in decision making: On growing up in the 70s. *Current Directions in Psychological Science*, 26(5), 442–450.

Schulte-Mecklenbeck, M., Kühberger, A., & Johnson, J. G. (Eds.). (2019). *A handbook of process tracing methods*. Routledge.

Responsible for Module:

Pachur, Thorsten; Prof. Dr. phil.

Courses (Type of course, Weekly hours per semester), Instructor:

Process tracing: Methods and applications - Seminar & Exercise (MGT001337, englisch) (Limited places) (Seminar, 4 SWS)

Pachur T

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

MGT001338: Open Science: Toward Robust Behavioral Research | Open Science: Toward Robust Behavioral Research

Version of module description: Gültig ab winterterm 2024/25

Module Level: Master	Language: English	Duration: one semester	Frequency: summer semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

The coursework requirements include preparing the weekly reading assignments including at least 2 discussion question. In addition, each student will give a presentation (30-40 minutes; individually or in teams of two) on a scientific empirical article; the presentation is the basis for the grade. The presentation will be graded in terms of structure, clarity, and accuracy and also in terms of the student's ability to critically reflect the presented research, integrate it within the research field in general, and elaborate on its applied relevance.

Repeat Examination:

End of Semester

(Recommended) Prerequisites:

none

Content:

The current replication crisis that has shaken several disciplines in the behavioral sciences raises many important questions about current research and publication practices. In this module, we discuss the history and possible causes of the replication crisis and get to know recent methodological developments and proposals towards a more reliable, robust, and transparent science (e.g., Bayesian data analysis, replication research, preregistration, open data).

Intended Learning Outcomes:

At the end of the module, the students will understand which research practices have contributed to the replication crisis (e.g., p-hacking, HARKing, underpowered studies, publication bias). The students will be able to set up a preregistered study, implement practices of open science (e.g., open data, open analysis code) and know about approaches in data analysis (e.g., Bayesian statistics) that promise greater robustness in statistical inference.

Teaching and Learning Methods:

There will be presentations in which students present empirical investigations and analyses that have shaped the recent discussion on the replicability of behavioral research. In group discussions, the students will analyze seminal empirical articles and discuss methods for improving the robustness, replicability, and transparency of empirical research. In small-group exercises, students will get hands-on experience with drafting a preregistration document and preparing a repository for making data and analysis code publicly available.

Media:

<https://www.youtube.com/watch?v=vBzEGSm23y8>;

Reading List:

Nelson, L. D., Simmons, J., & Simonsohn, U. (2018). Psychology's renaissance. *Annual Review of Psychology*, 69, 511–534.

Ritchie, S. J. (2020). *Science fictions: Exposing fraud, bias, negligence and hype in science*. London: The Bodley Head.

A Brief overview video on the replication crisis: <https://www.youtube.com/watch?v=vBzEGSm23y8>

Responsible for Module:

Pachur, Thorsten; Prof. Dr. phil.

Courses (Type of course, Weekly hours per semester), Instructor:

Open Science: Best Practices in Empirical Research - Seminar & Exercise (MGT001338, englisch) (Limited places) (Seminar, 4 SWS)

Pachur T

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

MGT001344: Advanced Seminar Economics, Policy & Econometrics: Food Governance, Fairness and Sustainability Literature Review and Presentation Skills | Advanced Seminar Economics, Policy & Econometrics: Food Governance, Fairness and Sustainability Literature Review and Presentation Skills

Version of module description: Gültig ab summerterm 2022

Module Level: Master	Language: English	Duration: one semester	Frequency: summer semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

Grading will be based on a written report (consisting of a literature review) and an oral presentation (20 min) with subsequent discussion, both with an individual and a teamwork component. Both the literature review and the oral presentation are worth 50% of the grade. The literature review and the oral presentation will verify that students can conduct in-depth research and present their results to a wider audience. They will also confirm that they are prepared for their Master Thesis.

Repeat Examination:

Next semester

(Recommended) Prerequisites:

Knowledge in microeconomics

Content:

The module deals with issues of governance, fairness and sustainability in the food system.

Key topics of the module may thereby include:

- Locks-ins and levers for facilitating a transitions toward more sustainable food systems;
- Food labels (origin-based labels, animal welfare labels);
- Food quality standards;
- Potential paths for a transition to more sustainable food systems
- Private and public governance in food sectors
- Fairness in business relationships
- European and national regulations and policies concerning the food sector

From a methodological point of view, the focus of this module is on

- Exploratory and Qualitative research methods
- Scientific writing skills

Intended Learning Outcomes:

After successful completion of this module, students will have in-depth knowledge on how to analyze the scientific literature and present a scientific paper on the governance, fairness and sustainability in agro-food systems. Moreover, students will be able i) procure and screen relevant literature, ii) conduct a systematic review of the scientific literature; iii) present scientific findings in front of their peers and v) entering and moderating a scientific discussion on their topic. The module thereby prepares students for the scientific work to be conducted in their master theses.

Teaching and Learning Methods:

The module is a seminar and provides students with in-depth knowledge of governance, fairness and sustainability grounded in economic theory. The seminar includes a set of lectures on selected topics concerning the governance, fairness and sustainability of food system.

Guided by the instructor(s) through the entire process, students will work alone and/or in groups around a topic in governance, fairness and/or sustainability.

Activities are carried out in parallel and in coordination with one or more foreign universities and students will have the opportunity to collaborate and exchange with students from those universities. The course hence takes place online.

Together with "Advanced Seminar Economics & Policy/Life Sciences & Management – Food system governance, fairness and sustainability, Scientific Writing and Exploratory Research Methods", this module offers a comprehensive toolkit to prepare students for their master thesis as well as for a career in science.

Media:

PowerPoint presentations, economic textbooks, scientific articles

Reading List:

Barrett, Christopher B. (2021): Overcoming Global Food Security Challenges through Science and Solidarity. In American Journal of Agricultural Economics 103 (2), pp. 422–447. DOI: 10.1111/ajae.12160.

Béné, Christophe; Fanzo, Jessica; Prager, Steven D.; Achicanoy, Harold A.; Mapes, Brendan R.; Alvarez Toro, Patricia; Bonilla Cedrez, Camila (2020): Global drivers of food system (un)sustainability: A multi-country correlation analysis. In PLoS one 15 (4), e0231071. DOI: 10.1371/journal.pone.0231071.

Bowie, N. E. (1988). Fair markets. Journal of Business Ethics, 7(1-2), 89-98.

Christopher B. Barrett, Thomas Reardon, Johan Swinnen and David Zilberman (2020): Agri-food Value Chain Revolutions in Low-and Middle-Income Countries. In Journal of Economic Literature, Clapp, Jennifer (2018): Mega-Mergers on the Menu: Corporate Concentration and the Politics of Sustainability in the Global Food System. In Global Environmental Politics 18 (2), pp. 12–33. DOI: 10.1162/glep_a_00454.

Giuliano Martiniello and Ricardo Azambuja: Contracting Sugarcane Farming in Global Agricultural Value Chains in Eastern Africa: Debates, Dynamics, and Struggles.

- Glavee-Geo, Richard; Engelseth, Per; Buvik, Arnt (2021): Power Imbalance and the Dark Side of the Captive Agri-food Supplier-Buyer Relationship. In *Journal of business ethics* : JBE, pp. 1–20. DOI: 10.1007/s10551-021-04791-7.
- Gudbrandsdottir, Ingunn Y.; Olafsdottir, Gudrun; Oddsson, Gudmundur Valur; Stefansson, Hlynur; Bogason, Sigurdur G. (2021): Operationalization of Interorganizational Fairness in Food Systems: From a Social Construct to Quantitative Indicators. In *Agriculture* 11 (1), p. 36. DOI: 10.3390/agriculture11010036.
- Hamann, Steffi (2020): The global food system, agro-industrialization and governance: alternative conceptions for sub-Saharan Africa. In *Globalizations* 17 (8), pp. 1405–1420. DOI: 10.1080/14747731.2020.1730050.
- Koen Deconinck (2019): New evidence on concentration in seed markets. In *Global Food Security* 23, pp. 135–138.
- Singh, Sukhpal (2019): The Export Value Chain of Baby Corn in India: Governance, Inclusion and Upgrading. In *Agrarian South: Journal of Political Economy* 8 ((1–2)), pp. 172–207.
- Thompson, Merisa S.; Cochrane, Alasdair; Hopma, Justa (2020): Democratising food: The case for a deliberative approach. In *Rev. Int. Stud.* 46 (4), pp. 435–455. DOI: 10.1017/S0260210520000017.
- Wood, Benjamin; Williams, Owain; Nagarajan, Vijaya; Sacks, Gary (2021): Market strategies used by processed food manufacturers to increase and consolidate their power: a systematic review and document analysis. In *Globalization and health* 17 (1), p. 17. DOI: 10.1186/s12992-021-00667-7.
- Hansman, Christopher; Hjort, Jonas; León, Gianmarco; Teachout, Matthieu (2017): Vertical Integration, Supplier Behavior, and Quality Upgrading among Exporters. Cambridge, MA.
- Burchardi, Konrad B.; Gulesci, Selim; Lerva, Benedetta; Sulaiman, Munshi (2019): Moral Hazard: Experimental Evidence from Tenancy Contracts*. In *The Quarterly Journal of Economics* 134 (1), pp. 281–347. DOI: 10.1093/qje/qjy023.

Responsible for Module:

Menapace, Luisa; Prof. Ph.D.

Courses (Type of course, Weekly hours per semester), Instructor:

Advanced Seminar Economics, Policy & Econometrics /Life Sciences, Management & Policy (MGT001344, englisch): Food Governance, Fairness and Sustainability Literature Review and Presentation Skills (Seminar, 4 SWS)

Menapace L

For further information in this module, please click campus.tum.de or [here](#).

Module Description

MGT001345: Advanced Seminar Economics, Policy & Econometrics: Food Governance, Fairness and Sustainability Scientific Writing and Exploratory Research Methods | Advanced Seminar Economics, Policy & Econometrics: Food Governance, Fairness and Sustainability Scientific Writing and Exploratory Research Methods

Version of module description: Gültig ab summerterm 2022

Module Level: Master	Language: English	Duration: one semester	Frequency: winter semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

Grading will be based on a written report (consisting of a research protocol and related research findings) and an oral presentation (20 min) with subsequent discussion, both with an individual and a teamwork component. Both the written report and the oral presentation are worth 50% of the grade. The report and the oral presentation will demonstrate that students have gained in-depth knowledge on how to conceptualize, plan and conduct a research project. It will thus show that students are prepared to write their Master Thesis.

Repeat Examination:

Next semester

(Recommended) Prerequisites:

Knowledge in microeconomics

Content:

The module deals with issues of governance, fairness and sustainability in the food system.

Key topics of the module may thereby include:

- Locks-ins and levers for facilitating a transitions toward more sustainable food systems;
- Food labels (origin-based labels, animal welfare labels);
- Food quality standards;
- Potential paths for a transition to more sustainable food systems
- Private and public governance in food sectors
- Fairness in business relationships
- European and national regulations and policies concerning the food sector

From a methodological point of view, the focus of this module is on

- Exploratory and Qualitative research methods
- Scientific writing skills

Intended Learning Outcomes:

After successful completion of this module, students will have in-depth knowledge on how to conceptualize, plan and conduct a research project concerning good governance, fairness and sustainability in agro-food systems. Moreover, students will be able to i) identify and structure a research topic, ii) build a conceptual framework for qualitative research; iii) applying qualitative research methods to a concrete research question; iv) develop a study instrument; v) conduct interviews for qualitative research; draft a scientific research report. The module thereby prepares students for the scientific work to be conducted in their master theses.

Teaching and Learning Methods:

The module is a seminar and provides students with in-depth knowledge of governance, fairness and sustainability grounded in economic theory. The seminar includes a set of lectures on governance, fairness and sustainability.

Guided by the instructor(s) through the entire process, students will work alone and/or in groups around a topic in governance, fairness and/or sustainability.

Activities are carried out in parallel in coordination with foreign universities and students will have the opportunity to collaborate and exchange with students from those universities. The course takes place online.

Together with "Advanced Seminar Economics & Policy/Life Sciences & Management – Food system governance, fairness and sustainability, Literature Review and Presentation Skills", this module offers a comprehensive toolkit to prepare students for their master thesis as well as for a career in science.

Media:

PowerPoint presentations, economic textbooks, scientific articles

Reading List:

Barathova, K., Cacchiarelli, L., Di Fonzo, A., Lai, M., Lee, H., Menapace, L., ... & Vandervelde, S. (2020). Pass-through of unfair trading practices in EU food supply chains: methodology and empirical application.

Bowie, N. E. (1988). Fair markets. *Journal of Business Ethics*, 7(1-2), 89-98.

Denzin Lincoln 2017 The SAGE Handbook of Qualitative Research

Gentile, E., Loi, A., Gentile, M., Bruni, M., Berisio, S., Parisi, P., ... & Rieger, L. (2020). Evaluation of Marketing Standards contained in the CMO Regulation, the "Breakfast Directives" and CMO secondary legislation. Final report.

James, H. S. (Ed.). (2013). The ethics and economics of agrifood competition (p. 99). Dordrecht, Netherlands: Springer.

Kvale 1996 Interviews: An Introduction to Qualitative Research Interviewing

Miles Huberman Saldaña 2014 Qualitative Data Analysis: A Methods Sourcebook

Russo et al. (2021) Upfront Costs as Coordination Devices in the European Agri-Food Value Chain, forthcoming.

Responsible for Module:

Menapace, Luisa; Prof. Ph.D.

Courses (Type of course, Weekly hours per semester), Instructor:

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

MGT001368: Models in the study of human behavior | Models in the study of human behavior

Version of module description: Gültig ab summerterm 2022

Module Level: Master	Language: English	Duration: one semester	Frequency: winter semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

Course work and reading assignments (seminar): Each week will be introduced by 1-2 papers that are thought-provoking and non-trivial, yet accessible and relatively short. Students will prepare the readings so that they are able to briefly summarize and discuss the key ideas. Occasionally (3 times), readings are accompanied by a take-home question that students should answer in brief text form (ca. 1 page). All three take-home assignments are graded.

Presentation and discussion (exercise): At the mock conferences, students give a 15 minutes scientific presentation of a high quality publication, followed by a 15 minutes audience discussion. The talk and discussion are graded.

Grading scheme:

30 % reading assignments (3 x 10%)
 50 % mock conference talk (incl. 1 consultation and 1 feedback session)
 20 % mock conference discussion

Repeat Examination:

End of Semester

(Recommended) Prerequisites:

Content:

Formal models (in mathematical or programming language) figure prominently in the natural science (e.g., physics), but less so in the behavioral sciences (e.g., behavioral economics, psychology). The lack of models – particularly of those that attempt to explain the cognitive processes underlying human behavior – led to the emergence of distracting labels and narratives

(e.g., “biases”, “thinking fast and slow”). These distractors are remarkably popular in behavioral sciences as well as in business and society, yet they have done little to advance our understanding of why people behave the way they do. This course shows how modeling is invaluable for gaining genuine insights into human behavior and how it can drive empirical research and real-world applications (e.g., consulting, policy-making). Some state-of-the-art examples are presented by the students in the mock conferences.

Some guiding questions and discussion points are:

- What the behavioral sciences want and where they have gone astray?
- Why the behavioral sciences cannot help but to model?
- What are scientific models of human behavior? What can the behavioral sciences learn from the natural sciences and their models? What not?
- Which role do cognition (e.g., information-processing of the mind/brain) and the environment (e.g., information structures) play in the explanation of human behavior?
- Case studies in decision making under risk and uncertainty (descriptive, predictive, process/cognitive models)
- Relations among and integration of models within and across model classes
- Modeling and the construction, development, and testing of theories about human behavior and cognition
- Real-world applications of models of human behavior and cognition

Intended Learning Outcomes:

Upon completion of the module, students possess profound knowledge about the utility and limitations of formal modeling approaches to the study of human behavior. Specifically, students are familiar with the goals and problems of the behavioral sciences and understand how they can be addressed through formal modeling. They know different model classes – including some state-of-the-art models in decision making – and which research question and inferences they are appropriate for. Based on this knowledge, students are able to interpret and evaluate models in the relevant literature and to make reasonable modeling choices for future research or applied projects. In addition, students improved their ability to effectively communicate the main ideas and results of a published paper or a broader research project in concise scientific talks.

Teaching and Learning Methods:

Seminar sessions comprise of ca. 45 minutes lecture-style talks aiming to complement the readings and convey relevant knowledge about the topic. Each talk is accompanied by group and small-group discussions which can be both prompted by students and the lecturer.

Exercise sessions take the form of mock conferences, i.e., each student will provide a scientific talk (incl. discussion) based on a high quality publication relevant to the topic. As a prelude, the first three sessions are for training, i.e., important aspects of scientific talks are practiced in mini-exercises.

Media:

Reading List:

For an idea of the readings and the topics addressed in this course, you may see:

Example for a seminar paper:

Guest, O., & Martin, A. E. (2021). How computational modeling can force theory building in psychological science. *Perspectives on Psychological Science*, 16(4), 789–802. <https://doi.org/10.1177/1745691620970585>

Example for a mock conference paper:

Zhao, W. J., Coady, A., & Bhatia, S. (2022). Computational mechanisms for context-based behavioral interventions: A large-scale analysis. *Proceedings of the National Academy of Sciences*, 119(15), e2114914119. <https://doi.org/10.1073/pnas.2114914119>

Responsible for Module:

Pachur, Thorsten; Prof. Dr. phil.

Courses (Type of course, Weekly hours per semester), Instructor:

Models of human behavior: Mock conferences (MGT001368, englisch) (Registration via seminar group) (Übung, 2 SWS)

Hof L

Models in the study of human behavior (MGT001368, englisch) (Limited places) (Seminar, 4 SWS)

Hof L

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

MGT001381: Introduction to Bayesian Data Analysis | Introduction to Bayesian Data Analysis

Version of module description: Gültig ab winterterm 2022/23

Module Level: Master	Language: English	Duration: one semester	Frequency: summer semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

Students complete 5 statistical programming assignments over the course of the semester. Each assignment comprises of a set of analysis problems that target one of the core topics of the course (Bayesian updating, Bayesian workflow, Linear models, Generalized linear models, Multilevel models).

Each assignment must be submitted as a Markdown report (pdf), showing text, code, and outputs. Each assignment has a 1 week deadline. All assignments are graded (% correct) and equally weighted for the overall grade (5 x 20%).

Repeat Examination:

Next semester

(Recommended) Prerequisites:

A core pillar of this course are hands-on coding exercises, computations, and statistical analyses using the statistical programming language R and Bayesian statistical software (e.g., Stan).

Previous introductory classes in statistics and experience in programming can make the start feel somewhat easier, however, at the beginning of the course, we'll take enough time to set up your software environments (computers) and learn the principles of programming in R. So, everyone can get started and there are no entry requirements other than bringing your computer and the willingness to troubleshoot and work yourself through the installation process. You'll see, it's worth it.

Content:

In many academic and industry settings, statistics is not the goal but a tool to learn about a system's regularities from data. These regularities reflect dependency relationships and form the basis of human and organizational understanding, planning, and action. While data contains

relevant information about these relationships and forms the basis of learning, it is often complex and vast in amount. We then cannot help but pursue a statistical approach. In this course, you'll learn to learn with the help of Bayesian statistics. Specifically, the course will introduce you to the following topics:

- Setting up a reproducible data analysis workflow with R, Git and GitHub
- Concepts and intuitions behind Bayesian data analysis
- Generative data simulations
- Linear Models
- Generalized Linear Models
- Hierarchical (Multilevel) Modeling

Intended Learning Outcomes:

Upon completion of the module, students will understand the role of statistical modeling in drawing inferences from data, have a basic knowledge of Bayesian statistics, be able to analyze data using Bayesian techniques and statistical software (e.g., R, Stan), and be able to integrate basic software engineering techniques (e.g., version control) into their data analysis workflow.

Teaching and Learning Methods:

The seminar takes the form of a workshop: Each session integrates teacher-led mini-lectures and instructions on the one hand and practical programming and data analysis exercises on the other hand.

Media:

Reading List:

McElreath, R. (2020). Statistical rethinking: A Bayesian course with examples in R and Stan (2nd ed.). Chapman and Hall/CRC. <https://doi.org/10.1201/9780429029608>

Responsible for Module:

Pachur, Thorsten; Prof. Dr. phil.

Courses (Type of course, Weekly hours per semester), Instructor:

Introduction to Bayesian Data Analysis (MGT001381, englisch) (Limited places) (Seminar, 4 SWS)
Hof L

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

MGT001411: Advanced Seminar Economics, Policy & Econometrics: Economics of Taxation | Advanced Seminar Economics, Policy & Econometrics: Economics of Taxation

Version of module description: Gültig ab summerterm 2023

Module Level: Master	Language: English	Duration: one semester	Frequency: winter semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

Seminar participants elaborate a topic in the economics of taxation - either independently or in groups of two or three (depending on the total number of participants). The examination comprises two parts:

- 1) Presentation (1/3 of grade) on the selected topic and a corresponding brief written précis (extensive handout) followed by a discussion
- 2) Written seminar paper (12 pages) (2/3 of grade) on the selected topic

Students should demonstrate their capacity for abstraction (thinking in economic models) and concretization (interpreting and applying the results of the model, deriving recommendations for political action) regarding current topics.

Repeat Examination:

Next semester

(Recommended) Prerequisites:

Participants should be familiar with the fundamental microeconomic analysis. At the TUM School of Management, this is conveyed in the modules WI000021 "Economics I (Microeconomics)" or WI001056_1 "Principles of Economics"

Content:

The module provides insight into important areas of the public economic theory of taxation. This branch of public economics deals with the revenue side of the state and gives an overview over essential concepts of taxation methods and taxation impact theory. What objectives are pursued through taxation? How does taxation affect the income distribution? Who carries the burden of

taxes? How do consumers and producers react to taxation? What are the social costs of taxation? The course imparts institutional knowledge and theoretical analysis skills and applies the gained expertise to current examples from the field of taxation policy.

Intended Learning Outcomes:

After participation, students will be able to explain and present specific topics in the economics of taxation and derive recommendations for political action. Students will be able to

- identify the goals and guiding principles of taxation based on concrete tax scales and systems,
- recognize conflicting goals of taxation (e.g. regarding governance versus revenue goals, or performance incentives versus redistribution goals) and devise compromises to address them,
- understand the impact of duties and tariffs on international trade,
- devise and evaluate political measures to combat tax evasion.

Teaching and Learning Methods:

Seminar participants elaborate a topic in the economics of taxation - either independently or in groups of two or three (depending on the total number of participants). The examination comprises a presentation as well as a seminar paper on the selected topic.

Media:

Reading List:

- Hindriks, J., & Myles, G. D. (2013). Intermediate public economics. MIT press.
- Stiglitz, J. E., & Rosengard, J. K. (2015). Economics of the public sector. WW Norton & Company.

Responsible for Module:

Hottenrott, Hanna; Prof. Dr.

Courses (Type of course, Weekly hours per semester), Instructor:

Advanced Seminar Economics, Policy & Econometrics (MGT001411, englisch): Economics of Taxation (Limited places) (Seminar, 4 SWS)

Feilcke C

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

MGT001412: Sustainability Assessment of Agri-Food Supply Chains | Sustainability Assessment of Agri-Food Supply Chains

Version of module description: Gültig ab summerterm 2023

Module Level: Master	Language: English	Duration: one semester	Frequency: winter semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

The examination format consists of a report (60% of the final grade; based on a LCA exercise; approx. 8-10 pages) supplemented by an oral presentation (40% of the final grade; approx. 20 - 30 minutes), where students will present a scientific study selected from a curated list.

The oral and written examination will assess the students' competency to i) understand and communicate the factors and concepts that define, shape, and quantify the sustainability of agri-food supply chains and ii) identify the challenges and opportunities in the field of sustainability assessment of agri-food supply chains to provide decision support and foster sustainable development.

Repeat Examination:

Next semester

(Recommended) Prerequisites:

Focused on the global challenges of natural resource conservation, ecosystem preservation, climate mitigation, and sustainable food consumption, this seminar is tailored for master students specializing in Sustainable Resource Management, Agrosystem Science, Ecological Engineering (Life Sciences), and Consumer Sciences (Management). However, addressing these challenges necessitates collaboration among several disciplines, and hence this research seminar also extends to master students with other background. Prerequisite is i) a strong interest in gaining knowledge on the factors and concepts underpinning sustainability assessment within agri-food supply chains and ii) to contribute to this interdisciplinary discourse by presenting a scientific study to your fellow students, participate in the group discussion and concisely summarize the key findings in a written report.

Content:

In an increasingly globalized world where the demand for natural resources continues to rise, the sustainability of food and agricultural supply chains has emerged as a critical concern, playing a pivotal role in achieving numerous Sustainable Development Goals. By comprehending and assessing the hotspots and drivers that impact the sustainability of agri-food supply chains, collaborative efforts between the scientific community, industry, and policymakers can effectively address the sustainability of agri-food systems, thereby advancing the SDGs. As a future graduate of TUM, you have the opportunity to contribute to this endeavor by: i) gaining foundational knowledge of the factors and concepts within the realm of sustainability assessment of agri-food supply chains ii) developing the ability to communicate this knowledge to a multidisciplinary audience for providing sustainable decision support. Through case studies at global and national levels, this seminar will familiarize you with the knowledge and quantitative methods necessary to gain a holistic understanding of the challenges and opportunities in promoting sustainable agri-food supply chains.

Intended Learning Outcomes:

After successfully completing this module, students will be able to articulate the factors and concepts that define, shape, and quantify the sustainability of agri-food supply chains to a multidisciplinary audience. In particular, students will acquire the ability to explain how:

- a) agri-food systems affect sustainability by identifying the hotspots, drivers and levers in the global supply chain.
- b) to assess sustainability of agri-food supply chains with quantitative methods including top-down and bottom-up life-cycle assessment, regionalized impact assessment methods, scenario modelling, and remote sensing.
- c) to utilize the knowledge from a) and b) to provide sustainable decision-support for industry, policy and society, illustrated by case studies at global and national scales.

Teaching and Learning Methods:

Following an introduction on the factors and methodologies that delineate, influence, and measure the sustainability of agri-food supply chains, students will engage with these concepts by:

- Presenting a scientific study selected from a curated list to your fellow colleagues to foster a deeper understanding of real-world applications and challenges within the realm of sustainability assessment of agri-food supply chains.
- Active participation in group discussions that encourage critical thinking and the exchange of diverse perspectives to provide a dynamic platform for exploring the multifaceted aspects of sustainability within agri-food supply chains.
- Crafting a concise yet comprehensive summary on the challenges and opportunities intrinsic to the field of sustainability assessment for agri-food supply chains, allowing you to distill key insights and reflect on the broader implications in view of the SDGs.

Media:

Lecture inputs (in hybrid form), exercises with a semi-automated LCA software (based on matlab and tableau), student presentations + discussion.

Reading List:

- Alexander, P., Brown, C., Arneth, A., Finnigan, J., Moran, D., & Rounsevell, M. D. (2017). Losses, inefficiencies and waste in the global food system. *Agricultural systems*, 153, 190-200.
- Cabernard, L., Pfister, S., Oberschelp, C., & Hellweg, S. (2022). Growing environmental footprint of plastics driven by coal combustion. *Nature Sustainability*, 5(2), 139-148.
- Camilleri, A. R., Lerrick, R. P., Hossain, S., & Patino-Echeverri, D. (2019). Consumers underestimate the emissions associated with food but are aided by labels. *Nature Climate Change*, 9(1), 53-58.
- Chaudhary, A., Verones, F., De Baan, L., & Hellweg, S. (2015). Quantifying land use impacts on biodiversity: combining species-area models and vulnerability indicators. *Environmental science & technology*, 49(16), 9987-9995.
- Cucurachi, S., Scherer, L., Guinée, J., & Tukker, A. (2019). Life cycle assessment of food systems. *One Earth*, 1(3), 292-297.
- de Adelhart Toorop, R., Yates, J., Watkins, M., Bernard, J., & de Groot Ruiz, A. (2021). Methodologies for true cost accounting in the food sector. *Nature Food*, 2(9), 655-663.
- Hellweg, S., & Milà i Canals, L. (2014). Emerging approaches, challenges and opportunities in life cycle assessment. *Science*, 344(6188), 1109-1113.

Responsible for Module:

Cabernard, Livia; Prof. Dr.sc. ETH Zürich

Courses (Type of course, Weekly hours per semester), Instructor:

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

MGT001422: Advanced Seminar Economics, Policy & Econometrics: Quantitative Economic Research | Advanced Seminar Economics, Policy & Econometrics: Quantitative Economic Research

Version of module description: Gültig ab winterterm 2023/24

Module Level: Master	Language: English	Duration: one semester	Frequency: summer semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

Seminar paper (50% of final grade; approx. 10 pages): students learn to read and understand empirical research, understand econometric methods that were used, their assumptions and limitations, replicate empirical results using a statistical programming language, and interpret the results;

Presentation (50% of final grade; approx. 15 minutes presentation plus participation in the discussions during the seminar): students learn to explain sophisticated research methods and present own empirical results in front of others;

Repeat Examination:

Next semester

(Recommended) Prerequisites:

The prerequisite courses include Empirical Research Methods or equivalent.

Content:

'This modul prepares students for empirical research (e.g. for their Master's Thesis). We discuss the following topics:

1. Main Concepts in Econometrics and Asymptotic Analysis
2. Estimators for cross-sectional data, repeated cross-sections, and panel-data
3. Interpretation and limitation of estimators

Intended Learning Outcomes:

At the end of this seminar, students will be able to

- understand empirical economic papers and the application of econometric methods such as OLS, 2SLS, Diff-In-Diff, Double-Machine-Learning
- understand the technical conditions and assumptions of these models
- assess the limitations of these approaches in real applications
- interpret the econometric results in a meaningful way

Teaching and Learning Methods:

The module consists of lectures and integrated exercises. The lectures review the most important econometric methods that students learned in previous courses. The exercises contain an introduction into the statistical package R and students learn how to apply econometric methods on replication data.

Media:

Reading List:

Individual papers to choose from will be announced during the kick-off meeting.

Recommended books:

Cunningham Scott: Causal Inference - The Mixtape

Available at <https://mixtape.scunning.com/>

Hansen Bruce: Econometrics

available at the TUM library

Huber Martin: Causal Analysis - Impact Evaluation and Causal Machine Learning with Applications in R

Available at the TUM library

Responsible for Module:

Farbmacher, Helmut; Prof. Dr.

Courses (Type of course, Weekly hours per semester), Instructor:

Advanced Seminar Economics, Policy & Econometrics (MGT001422, englisch): Quantitative Economic Research (Limited Places) (Seminar, 4 SWS)

Farbmacher H, Mühlegger M, Terschuur J, Vollert G

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

MGT001430: Advanced Seminar Economics, Policy & Econometrics: Economics and Everyday Life: Experiments on Beliefs, Social Norms and Discrimination | Advanced Seminar Economics, Policy & Econometrics: Economics and Everyday Life: Experiments on Beliefs, Social Norms and Discrimination

Version of module description: Gültig ab winterterm 2023/24

Module Level: Master	Language: English	Duration: one semester	Frequency: summer semester
Credits:* 6	Total Hours: 180	Self-study Hours: 165	Contact Hours: 15

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

After an introduction to experimental economics, students work on a current scientific paper and present it to their peers so that the method and the most important contributions can be discussed afterward (85% of the overall grade). In addition, the students deal with a research paper presented by one of their fellow students. Following the presentation of this paper, students begin a critical discussion of the presentation/paper (15% of the overall grade).

The presentation lasts 20 minutes, followed by a 10-minute discussion. Active class room participation is expected during the entire course of the seminar.

The proposed method provides a holistic assessment of students' comprehension, communication skills, and ability to engage in meaningful discourse, which is essential for higher education and professional development.

Repeat Examination:

Next semester

(Recommended) Prerequisites:

none

Content:

The seminar comprises three main segments: initially, students are introduced to the fundamental methodology of experimental economics by an instructor. In the second phase, students independently work on a selected research paper, with periodic meetings available for assistance.

The final phase involves presenting their paper to peers and starting the discussion in one of the presentations of their a student.

Topics covered in part one:

Topic 1: Introduction to the methodology of experimental economics (study design)

Topic 2: Introduction to basic econometrics for experimental designs

Topic 3: Introduction to the selected topics (beliefs, social norms, discrimination)

Selected broad fields covered in student presentation:

Area 1: Beliefs about inequality (and preferences for redistribution)

Area 2: Social and gener norms

Area 3: (Racial) discrimination

Intended Learning Outcomes:

Students are introduced to the fundamentals of experimental behavioral science. In addition to the topics discussed, the focus is on the applied methodology and the underlying models. After successful participation, students will be able to critically analyze experimental research in behavioral science, understand the most important concepts and results, and explain them. They will be able to describe the methodology and design of experimental studies, as well as the statistical analyses. They will be able to apply theoretical knowledge and concepts to practical examples. They can express their thoughts, findings, and criticisms clearly and concisely.

Teaching and Learning Methods:

Seminar: Students will process a current research paper and deliver a presentation to their classmates at the end of the semester. Additionally, they will critically discuss one research paper presented by one of their peers.

There are several arguments why the presentation of a research paper, and the discussion of another are effective methods for assessing students' understanding of the main concepts of those papers:

It requires students to actively engage with the material, synthesizing information and conveying it to their peers and encourages them to actively listen and respond to them, fostering a dynamic and interactive learning environment. A presentation demands a thorough understanding of the entire research paper. It assesses students' ability to articulate complex concepts clearly and concisely, and the discussion thereof evaluates their capacity to express thoughtful insights and engage in constructive dialogue. The proposed method facilitates knowledge-sharing among peers, allowing students to learn from each other's perspectives and interpretations and can benefit from diverse viewpoints and insights of others. Finally, a presentation allows for immediate feedback, enabling students to address misconceptions promptly and refine their understanding.

In conclusion, the proposed method provides a holistic assessment of students' comprehension, communication skills, and ability to engage in meaningful discourse, which is essential for higher education and professional development. There is no written elaboration of the research

paper because assessing the genuine comprehension of a research paper is significantly more challenging with the assistance of the highly advanced artificial intelligence currently available.

Media:

PowerPoint

Reading List:

Haaland, I., Roth, C., & Wohlfart, J. (2023). Designing information provision experiments. *Journal of economic literature*, 61(1), 3-40.

Smith, V. L. (1982). Microeconomic systems as an experimental science. *The American economic review*, 72(5), 923-955.

Responsible for Module:

Hottenrott, Hanna; Prof. Dr.

Courses (Type of course, Weekly hours per semester), Instructor:

Advanced Seminar Economics, Policy & Econometrics (MGT001430, englisch): Economics and Everyday Life: Experiments on Beliefs, Social Norms and Discrimination (Limited places) (Seminar, 4 SWS)

Hottenrott H [L], Rittmannsberger T

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

MGT001437: Programming in Python for Business and Life Science Analytics | Programming in Python for Business and Life Science Analytics

Version of module description: Gültig ab winterterm 2023/24

Module Level: Master	Language: English	Duration: one semester	Frequency: summer semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

This seminar is assessed by Project Work. Students have the option to either work with the real-life analysis examples we provide, such as cost optimization for a company, or choose topics related to business or life sciences that interest them for data collection, analysis, and enhancement. The project work consists of a project report and a supplementary short presentation (shorter than 15 minutes) in week 8, in which each group must present their project's initiation, problem definition, and role distribution (10% of the overall grade).

The project report is divided into two parts, with each group having to submit a group report at the end of the semester (Part A = 50% of the overall grade), together with the code developed during the project (20% of the overall grade). The group report is a maximum of 3,000 words (excluding appendices and references). Each student also submits an individual report of 500 words summarizing their contribution to the group work, their reflections, and possible areas for improvement (Part B = 20% of the overall grade).

Repeat Examination:

Next semester

(Recommended) Prerequisites:

Students should bring their own laptop to the seminar. Practical experience in programming of any language would be advantageous but not a must.

Content:

The aim of this seminar is to introduce students to the fundamentals of Python, a general-purpose programming language widely used in the application of Life Science Analytics and Business Analytics. The seminar will provide the skills for implementing your own algorithms as well as using the thousands of Python packages available for data analysis, modelling, inference, simulation,

prediction, forecasting, visualisation, optimization and decision support. During the seminar, students will be provided ample opportunity to practice their programming skills and obtain formative feedback. The seminar is focused on practical knowledge, examples, and Life Science analysis and business analysis, rather than learning general programming concepts only. The seminar is very much hands-on, with the ultimate goal of turning you into a versatile data analyst for business and life science applications.

Week Topics

- 1 Introduction and getting started with Python (Colab, github, VScode demonstration)
- 2 Conditionals and loops, Function, modules and exceptions
- 3 Object-oriented Programming (class)
- 4 Shallow vs deep copy, reading of and writing to files, variable number of arguments in functions
- 5 Numerical analysis I (Numpy)
- 6 Numerical analysis II (Pandas)
- 7 Data Exploration and visualization I (Kaggle, Matplotlib)
- 8 Group Presentation
- 9 Data Exploration and visualization II (Seaborn and other plot libraries)
- 10 Data processing and preparation in Python I (missing value handling)
- 11 Data processing and preparation in Python II
- 12 Introduction to machine learning with Python I
- 13 Introduction to machine learning with Python II
- 14 Introduction to machine learning with Python III
- 15 Prompt engineering for researchers and marketers

Intended Learning Outcomes:

At the end of the seminar, students are able to:

1. Read and write Python code and understand how to use Python packages.
2. Implement algorithms of moderate complexity in Python.
3. Understand the fundamentals of object-oriented programming using Python.
4. Understand how to implement simple data science and optimisation algorithms from the literature to tackle business and life science applications.
5. Develop their own algorithms to solve basic data science and optimization problems.
6. Use Python packages to solve complex analysis, visualization, and optimisation problems in business and life science.

The learning outcomes of the group work will be improved skills in working as a group, and improved communication and management report writing skills. For the individual presentation, the learning outcomes encompass refined skills in independent research, code development, and presentation techniques. These are practical skills that are transferable to team-focused work in general.

Teaching and Learning Methods:

The seminar each week will be delivered by face-to-face teaching, individual coding and feedback. Every seminar will have meticulously prepared code tasks, which students are required to complete within a specified time. Answers and solutions will be revealed half an hour before the end of the seminar. Note that during the seminar, using generative platforms like ChatGPT

for these tasks is discouraged. Students should rely on internet searches and reading relevant documents to produce workable code solutions. This is very important for beginners learning a programming language. Later on, when students have a more solid foundation in coding, they can use tools like GPT to tackle some more advanced tasks.

Material covered will be made available the week before the seminar. Students are suggested to look at the provided material prior to the seminar to avoid getting lost during the delivery as well as make learning as efficient as possible by asking questions on topics requiring clarity. Learning a programming language and being able to apply it to tackle analytics problems is like learning and using an actual new language. The only way this can be achieved is by sufficient practice.

Media:

Powerpoint, VScode, github, googlecolab

Reading List:

Core texts:

Python manual - <https://www.python.org/doc/>

A.B. Downey. Think Python: How to Think Like a Computer Scientist. O'Reilly, Media, Inc., 2012.

W. McKinney. Python for data analysis: Data wrangling with Pandas, NumPy, and IPython. O'Reilly Media, Inc., 2012.

S. Guido, A. Müller. Introduction to Machine Learning with Python: A Guide for Data Scientists. O'Reilly Media, 2016.

The seminar draws material from various sources but these three sources provide a nice overview of all the topics covered in the module.

Supplementary Texts:

E. Jones, E. Oliphant, P. Peterson, et al. SciPy: Open Source Scientific Tools for Python. <http://www.scipy.org/>, 2001-.

C.H. Papadimitriou and K. Steiglitz. Combinatorial optimization: algorithms and complexity. Courier Corporation, 1982.

C. Reeves and J.E. Rowe. Genetic Algorithms: Principles and Perspectives – A Guide to GA Theory. Kluwer Academic Publishers, 2003.

Responsible for Module:

Cabernard, Livia; Prof. Dr.sc. ETH Zürich

Courses (Type of course, Weekly hours per semester), Instructor:

Programming in Python for Business and Life Science Analytics (MGT001437, englisch) (Seminar, 4 SWS)

Shan Y

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

MGT001438: Applied statistics in R | Applied statistics in R

Version of module description: Gültig ab winterterm 2023/24

Module Level: Master	Language: English	Duration: one semester	Frequency: summer semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

The course requirements include active participation in weekly sessions and practical exercises using R. Throughout the semester, students will work on exercise tasks. Grading is based on a report in which the solutions to these exercise tasks are presented along with the accompanying R code.

Repeat Examination:

Next semester

(Recommended) Prerequisites:

none

Content:

The diversity types of data in real life scenarios leads to a manifold of statistical methods one has to master. In this course, the students will learn about advanced statistical techniques (e.g. nonlinear and logistic regression, penalized regression, and time series analysis) for different research questions. The course consists of a practical part including an introduction to the statistical programming language R, visualization techniques, and applying a selection of statistical methods to real life data, and a complementary lecture about the statistical backgrounds of the selected methods. The main focus is on the practical aspects and the application in R.

Intended Learning Outcomes:

At the end of the course, students are able to

- solve practical problems by selecting adequate, advanced statistical methods,
- applying statistical methods in a suitable analysis software, and
- present the obtained results well using advanced visualisation methods for statistical data (e.g. of spatial data)

Teaching and Learning Methods:

Seminar session will be partly structured as interactive lectures, introducing and discussing new tools in R. Further, in short presentations, students recapitulate and reflect on the most important learning outcomes of the previous session. In the following exercises, the methods learned are applied to new problems and questions.

Media:

Presentation, digital learning materials, and online ressources

Reading List:

James, G., Witten, D., Hastie, T., & Tibshirani, R. (2013). An Introduction to Statistical Learning. With Applications in R. Springer.
Faraway, J. (2006). Extending the Linear Model with R. Taylor & Francis

Responsible for Module:

Pachur, Thorsten; Prof. Dr. phil.

Courses (Type of course, Weekly hours per semester), Instructor:

Applied statistics in R - Exercise (MGT001438, englisch) (Limited places) (Übung, 2 SWS)
Hellmann S

Applied statistics in R - Seminar (MGT001438, englisch) (Limited places) (Seminar, 2 SWS)
Hellmann S

Applied statistics in R - Seminar & Exercise (MGT001438, englisch) (Vorlesung mit integrierten Übungen, 4 SWS)

Hellmann S

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

MGT001443: Project Week 2024/25: Conflicts in Mining Critical Materials: Compromising in Sustainability Strategies | Project Week 2024/25: Conflicts in Mining Critical Materials: Compromising in Sustainability Strategies

Version of module description: Gültig ab winterterm 2024/25

Module Level: Master	Language: English	Duration: one semester	Frequency: one-time
Credits:* 4	Total Hours: 120	Self-study Hours: 60	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

To complete the course, students shall form groups representing different stakeholders and play their roles in the game set up in the class; then, make a presentation (50% of the grade) and write a group report (50% of the grade):

- showing their understanding of sustainability with respect to mining;
- their learning on costs, benefits, and challenges faced by a given stakeholder groups;
- conflicts and ways to find a compromise when it comes to mining strategies;
- importance of mining and its fair development.

Repeat Examination:

(Recommended) Prerequisites:

none

Content:

The course will consist of three parts, which allows for a type of experiment in how exposure to mining practices influences decision making. The first set of sessions will serve to introduce the topic and record “unexperience” and “noncollaborative” perspectives and decision choices on the mining problems presented. Next, students will be exposed actual mining practices, examine the conflicts (standing or past) onsite in visits to open-pit mines in Germany or Austria, and shall form their own views and opinions on the real-world challenges associated with sustainability in mining. Finally, the students return to the stakeholder roles to review their sustainability goals and weights assigned to them, negotiation strategies and impact oriented behavior.

Intended Learning Outcomes:

The module targets students of all backgrounds interested in understanding decision-making processes, challenges associated with choices, and divergence in perspectives on the sustainability goals, in particular, in extraction of critical metals and minerals. The course will explain environmental and societal costs of mining, alongside economic benefits, in the context of the increased demand for metals and materials brought about by decarbonisation goals. Participants will learn about different approaches for addressing the intricate challenges faced by German and global mining industries striving to provide critical resources.

Teaching and Learning Methods:

Students will engage in role-playing exercises to learn the perspectives of three major stakeholder groups, (1) affected communities, (2) upstream producers, i.e. mining operators, and (3) downstream industrial consumers, e.g., automotive companies. They will use the interactive multiobjective optimization (iMO) tool, we prototyped, to test their decisions exploring interest alignments and stakeholder conflicts, fostering deeper understanding of the multifaceted issues surrounding the extraction and consumption of critical materials.

Media:

Reading List:

1. Yakovleva, N., & Nickless, E. (Eds.). (2022). Routledge Handbook of the Extractive Industries and Sustainable Development. Abingdon, UK: Routledge.
2. Hatcher, P., & Grégoire, E. R. (2022). Governance of extractive industries. In Handbook on Governance and Development (pp. 294-307). Edward Elgar Publishing.
3. Veiga, M. M., & Marshall, B. (2018). The extractive industries and society.
4. Veraart, F., Smits, J. P., & van der Vleuten, E. Extractive Industries and Society.

Responsible for Module:

Ikonnikova, Svetlana; Prof. Ph.D.

Courses (Type of course, Weekly hours per semester), Instructor:

Project Week 2024/25: Conflicts in Mining Critical Materials: Compromising in Sustainability Strategies (MGT001443) (Seminar, 4 SWS)

Ikonnikova S, Li G

For further information in this module, please click campus.tum.de or [here](#).

Module Description

MGT001446: Project week: Circular Economy Perspectives in Research and Practice | Project week: Circular Economy Perspectives in Research and Practice

Version of module description: Gültig ab winterterm 2024/25

Module Level: Bachelor/Master	Language: English	Duration: one semester	Frequency: winter semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

The module examination consists of a final group presentation and a project report. The group presentation is 30 minutes long, with 20 minutes dedicated to presenting the project and 10 minutes allocated for a Q&A session and discussion. Additionally, students are required to submit a comprehensive project report, in which individual contributions are clearly highlighted. The grade for the presentation will make up 40% and the report 60% of the final grade.

Repeat Examination:

End of Semester

(Recommended) Prerequisites:

none

Content:

The module offers participants from all backgrounds an in-depth exploration of the intersection between behavioral economics and the circular economy.

It provides an overview of the fundamental principles of both fields and their application to pressing societal and environmental challenges.

Participants will have the opportunity to delve into specific topics, such as economic incentives, social norms, and psychological drivers that influence sustainable behavior.

The module aims to serve as a foundation for further research and equips participants with practical skills to address issues they may encounter in their professional lives.

Emphasis is placed on the integration of behavioral insights into circular economy strategies, including choice architecture, nudging, and creating sustainable consumption patterns.

Real-world case studies and interactive projects will highlight the application of these concepts in promoting resource efficiency, waste reduction, and environmental responsibility.

The topics are typically related to human behavior in the context of sustainability and economic systems, and potential behavioral interventions to foster a more sustainable and circular economy.

Intended Learning Outcomes:

At the end of the module, students are able to design and implement interdisciplinary projects that integrate principles of behavioral economics with circular economy strategies.

They can critically assess and apply economic incentives and behavioral interventions to promote sustainable practices. Additionally, they are skilled in presenting their findings to diverse audiences, effectively communicating complex ideas, and producing well-structured written reports.

Students will also be adept at understanding and addressing the needs of various stakeholder groups affected by environmental and economic challenges, using techniques to foster effective communication and collaboration.

They will be able to analyze and evaluate the principles of the circular economy and behavioral economics, drawing connections between theory and practice.

After completing the module, students can formulate strategic recommendations for businesses and policymakers to enhance sustainability and resource efficiency.

Furthermore, they will be capable of assessing the benefits and limitations of different approaches to implementing circular economy principles within organizational contexts.

Teaching and Learning Methods:

In an introductory session, the foundational principles of behavioral economics and circular economy are introduced and explored in detail. This introduction will also cover the essential knowledge required for integrating these fields. Knowledge and skills are imparted through a combination of lectures, flipped classroom teaching, individual and group project work, peer discussions, and individual coaching sessions. The learning methods include problem definition and solving, collaborative work, group discussions, preparation and delivery of presentations, and report writing.

Students will engage in interactive workshops and case studies to apply theoretical knowledge to real-world scenarios, fostering a deep understanding of the material. Additionally, guest lectures from industry experts will provide practical insights and current trends in the field. Throughout the module, students will receive continuous feedback and support to refine their skills and knowledge.

Media:

Reading List:

Behavioral Economics:

"Thinking, Fast and Slow" by Daniel Kahneman

A comprehensive overview of the dual-process theory of the mind, heuristics, and biases.

"Nudge: Improving Decisions About Health, Wealth, and Happiness" by Richard H. Thaler and Cass R. Sunstein

Explains the concept of "nudging" and how small interventions can significantly influence decision-making.

"Misbehaving: The Making of Behavioral Economics" by Richard H. Thaler
A memoir-style book that chronicles the development of behavioral economics.

"Predictably Irrational: The Hidden Forces That Shape Our Decisions" by Dan Ariely
Explores how and why people make irrational decisions and how to understand these patterns.

"The Undoing Project: A Friendship That Changed Our Minds" by Michael Lewis
A story of the collaboration between Daniel Kahneman and Amos Tversky, highlighting their contributions to behavioral economics.

Circular Economy:

"Cradle to Cradle: Remaking the Way We Make Things" by William McDonough and Michael Braungart
Introduces the concept of designing products and systems in a regenerative manner.

"Waste to Wealth: The Circular Economy Advantage" by Peter Lacy and Jakob Rutqvist
Discusses the business advantages of adopting circular economy principles.

"The Circular Economy: A Wealth of Flows" by Ken Webster
Provides an in-depth look at the circular economy, its principles, and implications.

"Doughnut Economics: Seven Ways to Think Like a 21st-Century Economist" by Kate Raworth
Challenges traditional economic thinking and introduces a model balancing essential human needs and planetary boundaries.

"The Upcycle: Beyond Sustainability--Designing for Abundance" by William McDonough and Michael Braungart
A follow-up to "Cradle to Cradle," focusing on improving systems and products to create more positive impacts.

Responsible for Module:

Mohnen, Alwine; Prof. Dr.

Courses (Type of course, Weekly hours per semester), Instructor:

Project week: Behavioral Economics and the Circular Economy (MGT001446, englisch) (Seminar, 4 SWS)

Burkhardt R, Kober K

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

MGT001460: Quantitative Research Proposals: Developing an empirical research project | Quantitative Research Proposals: Developing an empirical research project

Version of module description: Gültig ab winterterm 2024/25

Module Level: Master	Language: English	Duration: one semester	Frequency: irregularly
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

The examination consists of a 15 min. (conference-style) presentation (50%) of the student's research proposal plus a subsequent 5-10 min. discussion, as well as the preparation of a written report in the form of a pre-registration according to the AsPredicted guidelines including a review of the relevant literature (50%)(ca. 2-4 pages). Both the pre-registration as well as presentation prepare students for their written Master's thesis as well as their oral defense. Moreover, these skills can be used in all future research projects.

Repeat Examination:

End of Semester

(Recommended) Prerequisites:

Finished or currently enrolled in class Empirical Research Methods

Content:

Upon successful completion of this module, students are able to create (prepare) an outline for an empirical (quantitative) research proposal, which can be used for their Management or Marketing focused Master's thesis. The focus of this course is on the development of scientific research questions that can be answered using human (behavioral) data, and identifying the right analytical methods to answer such research questions.

This capability includes that students:

- Understand the basics of writing scientific texts
- Identify the right tools that help them prepare a Master's thesis in which they analyse (human behavioral) data
- Evaluate the quality of an empirical research proposal

- Understand and follow the basic requirements of an academic research talk in Management and Marketing

Although most of the examples in this class will build on human behavior (e.g., experiments or questionnaires designed for collecting behavioral data from individuals), the skills taught can also be applied to other research subjects (e.g., companies).

Intended Learning Outcomes:

Upon successful completion of this module, students are able to create (prepare) an outline for an empirical (quantitative) research proposal, which can be used for their Management or Marketing focused Master's thesis. The focus of this course is on the development of scientific research questions that can be answered using human (behavioral) data, and identifying the right analytical methods to answer such research questions.

This capability includes that students:

- Understand the basics of writing scientific texts
- Identify the right tools that help them prepare a Master's thesis in which they analyse (human behavioral) data
- Evaluate the quality of an empirical research proposal
- Understand and follow the basic requirements of an academic research talk in Management and Marketing

Although most of the examples in this class will build on human behavior (e.g., experiments or questionnaires designed for collecting behavioral data from individuals), the skills taught can also be applied to other research subjects (e.g., companies).

Teaching and Learning Methods:

This module uses interactive seminars to facilitate the sharing of knowledge and discussions to help students to manifest their understanding. These interactive seminars are complimented by hands-on exercise in which the students actively develop their own research proposal.

During these exercises, students can get guidance during the exercise, engage in small group discussions, present their work to the seminar group and provide each other with feedback.

Media:

Presentation, digital learning materials, and online resources

Reading List:

Gernsbacher, M. A. (2018). Writing empirical articles: Transparency, reproducibility, clarity, and memorability. *Advances in Methods and Practices in Psychological Science*, 1(3), 403–414.

Wagenmakers, E. J. (2009). Teaching graduate students how to write clearly.

Responsible for Module:

Pachur, Thorsten; Prof. Dr. phil.

Courses (Type of course, Weekly hours per semester), Instructor:

Quantitative Research Proposals: Developing an empirical research project MGT001460H (e.g., for your Master's thesis) (Hauptseminar, 2 SWS)

Ortmann A

Quantitative Research Proposals: Developing an empirical research project MGT001460Ü (e.g., for your Master's thesis) (Übung, 2 SWS)

Ortmann A

Quantitative Research Proposals: Developing an empirical research project (e.g., for your Master's thesis) - Seminar & Exercise (MGT001460, englisch) (Limited places) (Seminar, 4 SWS)

Ortmann A

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

POL61300: The Politics of Market Competition in a Global Economy | The Politics of Market Competition in a Global Economy

Version of module description: Gültig ab winterterm 2023/24

Module Level: Master	Language: English	Duration: one semester	Frequency: summer semester
Credits:* 6	Total Hours: 180	Self-study Hours: 135	Contact Hours: 45

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

The module examination takes place as a learning portfolio. As part of this learning portfolio, students will document their understanding of class material through short weekly reading responses to the assigned class reading (30% of the grade). Additionally, student will be required to write a slightly longer response to a news story pertaining to competition law and policy informed by the readings (10%). Finally, after the end of the weekly sessions students will write an academic essay that discusses a (current) topic of competition law and policy using the knowledge gained from readings and class discussions (60%).

The weekly reading responses should show students' understanding of the topics covered in the readings and serve as basis for the class discussions, giving them the opportunity to demonstrate their ability describe and analyze the political economy of competition policy. They have a length of 100-200 words. The response to a news story allows students to hone their skills of engaging in the debate on the political economy of competition policy, showing they can relate current discussions of competition policy to insights from political economy. The response should be written in the style of a "letter to the editor" or blog post with a lenght of 500 words ($\pm 10\%$). The final essay presents the culmination of students' learning in the course and should be an academic discussion in an advocative style, showing they are able to develop their own understanding of issues relating to market governance and in particular competition policy using knowledge gained throughout the course and based on readings and other scientific literature. The essay should have a length of 8-10 pages (bibliography excluded).

Repeat Examination:

Next semester

(Recommended) Prerequisites:

none, some basic familiarity with and interest in competition law is advantageous but not required

Content:

The regulation of market competition represents a fundamental challenge within capitalist political economies. On the one hand, market competition is a fundamental component of capitalist systems, without which the price mechanism that guides the production and location of goods and services would not properly function. On the other hand, unrestricted competition can lead to economic instability, increased inequality, and a race-to-the-bottom in environmental, labor, and health standards that, when left unchecked, undermines political support for market capitalism. Consequently, contemporary competition rules generally reflect both economic and political concerns, trying to find a balance between these two poles of free market power and regulated competition.

This module examines the politics of competition law and policy in comparative and international perspective, looking at the historical and international political economy to gain an understanding into the machinations of competition policy making. In exploring how state institutions have sought to address competition questions across different contexts, students will gain a broad theoretical and empirical understanding of competition regulation—and more generally the institutional foundations of market capitalism. The recent rise in discussions on competition policy against the background of rising market power, particularly in the platform and tech economy but also across other industries, renewed interest in limiting monopolies as a political issue, as well as the downstream effects of industry concentration on topics such as inflation, inequality, product quality and supply chain resilience serves as the background for a theoretical discussion of the forces driving market governance through competition policy in different polities.

Intended Learning Outcomes:

Upon successful completion of this module, students will be able:

- describe the historical and international political economy of competition policy in different jurisdictions
- analyze issues of competition law and policy as pertaining to their political economy
- evaluate contributions to the discussion of competition policy to the political economy of market governing in capitalism
- relate current discussions on the (political) economy to issues and developments of the political economy of competition policy
- develop their own understanding on the governance of markets within capitalism through competition policy

Teaching and Learning Methods:

The module will be offered as a reading seminar where weekly readings will be discussed in the plenum and key issues and questions arising out of the readings analyzed. Some additional videos and podcasts relating to competition policy will be used to give students familiarity with the topic. The class convenes weekly in-person.

Media:

scientific literature, class discussion, blog posts, videos, podcasts

Reading List:

The required readings will be announced in the first session and consist of on average two academic articles (or the equivalent length in book chapters) on topics of political economy, economics, political science, economic sociology and law and history

An overview of competition policy in general can be found in Motta, Massimo. *Competition Policy: Theory and Practice*. Cambridge: Cambridge University Press, 2004. <https://doi.org/10.1017/CBO9780511804038>.

Other relevant readings in the different fields covered that student can consult for ideas on the content of the course include:

Christophers, Brett. *The Great Leveler: Capitalism and Competition in the Court of Law*. Harvard University Press, 2016.

Büthe, Tim. "Competition Law and Policy as an Emerging IPE Issue." In *The Palgrave Handbook of Contemporary International Political Economy*, edited by Timothy M. Shaw, Laura C. Mahrenbach, Renu Modi, and Xu Yi-chong. *Palgrave Handbooks in IPE*. London: Palgrave Macmillan UK, 2019. <https://doi.org/10.1057/978-1-37-45443-0>.

Babina, Tania, Simcha Barkai, Jessica Jeffers, Ezra Karger, and Ekaterina Volkova. "Antitrust Enforcement Increases Economic Activity." Working Paper. National Bureau of Economic Research, August 2023. <https://doi.org/10.3386/w31597>.

Ergen, Timur, and Sebastian Kohl. "Rival Views of Economic Competition." *Socio-Economic Review* 20, no. 3 (September 29, 2022): 937–65. <https://doi.org/10.1093/ser/mwaa041>.

Foster, Chase. "Varieties of Neoliberalism: Courts, Competition Paradigms and the Atlantic Divide in Anti-Trust." *Socio-Economic Review* 20, no. 4 (November 22, 2022): 1653–78. <https://doi.org/10.1093/ser/mwab050>.

Responsible for Module:

Büthe, Tim; Prof. Dr.

Courses (Type of course, Weekly hours per semester), Instructor:

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

POL61301: Technology Governance and the Regulatory State | Technology Governance and the Regulatory State

Version of module description: Gültig ab winterterm 2023/24

Module Level: Master	Language: English	Duration: one semester	Frequency: winter semester
Credits:* 6	Total Hours: 180	Self-study Hours: 135	Contact Hours: 45

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

The examination consists of a research paper complemented by a presentation: First, the written research work counts 70% towards the final grade. Building on a paper proposal, students will write a term paper (about 12-15 pages) that tackles an original research question related to topics in Regulation of Technology. Students are expected to approach this question both theoretically and empirically. With this, students show their ability to analyze, categorize, appraise the literature, and apply their knowledge to a political-economic topic of their choice. They prove that they have a good command of a wide range of arguments, issues, and research designs in the field of regulation and can apply them to their own research idea. Second, the oral presentation (20-30 minutes) counts 30% towards the final grade. Students are expected to present a topic in class (in some cases in a group-based setting), on which they can build their written research work. Hereby, the students demonstrate their communicative competence in presenting scientific papers to an expert audience and discuss their own work.

Repeat Examination:

Next semester

(Recommended) Prerequisites:

Field Seminar in Political Economy; Quantitative Methods

Content:

The following contents are covered in the module:

- Platform Economy
- Regulatory State
- Regulatory Capture

- Hidden Developmental State
- Platform Capitalism
- Platform Power
- Market Concentration, Power and Antitrust
- Labor Rights in the Digital Economy
- Sharing Economy
- Data Privacy and Ownership
- Social Media and Democracy

Intended Learning Outcomes:

Upon successful completion of this module, students will understand the central problems of technology governance. In addition, they will be capable to evaluate the effect regulation has on political and economic preferences as well as on how to regulate economic behavior under conditions of technological progress. Students will be also familiar with a wide range of research designs in the field of regulation, including a comparative perspective with regard to different types of political systems and the international arena, in which countries operate. They will be able to analyze the proposed state regulation and to develop an original research idea to carry out their proposed study. Furthermore, upon completion of the module, students will possess practical skills in data management and analysis and the ability to write up results and present scientific papers.

Teaching and Learning Methods:

The module consists of one seminar, which requires extensive in-advance reading and active participation. This setting enables an intensive discussion of hypotheses and research designs in a group setting which is meant to encourage in-depth exploration of the module's topics as well as independent study of the scientific literature. Ultimately, the module's goal is to enable students to do research on their own.

Media:

Slides, Moodle

Reading List:

Introductory reading: Balleisen, Edward, and David Moss. 2012. Governments and Markets: Toward a New Theory of Regulation. Cambridge University Press.

The seminar slides and other materials will be made available via an electronic repository. You will gain automatic access to the Moodle platform by registering for this course. Most required readings are available via the TUM's electronic journal holdings. Please make sure to download them on your own.

Responsible for Module:

Büthe, Tim; Prof. Dr.

Courses (Type of course, Weekly hours per semester), Instructor:

(POL61301) Technology Governance and the Regulatory State (Seminar, 3 SWS)

Onoda T

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

POL61303: Competition Law and Policy in the EU and the US | Competition Law and Policy in the EU and the US

Version of module description: Gültig ab winterterm 2019/20

Module Level: Master	Language: English	Duration: one semester	Frequency: summer semester
Credits:* 6	Total Hours: 180	Self-study Hours: 135	Contact Hours: 45

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

The module consists of a reading- and research-focused seminar. Close advance reading of the assigned texts and active participation in the seminar in the form of discussion groups will be critical to allow students to gain a full understanding of the complex and inherently interdisciplinary topic of competition policy and to be able to develop a research project of their own choosing. By the end of the day prior to each seminar meeting, each student should post on the Moodle forum at least one question about the week's readings. In each session, using the application mentimeter.com, students will have the chance to vote on the top 5 questions they would like to discuss in class. Students will then be divided in discussion groups of 3 or 4 and will have 10 minutes to prepare their answers, after which the questions will be discussed in a plenary setting for about 30 minutes. The rest of the session will be used by the lecturer to explain main concepts and ideas, and to answer questions. Students may be excused from class or preparation there of on no more than two occasions.

Research papers may be on any topic related to the course, but must be approved by the instructor based on research proposals to be submitted no later than 12 noon on Monday, 03.06.2019. The research proposal should consist of a 1-2 page memo, which states clearly 1) the research topic, 2) its scientific and societal relevance, 3) research question and 4) research methodology. Research proposals count for 10% of the grade for the paper. During the last two meetings of the semester, students will give a brief in-class presentation of their projects as work-in-progress (followed by a brief discussion and feedback on the projects). Work-in-progress presentations will count for 20% of the grade. The final drafts are due no later than 12 noon on 15.09.2019. Final papers, which form 70% of the grade, should observe the following parameters:

- Word count, including footnotes and literature list: 8,000-10,000 words for Master-level students and 6,000-8,000 words for Bachelor-level students
- Text formatting: Times New Roman 11, spacing: 1,5 pts
- The recommended citation style is APA, but any other citation style that the student feels comfortable with is also acceptable, provided that citation is done consistently

The paper will be evaluated on the basis of the following criteria: 1) clarity, 2) logical coherence, 3) methodological approach, 4) mastery of the subject matter and 5) originality. Those evaluation criteria have equal weight in the determination of the grade for the paper.

Repeat Examination:

Next semester

(Recommended) Prerequisites:

Content:

This course takes a comparative approach to exploring the legal dimensions of current issues that arise in the domains of competition/antitrust law in the EU and the US. The rules of EU competition law and US antitrust, respectively, are those provisions that directly apply to companies throughout these two jurisdictions; these rules intend to curb market power where it already exists or threatens to appear. The discussion is going to focus on the law, but remains with an open eye for the underlying policy and economic rationales of competition/antitrust regulation in the EU and the US. The following topics will be tackled at length: (i) the EU and US rules on prohibition of cartels and restrictive practices, (ii) the EU and US rules on the prohibition of abuses of dominant position and (iii) the EU and US rules on merger control.

Intended Learning Outcomes:

This module, consisting of a reading- and research-focused seminar, seeks to introduce students to the inherently interdisciplinary topic of competition law and policy, with a special appreciation for its legal aspects, while not losing sight of the underpinning political and economic considerations. Through readings, class discussion based on discussion groups, and ultimately their own research paper, students will become conversant in matters of antitrust/competition law and policy and will ultimately be able to critically assess arguments and statements made by competition enforcers and other relevant actors in the competition/antitrust domain. To this end, students will be taught and subsequently asked to work with enforcement guidelines, case law, preparatory studies, impact assessments and other relevant legal and non-legal documents. Class participation and the formal presentations of the students' own research-in-progress additionally allow students to gain and hone their communicative skills.

Teaching and Learning Methods:

Media:

Reading List:

D. Gerber, Global Competition: Law, Markets and Globalization (OUP, 2010) ISBN: 9780199228225

- E. Elhauge and D. Geradin, Global Competition Law and Economics (Hart Publishing, 2011) ISBN: 9781849460446
- E. Fox and D. Gerard, EU Competition Law: Cases, Texts and Context (Edward Elgar, 2017) ISBN: 9781786430847
- P. Areeda, L. Kaplow and A. Edlin, Antitrust Analysis: Problems, Text, and Cases – Aspen Casebook (7th edition, Wolters Kluwer) ISBN: 9781454824992
- C. Sagers, Examples and Explanations: Antitrust (Wolters Kluwer, 2014) ISBN: 9781454833956
- H. Hovenkamp, The Antitrust Enterprise (Harvard University Press, 2008) ISBN: 9780674027411
- G. Amato, Antitrust and the Bounds of Power (Hart Publishing, 1997) ISBN: 9781901362299

Responsible for Module:

Büthe, Tim; Prof. Dr.

Courses (Type of course, Weekly hours per semester), Instructor:

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

POL62200: Energy Transformation | Energy Transformation

Version of module description: Gültig ab winterterm 2017/18

Module Level: Master	Language: English	Duration: one semester	Frequency: winter/summer semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

For this module, evaluations will be based on written work and a presentation. The written assignment for the module will be of a length of approximately 20-25 pages. The topic of the module paper is to be developed in consultation with the seminar leaders and will deal with a specific topic of the seminar (energy transformation) and its technological, political, and social dimensions. The paper will be introduced with a precise question and then analyzed in depth. The methodology of research needs to be indicated and a comprehensive bibliography included. Students will be expected to prepare and give a presentation of at least 20 minutes tied to a session topic. Group presentations of up to three students are possible as long as individual contributions are discernible.

Repeat Examination:

Next semester

(Recommended) Prerequisites:

Ring lecture „Politics & Technology“

Content:

For a variety of reasons, including energy security, environment and climate concerns, and the potential to develop new technologies and processes, cities, countries and entire regions are pursuing low-carbon energy transitions. Understandings of what the best approach to a low carbon energy transition is, however, vary widely. The extent to which energy transitions are occurring in various sectors (power, heating/cooling, transportation) differs significantly. Why is this the case? What factors support or inhibit the scaling-up of policy solutions? What are the challenges associated with large scale energy system transformations? How similar or different are energy system transformations to other major transformations which have occurred in the past or which may need to occur in the future? This module will consider these and other questions in the context of Germany, at the European level and internationally.

Intended Learning Outcomes:

After participating in this module, students will understand the arguments underpinning decisions to pursue low carbon energy transitions, how low carbon energy transitions are affected by broader economic, technological, and political factors, and the ways in which actors at the local, national, or international level may act to promote or inhibit change. They will have gained insights into system transformation thinking, understand aspects of the production, distribution and utilization of energy and their interplay; apply methods of comparative policy analysis to energy policy in different political systems; be able to identify challenges of policy-making in national politics and the European multi-level system; to critically analyze energy policy in Germany, Europe, and internationally (for example in China, Japan, India, the United States as well as at the global level); to analyze the factors determining German, European, and international energy politics, and to evaluate the effects of different energy policy governance instruments (like legal regulation, planning, incentive design, taxes, subsidies, etc.).

Teaching and Learning Methods:

The module is offered in the form of two seminars, each dealing with different, but complementary thematic areas. One will be focused more on the transition of the energy systems in Germany and Europe while the other will concentrate more on the international and global level. To obtain a deeper understanding of the module's topics a combination of independent work and general discussion will be used in the seminar. Seminars will include both direct input from the instructor and a wide variety of active learning methods. During the seminars, there will be in-depth discussions and inputs by students. Concrete examples will be used to practice, analyze, and evaluate the material which has been presented. Both the technical and scientific aspects of issues as well as their political and social implications will be discussed. The presentations developed and given by the students and ensuing discussions will contribute to the students' understanding of the seminar materials and instructor's inputs.

Media:

Online-Reader, PowerPoint

Reading List:

Moe, Espin. 2015. Renewable Energy Transformation or Fossil Fuel Backlash: Vested Interests in the Political Economy. Palgrave MacMillan.

Araújo, K., ed. 2022. Routledge Handbook of Energy Transitions. Routledge.

A reader of seminar texts with up-to-date and cutting edge scientific literature will be made available at the start of the semester.

Responsible for Module:

Schreurs, Miranda; Prof. Dr.

Courses (Type of course, Weekly hours per semester), Instructor:

(POL62200) Energy Transformation (Seminar 1 + 2) (Seminar, 4 SWS)

Ohlhorst D

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

POL62400: Environment and Climate Transformation | Environment and Climate Transformation

Version of module description: Gültig ab winterterm 2023/24

Module Level: Master	Language: German/English	Duration: one semester	Frequency: irregularly
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

The exam takes the form of a written research assignment counting for 60% of the final grade, which is complemented by a presentation (40%). The written assignment will involve research, including theoretical and methodological elements. Written assignments will be 20 to 25 pages in length. The research paper must be related to the thematic focus of the module (climate, environmental pollution, sustainability). Students should be able to show they are able to identify a relevant research question and research design in the field of environmental and climate policy, and to show how this can be applied to a thematic area addressed in the module. With their 10-20 minute presentations, students should illustrate their ability to effectively communicate the causes and consequences of an environmental or climate problem as well as potential policy and societal solutions. In the case of group projects, student assessments are to be done individually and individual contributions must be clearly identifiable.

Repeat Examination:

Next semester

(Recommended) Prerequisites:

none

Content:

Global climate change, biodiversity loss, resource depletion, ocean acidification, and land degradation are some of the many environmental problems which have potentially grave consequences for humanity. These consequences are noticeable at the local, regional, national and international levels. This module considers both the impacts of environmental problems on today's societies as well as the potential implications for future generations. It also considers

various technological-and social responses to these problems at the regional, national and international level.

Intended Learning Outcomes:

This module will help students identify key concepts and theories tied to environmental and climate politics at the local, national, European and global levels, to understand decision making processes, and to work with different environmental policy instruments (for example legal regulation, planning, incentive design, taxes, subsidies, etc.). Students will be able to recognize and make use of different negotiation strategies. They will be able to consider the strengths and weakness of a variety of regulatory and non-regulatory governance instruments, develop leadership skills, understand the importance of issue framing, and consider the importance of coalitions. They will gain an awareness of different theoretical and methodological approaches to environmental and climate politics research and will be able to apply methods of comparative analysis to environmental and climate politics at the regional, national, and international levels. The inter- and intra-generational justice aspects of environmental and climate policy making (or lack of action) will be considered along with the implications of different technological, economic, and social solutions. The course will be global in its scope examining both developing, transitioning, and technologically developed countries.

Teaching and Learning Methods:

The module is offered in the form of two seminars, each dealing with different, but complementary thematic areas. One should be focused more on technological, social, and intergenerational justice implications of environmental, energy, and climate decision making while in the other seminar the students have the opportunity to model political decision-making and negotiations. As a goal of the module is to strengthen students' negotiating skills, in-class simulations will be developed (e.g. of global climate or biodiversity negotiations or of negotiations among European countries). This may include a weekend or alternative extra-long session to allow for a full-length negotiation. Seminars will include both direct input from the instructor and modelling of domestic and international negotiations. Active participation in seminars will be essential. In-class negotiations or decision making simulations will be complemented by written reflection pieces. The presentations developed and given by the students during and after simulation exercises will contribute to the students' understanding of how decision making and negotiations function.

Media:

Online-Reader, PowerPoint

Reading List:

Intergovernmental Panel on Climate Change. Sixth Assessment Report and Working Group Reports.

A reader of seminar texts with up-to-date and cutting edge scientific literature will be made available at the start of the semester.

Responsible for Module:

Schreurs, Miranda; Prof. Dr.

Courses (Type of course, Weekly hours per semester), Instructor:

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

WIV02003: Advanced Seminar Economics, Policy & Econometrics: Health Economics | Advanced Seminar Economics, Policy & Econometrics: Health Economics

Health Economics

Version of module description: Gültig ab summerterm 2018

Module Level: Master	Language: English	Duration: one semester	Frequency: irregularly
Credits:* 6	Total Hours: 180	Self-study Hours: 60	Contact Hours: 120

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

Each seminar participant independently elaborates a topic in health economics. The examination comprises two parts:

- 1) Presentation (1/3 of grade) on the topic selected by the respective participant and a corresponding brief written précis (extensive handout) followed by a discussion
- 2) Written seminar paper (12 pages) (2/3 of grade) on the selected topic

Students should demonstrate their capacity for abstraction (thinking in economic models) and concretization (interpreting and applying the results of the model, deriving recommendations for political action) regarding current topics.

Repeat Examination:

Next semester

(Recommended) Prerequisites:

Principles of Micro- and Macroeconomics

Content:

Participants analyze selected problems in health economics and derive recommendations for political action.

Intended Learning Outcomes:

After participation, students will be able to explain and present specific topics in health economics by means of micro- and welfare-economic concepts. Furthermore, they are able to assess the

debated theoretical and empirical contributions to health economics and to integrate them in the literature. By means of discussions following the presentations, students learn to critically reflect upon the assumptions and methods of the debated economic models.

Teaching and Learning Methods:

Each seminar participant independently elaborates a topic in health economics. The examination comprises a seminar paper as well as a presentation on the topic selected by the respective participant.

Media:

Beamer presentation, lecture, literature

Reading List:

Breyer, F., Zweifel, P., & Kifmann, M. (2012). Gesundheitsökonomik. Springer-Verlag.
Culyer, A. J., Newhouse, J. P., Pauly, M. V., McGuire, T. G., & Barros, P. P. (Eds.). (2000). Handbook of health economics. Elsevier.

Responsible for Module:

Feilcke, Christian; Dr. rer. pol.

Courses (Type of course, Weekly hours per semester), Instructor:

Advanced Seminar Economics, Policy & Econometrics (WIV02003, englisch): Health Economics
(Limited places) (Seminar, 4 SWS)

Feilcke C

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

WIV05001: Advanced Seminar Economics, Policy & Econometrics: Economics of Innovation | Advanced Seminar Economics, Policy & Econometrics: Economics of Innovation [ASEol]

Economics of Innovation

Version of module description: Gültig ab winterterm 2016/17

Module Level: Master	Language: English	Duration: one semester	Frequency: winter semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

The students will work in small groups on one of five topics: Creation of knowledge, diffusion of knowledge, industry and macroeconomic aspects, intellectual property rights, innovation policy. The group work aims at 1) understanding the topic in depth and 2) presenting the most important insights from their topic to classmates. Moreover, the students will derive research gaps in the literature related to their topic and summarize both main insights and research gaps in a presentation (20-30 min. per person) to the class. By presenting in a team, students demonstrate their ability within a team to manage resources, and deadlines through timely submission of the enumerated tasks. Finally, they will submit an extended version of the presentation topic as a written research paper (8.000 to 10.000 words). By writing the research paper, students show their ability to work independently on solving complex scholarly problems related to the Economics of Innovation.

The final grade will be based on the written research paper with a weight of 80% and the presentation with a weight of 20%

Repeat Examination:

Next semester

(Recommended) Prerequisites:

Familiarity with microeconomics

Content:

This module will provide students in-depth insights into the field of the Economics of Innovation. The module will discuss some of the prevailing models in the field of Industrial Organization dedicated to the analysis of the incentives and constraints to innovative activities (R&D activities)

as well their relation with imitation, spillovers, firm size and market structure. The module also comprises a dynamic and knowledge-based view, introducing models involving the direct generation of new knowledge, the catching-up/falling behind dynamics of competition and the role played by market selection between innovative firms. The objective of is also to apply the acquired knowledge to selected topics in the field of innovation research. The students will be asked to write a research paper and to present their work in class.

Intended Learning Outcomes:

This module introduces the students to the main issues in the economics of innovation and advances their understanding of the core concepts and principles in the field. The ultimate objective to enhance both theoretical as well as an applied view on the topic enabling students to understand academic as well as public debate on questions related to the economics behind innovation and technological progress. Upon successful completion of this module, students will be therefore able (1) to identify and (2) conceptualize different important issues related to the Economics of Innovation. They (3) are able to identify gaps in the understanding of the focal topic and (4) developed suggestions for improving the understanding of the field. In addition, by presenting their topic to the class, they will (5) enhance their presentation skills and by writing the research paper (6) their scientific writing skills. Through working in groups, the (6) students will work on their teamwork skills.

Teaching and Learning Methods:

The module is a seminar, in which the students will gain in-depth insights in the Economics of Innovation. The seminar will start with an introductory lecture, which will provide the bases for deeper study of the most relevant topics. The first phase will then concentrate on problem-based learning by reading relevant scientific literature and by discussing these articles in the group. In the second phase, students will individually elaborate a written paper as well as presentations in which they need to show their understanding of their focal topic as well as show their capability to identify research gaps in the discussed literature.

Media:

Reading List:

in general:

- Fagerberg, J., Mowery, D. and Nelson, R. R. (2010), Oxford Handbook of Innovation, Oxford: Oxford University Press
- Hall, B. H. and Rosenberg, N. (2010), Handbook of the Economics of Innovation, Oxford: Elsevier,

specific topics:

- Czarnitzki, D., Hottenrott, H. and Thorwarth, S. (2011) 'Industrial research versus development investment - the implications of financial constraints', Cambridge Journal of Economics, 35, 527-544.
- Jaffe, A., Trajtenberg, M. and Henderson, R. (1993), 'Geographic Localization of

'Knowledge Spillovers as Evidenced by Patent Citations', Quarterly Journal of
Economics, 108, 577-598.

- Aghion, P., Dechezleprêtre, A., Hemous, D., Martin, R. and Van Reenen, J. (2016), 'Carbon Taxes, Path Dependency and Directed Technical Change: Evidence from the Auto Industry', Journal of Political Economy, 124 (1).
- Gallini, N. und Scotchmer, S. (2002), 'Intellectual Property: When Is It the Best Incentive System?', in: Jaffe et al. (Eds.), Innovation Policy and the Economy, MIT Press, 51-77.
- Lundval & Borrás (2005), 'Science, technology, and innovation policy', in: Fagerberg, J., Mowery, D. and Nelson, R. R. (eds.), Oxford Handbook of Innovation, Oxford: Oxford University Press, 599-631.

Responsible for Module:

Hottenrott, Hanna; Prof. Dr.

Courses (Type of course, Weekly hours per semester), Instructor:

Advanced Seminar Economics, Policy & Econometrics (WIV05001, englisch): Economics of Innovation (Limited places) (Seminar, 4 SWS)

Hottenrott H, Rose M

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

WI000258: Empirical Research in Economics and Management | Empirical Research in Economics and Management

Version of module description: Gültig ab winterterm 2024/25

Module Level: Master	Language: English	Duration: one semester	Frequency: winter semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

The final written exam (120 minutes) assesses students' understanding of basic and advanced issues of empirical research methods and data analysis in management and economics. Students have to demonstrate that they understand the different steps of developing a research hypothesis, develop a research design, planning and conducting an empirical study (including sampling of participants), and analyze and interpret the obtained data. Further, the exam tests knowledge of basic and advanced techniques of data analysis and when each of these techniques are applicable. The exam is 100% based on multiple-choice questions. Students may use a non-programmable calculator for the exam. The exam includes equally contents of the lecture and from the exercise.

Repeat Examination:

Next semester

(Recommended) Prerequisites:

none

Content:

This module prepares students for conducting empirical research (e.g., for their Master's thesis) by introducing them to basic and advanced topics of research methodology and data analysis. The topics covered in the module include: research design; hypothesis testing; simple and multiple regression; logistic regression; factor analysis; cluster analysis; conjoint analysis; open science. The acquired skills are important for students' Master's Thesis but are equally important to understand and analyze empirical data and in their future career and everyday life.

Intended Learning Outcomes:

The acquired skills are important for conducting a Master's thesis but are equally important to understand and analyze data in their future career and in everyday life. After the successful participation in the module, students will be able to understand key methods of empirical research, including both basic and more advanced aspects of research design, data collection, data analysis, and interpretation. Students will learn how to understand and analyze empirical research and be in a position to critically evaluate published findings. Students will learn to apply basic methods to empirical data. Students will learn the basics of how to plan, set up, and conduct an empirical research project. Finally, students will learn to interpret empirical research results.

Teaching and Learning Methods:

The module consists of lectures and exercises. The lectures serve to build a thorough theoretical and conceptual understanding of the scientific issues and methods. In the exercises, students learn to practically apply the methods that were discussed in the lectures in concrete analyses and interpretations.

Media:

Lecture slides are available via Moodle.

Reading List:

Bell, E., Bryman, A., & Harley, B. (2022). Business research methods (6th ed.). Oxford University Press; Field, A., Miles, J., & Field, Z. (2012). Introduction to statistics using R. Sage Publications; Goss-Sampson, M. A. (2022). Statistical analysis in JASP 0.16.1: A guide for students; Backhaus, K., Erichson, B., Gensler, S., Weiber, R., & Weiber, T. (2021). Multivariate analysis: An application-oriented introduction. Springer.

Responsible for Module:

Pachur, Thorsten; Prof. Dr. phil.

Courses (Type of course, Weekly hours per semester), Instructor:

Empirical Research in Economics and Management - Exercise (WIHN0258) (MiM Campus Heilbronn) (Übung, 2 SWS)
Förderer J

Empirical Research in Economics and Management - Lecture (WIHN0258) (MiM Campus Heilbronn) (Vorlesung, 2 SWS)
Förderer J, Kircher T

Empirical Research in Management and Economics (WI000258, englisch) (Vorlesung, 2 SWS)
Pachur T (Abdelaal M)

Empirical Research in Management and Economics (WI000258, englisch) - Exercise (Übung, 2 SWS)
Pachur T, Hof L, Busch N, Hellmann S, Ortmann A

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

WI001145: Energy Economics | Energy Economics

Version of module description: Gültig ab summerterm 2021

Module Level: Master	Language: English	Duration: one semester	Frequency: winter semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

The module entails a final written exam (120 minutes). The exam is a closed-book exam. By answering the questions students show their ability to differentiate and evaluate different market structures (at wholesale, transportation and retail level) in energy markets, e.g. in gas, coal, oil and power markets. Moreover students show their ability to discuss and apply theoretical and empirical methods to selected topics in energy markets. They show that they are able to analyze and assess recent energy market developments, such as for instance the energy transition, using the theoretical and empirical tools they have acquired.

Repeat Examination:

Next semester

(Recommended) Prerequisites:

Courses at TUM or elsewhere in microeconomics and introductory statistics or econometrics

Content:

This module covers the following topics:

Economics of energy markets

Analysis of producer strategies

Analysis of consumer behavior

Fundamentals of primary energy markets

Fundamentals of electricity markets

Analysis of network industries

Network regulation

Microeconomics

Game theory

Econometrics

Energy policy

Intended Learning Outcomes:

Students are able to explain and to differentiate different market structures (at wholesale, transportation and retail level) in energy markets, e.g. in gas, coal, oil and power markets. Furthermore, they are able to summarize and compare different strategies and behavior of producers and consumers, as well as on different forms of regulation of network industries. Students are also able to discuss and apply theoretical and empirical methods to selected topics in energy markets. With these tools student will thus be able to analyze and assess recent energy market developments, such as for instance the energy transition.

Teaching and Learning Methods:

The module is a lecture consisting of PowerPoint presentations so as to offer and explain to students all different topics covered in this module. A guest lecture is planned in which practitioners present on selected topics in energy markets. The exercise course comprises different problem sets that discuss problems covered during the lecture. Problem sets are solved individually or in group work and, supported by a presentation, derived and solved jointly with the tutor.

Media:

PowerPoint, exercise sheets, whiteboard, reader

Reading List:

Viscusi, W. et al. (2005): Economics of Regulation and Antitrust, MIT Press. Stoft, S. (2002): Power System Economics, Wiley. Selected journal articles.

Responsible for Module:

Schwenen, Sebastian; Prof. Dr.

Courses (Type of course, Weekly hours per semester), Instructor:

Energy Economics (WI001145, englisch) (Vorlesung, 2 SWS)

Schwenen S

Energy Economics - Exercise (WI001145, englisch) (Übung, 2 SWS)

Schwenen S

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

WI001211: Understanding Regional Innovation Cultures | Understanding Regional Innovation Cultures [InnoCultures]

Version of module description: Gültig ab winterterm 2024/25

Module Level: Master	Language: English	Duration: one semester	Frequency: summer semester
Credits:* 6	Total Hours: 180	Self-study Hours: 150	Contact Hours: 30

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

Students are required to write a research paper (3000-4000 words) in which they demonstrate

- their knowledge about specific debates concerning the relationship between region and innovation
- their ability to present and discuss different positions, questions and arguments concerning these debates
- their ability to use these approaches for creating potential research designs and to formulate relevant research questions
- their ability to develop original arguments regarding the relationship between regions and innovation.

Repeat Examination:

End of Semester

(Recommended) Prerequisites:

The student should have a basic academic understanding of social, political, and cultural issues. Ideally, he/she has previously taken a course in sociology, political science, history, philosophy, anthropology or related disciplines. Previous experience with qualitative/interpretative research, independent study with theoretical literature, and advanced academic writing are highly recommended.

Content:

Courses in this module introduce the students to current issues and conceptual questions around the notion of regional innovation cultures from a qualitative social science perspective. The teaching follows the “cultural turn” in innovation theory and offers new possibilities for looking at how and where cultural imagination matters in innovation policy. We start from a simple diagnosis: Innovation as a public discourse is more prominent than ever for regions at different scales –

such cities, the nation state or the European Union. Yet, the geography of innovation is thoroughly unequal. Repeated failures to spur economic and technological progress in so-called developing or underperforming regions have revealed the limits of thinking about innovation in terms of quasi-universal models (e.g. innovation systems) or best practice transfer (e.g. Silicon Valley). Courses in this module explore how regions bring global innovation imperatives in alignment with unique local social, cultural, and political contexts. The students acquire competencies to analyze and explain the ways in which regions imagine the purpose, meaning, and limits of innovation differently. This perspective allows the participants to understand the situatedness and inter-regional diversity in the rationalization and practice of innovation policy.

Intended Learning Outcomes:

When completing the module, the students are able to identify and discuss key concepts from the social sciences, particularly Science and Technology Studies (STS), and apply them to problems around regional innovation and the cultural forces that shape it. They have the capability to systematize, compare, and generalize complex empirical material in a reflexive and critical way. Students are able to interpret and explain technological innovation as a social process, including the sociomaterial co-production of physical infrastructures and artifacts with regional institutions, political histories, and regional identities. They are proficient in creating conceptually informed arguments that identify region-specific patterns and recurring tensions in a world shaped by technology, and speak about them with confidence in the context of their own academic and professional interests. Upon completion of this module, participants can develop and justify better kinds of innovation policy that take the normative, political, and epistemic underpinnings of the economy more seriously. Students can also demonstrate how to reconceive established notions of "success" of governmental and corporate innovation strategies. Such a reflexive perspective will allow them to evaluate the generalizability of seemingly universal solutions and to imagine new inroads for inclusive and democratic governance in innovation.

Teaching and Learning Methods:

Courses in this module are conceptually dense, reading-heavy, interdisciplinary, and student-driven. They require an exceptional degree of commitment, intellectual curiosity, and time investment.

Guided by the course instructors, the participants acquire a number of conceptual lenses and analytical skills through self-study of the literature from a number of fields, including sociology, political science, human geography, science and technology studies, and innovation studies. In class, the students discuss interactively different approaches to the particular issues and cases under consideration to develop their creative and reflexive capabilities. The classes are predominantly interactive and include group as well as individual teaching methods.

Media:

Powerpoint and flipchart presentations in class. Communication and distribution of materials via Moodle: academic literature, discussion forums, additional web resources, course documentation, etc.

Reading List:

Jasanoff, S., Kim, S.-H., 2009. Containing the Atom: Sociotechnical Imaginaries and Nuclear Power in the United States and South Korea. *Minerva* 47 (2), 119–146. doi:10.1007/s11024-009-9124-4.

Engels, F., Wentland, A., Pfotenhauer, S.M., 2019. Testing future societies?: Developing a framework for test beds and living labs as instruments of innovation governance. *Research Policy* 48 (9), 103826. doi:10.1016/j.respol.2019.103826.

Pfotenhauer, S., Jasanoff, S., 2017. Panacea or diagnosis?: Imaginaries of innovation and the 'MIT model' in three political cultures. *Social Studies of Science* 47 (6), 783–810. doi:10.1177/0306312717706110.

Responsible for Module:

Pfotenhauer, Sebastian; Prof. Dr. rer. nat.

Courses (Type of course, Weekly hours per semester), Instructor:

Innovation in the Periphery? Industrial Legacies, Economic Transitions, and the Politics of "Lost Places" (Seminar, 2 SWS)
Wentland A

Innovation in the Periphery? Industrial Legacies, Economic Transitions, and the Politics of "Lost Places" (Seminar, 2 SWS)

Wentland A

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

WI001220: Network Economics I | Network Economics I [NE I]

Introduction to Network Economics

Version of module description: Gültig ab summerterm 2019

Module Level: Master	Language: English	Duration: one semester	Frequency: winter semester
Credits:* 6	Total Hours: 180	Self-study Hours: 60	Contact Hours: 120

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

The examination consists of a case study / academic elaboration, including a research paper (grade contribution 60%) and in-class presentation (grade contribution 40%). The paper will reveal students' understanding of theories and methods, and their ability to apply those to analyze real-world situations.

Repeat Examination:

End of Semester

(Recommended) Prerequisites:

Microeconomics 1

Content:

The lectures will introduce the concept of network and game-theoretic models. Then, a series of real-world networks will be discussed, helping students understand how coalitions/supply chains/alliances formed. Finally, the attention will be given to a wide range of studies focusing on strategic interactions in networks.

Intended Learning Outcomes:

Upon successful completion of the course, students will be equipped to continue their education on network theory, be able to recognize economic and social networks, and see their importance in decision analysis.

Teaching and Learning Methods:

Presentation of theoretical concepts and models, in-class discussions of real-world networks, use of teacher-developed software tools

Media:

Reading List:

Group Formation in Economics: Networks, Clubs, and Coalitions, edt. by G. Demange and M. Wooders, Cambridge University Press, 2005.

Networks, Crowds, and Markets: Reasoning about a Highly Connected World by D. Easley and J. Kleinberg, Cambridge University Press, 2010.

Social and Economic Networks by Matthew Jackson, Princeton University Press, 2008

Responsible for Module:

Ikonomikova, Svetlana; Prof. Ph.D.

Courses (Type of course, Weekly hours per semester), Instructor:

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

WI001221: International Trade I | International Trade I [IT I]

Foundations of the International Economics

Version of module description: Gültig ab summerterm 2019

Module Level: Master	Language: English	Duration: one semester	Frequency: winter semester
Credits:* 6	Total Hours: 180	Self-study Hours: 60	Contact Hours: 120

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

The examination consists of a the case study academic elaboration, including a written essay (grade contribution 60%) and in-class presentation (grade contribution 40%). The essay will reveal students' understanding of theories and methods, and their ability to apply those to real-world problems.

Repeat Examination:

Next semester / End of Semester

(Recommended) Prerequisites:

Microeconomics 1

Content:

Lectures cover international economics theory that underpins the understanding of international trade fundamentals: why countries trade, what determines trade patterns, and what the implications of trade are. The course introduces theoretical models along with the empirical studies helping students develop capabilities to participate in discussions related to international trade, formulate own questions and opinions, and analyze real-world developments.

Intended Learning Outcomes:

Upon successful completion students learn the key terms and concepts relevant in international trade discussions and will be able to apply theoretical models to analyze empirical data, such as trade statistics. Students will also be equipped to continue their education on international trade policy, foreign direct investments, international supply chains and multinational firms.

Teaching and Learning Methods:

Theoretical model development, discussion of their implementation, problem solutions, and real-world examples analysis

Media:

Reading List:

1. International Economics Theory & Policy
by Paul R. Krugman, Maurice Obstfeld, Marc J. Melitz, Pearson, 2017
2. International Trade: Theory and Evidence by James Markusen, James Melvin, William Kaempfer, and Keith Maskus, McGraw Hill, Boston, 1995.

Responsible for Module:

Ikonnikova, Svetlana; Prof. Ph.D.

Courses (Type of course, Weekly hours per semester), Instructor:

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

WI001226: International Trade II | International Trade II [IT II]

International Economics: Trade Policy and Multinational Firms

Version of module description: Gültig ab winterterm 2019/20

Module Level: Master	Language: English	Duration: one semester	Frequency: summer semester
Credits:* 6	Total Hours: 180	Self-study Hours: 60	Contact Hours: 120

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

The examination consists of a presentation of the case study results, including a written report and in-class presentation. The reports are a means to assess the students' understanding of theories and methods, their ability to apply them to real-world problems.

Repeat Examination:

End of Semester

(Recommended) Prerequisites:

Microeconomics 1

Content:

This course, built on the concepts and models of international trade theory, introduces the major instruments and rational for the international trade policy, examines the implications of such policies for international organizations, multinational firms, and capital allocation or investments. The lectures will be complemented by seminars or tutorials, discussing the implementations of theoretical models for case studies and empirical research.

Intended Learning Outcomes:

Upon successful completion students will be able to understand and participate in international trade policy debates, analyze strategies of multinational firms, and development of international supply chains.

Teaching and Learning Methods:

The lectures review the advances in international trade theory, models to understand and analyze international trade policies and its implications. Special attention will be given to the behavior and impact of trade on multinational firms international, international trade wars, link between trade

and endogenous growth. The course develops analytical instruments required to understand and analyze empirical evidence and real-world problems.

Media:

Reading List:

- International Economics Theory & Policy by Paul R. Krugman, Maurice Obstfeld, Marc J. Melitz, Pearson, 2017.
- International Trade: Theory and Evidence by James Markusen, James Melvin, William Kaempfer, and Keith Maskus, McGraw Hill, Boston, 1995.
- Advanced International Trade by Robert C. Feenstra, Princeton University Press, Princeton, 2004.
- International Trade Theory: Capital, Knowledge, Economic Structure, Money, and Prices over Time by Wei-Bin Zhang, Springer-Verlag, 2008.
- Handbook of International Trade, edited by E. Kwan Choi and James Harrigan, Blackwell, 2003.

Responsible for Module:

Ikonnikova, Svetlana; Prof. Ph.D.

Courses (Type of course, Weekly hours per semester), Instructor:

International Trade II (WI001226, englisch) Exercise (Übung, 2 SWS)

Ikonnikova S, Li G

International Trade II (WI001226, englisch) (Vorlesung, 2 SWS)

Ikonnikova S, Li G

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

WI001227: Network Economics II | Network Economics II [NE II]

Advances in Network Economics

Version of module description: Gültig ab winterterm 2019/20

Module Level: Master	Language: English	Duration: one semester	Frequency: summer semester
Credits:* 6	Total Hours: 180	Self-study Hours: 60	Contact Hours: 120

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

The examination consists of an in-class presentation of the case study results and a written report of investigation. The reports are a means to assess the students' ability to apply and interpret the learned models and methods, their ability to use the course materials in tackling real-world problems.

Repeat Examination:

End of Semester

(Recommended) Prerequisites:

Microeconomics 1

Content:

The lectures review fundamental concepts (discussed in Network Economics I) and discuss various network-formation games, models describing strategic interactions in networks with externalities, models on international networks and markets. Special attention will be given to correspondence of real-world networks to theoretical frameworks for analysis of efficiency, optimality, and evolution.

Intended Learning Outcomes:

Upon successful completion students will know a wide range of social and economic networks, how they differ and what determines their formation and evolution. Students will also have a set of instruments to analyze networks and their development.

Teaching and Learning Methods:

Presentation of theoretical concepts and models, in-class discussions of real-world networks, use of teacher-developed software tools

Media:

Reading List:

Group Formation in Economics: Networks, Clubs, and Coalitions, edt. by G. Demange and M. Wooders, Cambridge University Press, 2005.

Networks, Crowds, and Markets: Reasoning about a Highly Connected World by D. Easley and J. Kleinberg, Cambridge University Press, 2010.

Social and Economic Networks by Matthew Jackson, Princeton University Press, 2008

Responsible for Module:

Ikonomikova, Svetlana; Prof. Ph.D.

Courses (Type of course, Weekly hours per semester), Instructor:

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

WI001239: Master Thesis Research Seminar | Master Thesis Research Seminar

Version of module description: Gültig ab summerterm 2020

Module Level: Master	Language: English	Duration: one semester	Frequency: summer semester
Credits:* 3	Total Hours: 90	Self-study Hours: 60	Contact Hours: 30

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

The examination consists of a case study / academic elaboration, including a research paper (grade contribution 60%) and in-class presentation (grade contribution 40%). The paper will reveal students' understanding of the necessary theoretical material, methods to perform empirical analysis, and their ability to apply those to analyze real-world situations.

Repeat Examination:

End of Semester

(Recommended) Prerequisites:

Microeconomics 1

Content:

The seminars will review and discuss the concepts of supply chain, decision making under uncertainty, externalities, domestic and international competitiveness, energy transition, carbon neutrality, e-mobility, smart city

Intended Learning Outcomes:

Upon successful completion of the course, students will be equipped to perform research needed to complete their master thesis requirements

Teaching and Learning Methods:

Presentation of scientific material; in-class discussions of developments and challenges in the automobile industry, analysis and exercises exploring industry related data. Besides simulating company-like environment when students have to identify and solve management and strategic

development problems, the class would teach students to organize their thinking in formal terms and see broad implications of their analysis.

Media:

Reading List:

Responsible for Module:

Ikonnikova, Svetlana; Prof. Ph.D.

Courses (Type of course, Weekly hours per semester), Instructor:

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

WI001250: Advanced Seminar Economics, Policy & Econometrics: Current Topics in Value Chain Economics | Advanced Seminar Economics, Policy & Econometrics: Current Topics in Value Chain Economics [Seminar VCE]

Version of module description: Gültig ab summerterm 2020

Module Level: Master	Language: English	Duration: one semester	Frequency: winter/summer semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

Grading will be based on a project with presentation in form of teamwork. The results of the project are summarized in a written report (12-15 pages, 50% of the grade) and reported in an oral presentation (20 min., 50% of the grade) with subsequent discussion.

Repeat Examination:

Next semester

(Recommended) Prerequisites:

Knowledge in microeconomics

Content:

The module deals with the economic performance, efficiency, sustainability and fairness of food value chains from an applied perspective. Key topics of the module may thereby include: Coordination of supply chains (business relationships among different actors in supply chains: role of contracts, hybrid organizations, producer organizations etc. Role of small-size farms and farmers in local and global supply chains Market and bargaining power, (un)fair business practices Role of food labels and certification Current trends and their economic implications. Examples are the increasing relevance of regional/local products; healthy products; dietary trends. European-level and national-level policies affecting agro-food value chains.

Intended Learning Outcomes:

After successful completion of this module, students will have in-depth knowledge on how to conceptualize, plan and conduct a research project in food (and related) value chain and their governance. Moreover, students will be able to i) identify and structure a research topic, ii) procure

and screen relevant literature, iii) develop a study instrument; iv) write a scientific research report, iv) present their findings in front of their peers as well as v) entering and moderating a scientific discussion on their topic. The module thereby prepares students for the scientific analyses conducted in their master theses

Teaching and Learning Methods:

The module is a seminar and provides students with in-depth knowledge in the economics of value chains, with an emphasis on agro-food value chains. The seminar starts with a series of introductory lectures surrounding one or more selected state-of-the-art and policy-relevant topics. Priorities are given to topical topics for which the interest and involvement of external institutions (e.g., the European Union's Joint Research Centre) can be insured. Activities are typically carried out in parallel in coordination with other universities and students will have the opportunity to collaborate and exchange with students from those universities. Guided by the instructor(s) through the entire process, students will work alone and/or in groups to plan and carry out a topic-specific research project (e.g., development of a survey instrument, collection of data/information). Activities will include also literature search and scientific writing of a project report.

Media:

PowerPoint presentations, economic textbooks, scientific articles

Reading List:

- Allain, M. L., & Chambolle, C. (2005). Loss-leaders banning laws as vertical restraints. *Journal of Agricultural & Food Industrial Organization*, 3(1).
- Bonnet, C., & Dubois, P. (2010). Inference on vertical contracts between manufacturers and retailers allowing for nonlinear pricing and resale price maintenance. *The RAND Journal of Economics*, 41(1), 139-164.
- Chauve, P., Parera, A., & Renckens, A. (2014). Agriculture, Food and Competition Law: Moving the Borders. *Journal of European Competition Law & Practice*, 5(5), 304-313.
- European Parliament (2009) Fair revenues for farmers: A better functioning food supply chain in Europe, Resolution (2009/2237(INI))
- Maertens, M., & Swinnen, J. F. (2008). Standards as barriers and catalysts for trade, growth and poverty reduction. *Journal of International Agricultural Trade and Development*, 4(1), 47-61.
- Maglaras, G., Bourlakis, M., & Fotopoulos, C. (2015). Power-imbalanced relationships in the dyadic food chain: An empirical investigation of retailers' commercial practices with suppliers. *Industrial Marketing Management*, 48, 187-201.
- Menapace, Luisa, and GianCarlo Moschini. "Quality certification by geographical indications, trademarks and firm reputation." *European Review of Agricultural Economics* 39.4 (2012): 539-566.
- Ola, Oreoluwa, and Luisa Menapace. "A meta-analysis understanding smallholder entry into high-value markets." *World Development* 135 (2020): 105079.
- Ola, Oreoluwa, and Luisa Menapace. "Revisiting constraints to smallholder participation in high# value markets: A best#worst scaling approach." *Agricultural Economics* (2020).Ronnen, U. (1991). Minimum quality standards, fixed costs, and competition. *The RAND Journal of economics*, 490-504.

- Russo, C., Perito, M. A., & Di Fonzo, A. (2014). Using private food safety standards to manage complexity: a moral hazard perspective. *Agricultural Economics Review*, 15(389-2016-23512), 113-127.
- Russo, C., Perito, M. A., & Di Fonzo, A. (2017). 8. The apparent paradox of unadvertised private food safety standards1. It's a jungle out there—the strange animals of economic organization in agri-food value chains, 161.
- Saitone, T. L. (2012). Are Minimum Quality Standards Imposed by Federal Marketing Orders Acting as Nontariff Trade Barriers?. *Agribusiness*, 28(4), 483-504.
- Sexton R. (2017). Unfair Trading Practices in the Food Supply Chain: Defining the problem and the policy issues. In Marcantonio, F. Di and P. Ciaian (Editors), *Unfair trading practices in the food supply chain: A literature review on methodologies, impacts and regulatory aspects*, European Commission, Joint Research Centre.
- Vaqué, L. G. (2014). Unfair Practices in the Food Supply Chain: A Cause for Concern in the European Union's Internal Market which Requires an Effective Harmonising Solution. *European Food and Feed Law Review*, 9(5), 293-301.
- Von Schlippenbach, V., & Teichmann, I. (2012). The strategic use of private quality standards in food supply chains. *American Journal of Agricultural Economics*, 94(5), 1189-1201.

Responsible for Module:

Menapace, Luisa; Prof. Ph.D.

Courses (Type of course, Weekly hours per semester), Instructor:

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

WI001264: Advanced Seminar Economics, Policy & Econometrics: Decisions under Uncertainty from Description and from Experience | Advanced Seminar Economics, Policy & Econometrics: Decisions under Uncertainty from Description and from Experience

Version of module description: Gültig ab winterterm 2020/21

Module Level: Master	Language: English	Duration: one semester	Frequency: summer semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

Participants will work in small groups.

The formal requirements of this seminar consist of a. giving a presentation in front of their classmates and b. writing a seminar thesis.

For the presentation, participants will select a paper from a range of topics that will be discussed in the introductory lecture.

Participants are expected to be able to identify the key points of this paper as well as to communicate and to defend those points in front of a broader audience in an efficient and succinct way.

For the seminar thesis, participants will build on the paper/topic they selected for their presentation by exploring how the insights from the "Decisions from Experience" paradigm can be applied to the paper's core thesis. In doing so, they are expected to conduct a literature review, propose a research question and develop a study-design through which this question can be empirically tested.

The final grade will be based on the written seminar thesis (70%), but the group presentation of a research topic will allow students to improve their final grade (30%).

Repeat Examination:

End of Semester

(Recommended) Prerequisites:

Basic understanding of mathematical and statistical principles. Familiarity with microeconomics will be helpful, though not essential.

Content:

People very often make decisions under uncertainty regarding future consequences of their actions and their likelihood. Models in Economics often assume that people have full access to numerical descriptions of such uncertainty. In reality, however, people often inform their decisions from past experience. Recently, research in behavioral economics has demonstrated that the two forms of information: from description and from experience, can lead to very different types of decisions. This seminar provides an overview of the standard methods that Economists use to study decisions involving risk as well as the latest insights and methodology for studying such decision when information is obtained from experience. Participants will work in groups in order to prepare a presentation related to the selected topic as well as to develop a paper thesis where they implement the tools and concepts of decisions from experience in order to augment and/or reexamine the finding in the current literature of the selected topic. Each group will select one of the following, broadly defined, topics:

- a. Investment decisions
- b.
- Tax evasion, cooperation and punishment
- c. Medical
- decision making
- d. Consumer behavior

The seminar will equip participants with tools that are commonly applied in Behavioral Economics, such as theoretical modelling and the key principles of experimental methods.

Intended Learning Outcomes:

This seminar aims to 1) equip participants with the state of the art concepts of decisionmaking under risk or uncertainty 2) learn important methodological tools from Behavioural and Experimental Economics 3) develop their presentation skills by communicating the most important insights from their selected topic to their classmates. Moreover, participants 4) will practice their ability of conducting literature reviews and deriving important research gaps to their topic and summarize both main insights and research gaps. Finally, 5) participants will exercise their ability to think critically by coming up with an idea to further research in the specified area by enriching standard Economics principles with state of the art insights from Psychology.

Teaching and Learning Methods:

This module is a seminar. The introductory meeting will discuss the subtopics, and highlight some seminal findings in the area. In the first phase participants will concentrate on learning by reading relevant scientific literature, presenting one topic per group and discussing questions and interlinkages to related topics. In the second phase, students will produce a written paper in which they need to show their understanding of the respective topic, their capability to identify research gaps in the discussed literature as well as their critical thinking in discussing how an established line of research in Economics - related to the topic the group has selected - can be adjusted through the insights of the decisions from experience program.

Media:

Slides, Videos, Zoom-meeting, academic papers.

Reading List:

Indicative academic literature (further suggestions based on specific topics will be provided at the beginning of the seminar):

Hertwig, Ralph, et al. "Decisions from experience and the effect of rare events in risky choice." *Psychological science* 15.8 (2004): 534-539.

Hertwig, Ralph. "The psychology and rationality of decisions from experience." *Synthese* 187.1 (2012): 269-292.

Thaler, Richard H. "Behavioral economics: Past, present, and future." *American Economic Review* 106.7 (2016): 1577-1600.

Kahneman, Daniel, and Amos Tversky. "Prospect theory: An analysis of decision under risk." *Handbook of the fundamentals of financial decision making: Part I*. 2013. 99-127.

Simon, Herbert A. "The sciences of the artificial, 1969." Massachusetts Institute of Technology (1981).

Responsible for Module:

Goerg, Sebastian; Prof. Dr. rer. pol.

Courses (Type of course, Weekly hours per semester), Instructor:

Advanced Seminar Economics, Policy & Econometrics (WI001264, englisch): Decisions under Uncertainty from Description and from Experience (Limited places) (Seminar, 4 SWS)

Kopsacheilis O

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

WI001281: The Economics of Firm Competition | The Economics of Firm Competition [EconFirms]

Version of module description: Gültig ab winterterm 2020/21

Module Level: Master	Language: English	Duration: one semester	Frequency: summer semester
Credits:* 6	Total Hours: 180	Self-study Hours: 120	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

A written examination is deemed appropriate to test the ability of students to analyse static and dynamic strategic behaviour of firms. Specifically, it assesses whether students can explain the role of competition, market power and coordination in markets. Students have to prove that they understand and can analyze the impact of firm behavior and industry structure on welfare and evaluate the welfare effects of competition policy. Students will be permitted to use non-programmable calculators during the examination. The exam duration is 90 minutes.

Repeat Examination:

Next semester

(Recommended) Prerequisites:

Undergraduate class work in microeconomics or industrial organisation.

Content:

The course provides an overview about firm behaviour. Topics discussed include:

- Competition and market power in markets
- The structure of industries and markets
- Strategic interactions among firms
- Vertical relations and coordination in markets
- The effect of firm behaviour on industry efficiency and societal welfare

Intended Learning Outcomes:

After successfully completing the module, students will be able:

- To describe the various forms of market structure;
- To explain the role of competition, market power and coordination in markets;
- To apply analytical tools to analyse strategic firm behaviour and interactions;

- To understand the impact of firm behaviour and industry structure on welfare and competition policy.
- To explain coordination and the conditions for efficient coordination.

Teaching and Learning Methods:

The course combines lecture elements with an interactive approach. The professor presents key concepts and models through slides. Students are actively engaged in the learning process by independently working on selected steps of analytical models. This is followed by group discussions and reflections on the underlying intuition. The combination of developing analytical models and training intuition fosters the development of a solid understanding of the central themes of the course, particularly regarding strategic interactions between firms, vertical market relationships, and efficiency and social welfare.

Media:

Reading List:

Recommended textbook

- J. Church and R. Ware, Industrial Organization: A Strategic Approach, first edition, McGraw-Hill, 2000. (available for free online)

Other suggestions:

1. Jean Tirole: Industrial Organization.
2. Belleflamme and Peitz: Industrial Organization: Markets and Strategies.
3. Motta: Competition Policy: Theory and Practice

Responsible for Module:

Menapace, Luisa; Prof. Ph.D.

Courses (Type of course, Weekly hours per semester), Instructor:

The Economics of Firm Competition (WI001281, englisch): Vorlesung (Vorlesung, 2 SWS)

Menapace L

The Economics of Firm Competition (WI001281, englisch): Übung (Übung, 2 SWS)

Menapace L

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

WZ1564: Econometric Impact Analysis | Econometric Impact Analysis [EIA]

Version of module description: Gültig ab winterterm 2016/17

Module Level: Master	Language: English	Duration: one semester	Frequency: winter semester
Credits:* 6	Total Hours: 150	Self-study Hours: 90	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

At the end of the course students will be able to understand and apply the different state-of-the-art econometric impact evaluation techniques. Students will acquire the capability to evaluate diverse intervention contexts with a focus on agricultural and environmental projects and policy. Students will be able to design an evaluation of a policy intervention or environmental/development project. Examination procedure is a three-fold excercise: First, there will be a written test at the end of the semester, where students demonstrate their theoretical knowledge of the learned econometric methods. The questions in the test are based on the contents and exercises discussed in the lecture. Students are allowed to use non-programmable calculators and a formulary issued by the chair. The test comprises 30% of the grade and will be 60 minutes long. Second, there students need to write a term paper (15-20 pages) worth 60% of their grade. In the term paper they will demonstrate their capability of stating a research question applicable to an econometric impact evaluation. They will demonstrate their capability in choosing the appropriate data and method depending on their research question. Third, every student will hold a mid-term presentation comprising 10% of their grade to discuss and defend their choice of research question, data and method in front of their peers and teachers.

Repeat Examination:

End of Semester

(Recommended) Prerequisites:

Bachelor's level econometrics or statistics

Content:

'The course will introduce concepts and quantitative techniques to evaluate impacts of conservation measures, such as payments for environmental services, integrated conservation and development projects, and the enforcement of regulatory policies.'

Role of impact evaluation in guiding the design of agri-environmental conservation measures, i.e., in the context of regional agri-environmental payments or in development project design, e.g. works of the J-Pal.

Students will be familiarized with:

- randomized experimental trials,
- instrumental variables,
- regression discontinuity design,
- difference-in-differences,
- different types of matching.

Overview of methods and related debates will be given and discussed with the students: Topics like black-box versus theory-based impact evaluation; counterfactual analysis, experimental versus non-experimental design, selection bias, impact heterogeneity, and estimation methods will be discussed using different case studies of agri-environmental policies.

Intended Learning Outcomes:

At the end of the course students will be able to understand and apply the different state-of-the-art econometric impact evaluation techniques. Students will acquire the capability to evaluate diverse intervention contexts with a focus on agricultural and environmental projects and policy. Students will be able to design an evaluation of a policy intervention or environmental/development project.

Teaching and Learning Methods:

Lectures will be assisted by PowerPoint presentations in order to explain the theoretical concepts behind the methods discussed. Reading material for students will be provided to give students state-of-the-art examples of the applied methods. Theory will be illustrated by example exercises given by the lecturers on the whiteboard and in Stata/R on a computer. Additionally, half of the lectures will be allocated to exercises, where students can practice under supervision with the help of the lecturers. Also, participants will learn how to conduct an impact evaluation by doing a mock evaluation as a term paper. Going through the whole process of searching for and cleaning data to answer their impact evaluation question, they will get a hands on experience of the whole impact evaluation process. This will be done with guidance by the teaching staff.

Media:

Power point or Prezi presentations; Beamer; Whiteboard; Moodle course to provide materials (pdf of papers to read); STATA/ R or other Program

Reading List:

Angrist, J. D., & Pischke, J. S. (2014). Mastering'metrics: The path from cause to effect. Princeton University Press.

Angrist, J. D., & Pischke, J. S. (2008). Mostly harmless econometrics: An empiricist's companion. Princeton University Press.

Journal papers corresponding to each of the topics and materials for exercises (data-sets).

Responsible for Module:

Johannes Sauer jo.sauer@tum.de

Courses (Type of course, Weekly hours per semester), Instructor:

Econometric Impact Analysis (WZ1564, englisch) (Vorlesung, 4 SWS)

Sauer J [L], Mennig P

For further information in this module, please click [campus.tum.de](#) or [here](#).

Module Description

WZ1705: Applied Statistics and Econometrics | Applied Statistics and Econometrics

Version of module description: Gültig ab summerterm 2014

Module Level: Master	Language: English	Duration: one semester	Frequency: winter semester
Credits:* 5	Total Hours: 150	Self-study Hours: 90	Contact Hours: 60

Number of credits may vary according to degree program. Please see Transcript of Records.

Description of Examination Method:

Prüfungsdauer (in min.): 120.

The course covers the understanding of data generating processes of economic data and the selection and application of econometric models for their analysis. The students acquire methodological knowledge and analytical competences. After completing the course the students can reproduce and apply the methods learned in the lecture and lab exercises. A written examination is deemed the most appropriate mode of examination. The written examination includes a theoretical part with short questions (20 min.) and a second part with estimation of econometric models and analysis and interpretation of the results. Students are allowed to use the econometric software on a computer, a short formula collection (2 DinA4 handwritten pages) can be brought to the written exam. The examination result contributes 100% towards to the final course mark. The examination carries a pass mark of at least 50%.

Repeat Examination:

Next semester

(Recommended) Prerequisites:

An undergraduate course in applied statistics covering random variables, sampling, hypothesis testing, simple regression analysis, multiple regression analysis, assumptions for linear regression models with nonstochastic explanatory variables.

Content:

Introduction: Random variables, measuring scales and sampling procedures.

The linear model.

Properties of regression coefficients and hypothesis testing.

Multiple regression analysis.

Dummy variables.

Heteroscedasticity.
Time Series Analysis.
Panel Data.
Stochastic regressors and measurement errors.
Binary choice and limited dependent variables.
Simultaneous equation estimation.

Intended Learning Outcomes:

After successfully completing the module, students will have a thorough understanding of the application of the basic econometrics methods outlined above in the section "Inhalt" [Course Contents] that have become indispensable for a proper understanding of the current literature in the spheres of economics, business and management. With the econometric tools learnt, students will be capable of independently analysing economic data of cross-section, time series and panel structure. The students are able to describe the data, select the appropriate models, perform tests on the data structure and know the economic interpretation of the estimation results.

Teaching and Learning Methods:

Lectures will be used to teach econometric assumptions and models. Exercises will be used to apply the models taught in the lectures to provided data sets and applied economic analysis questions.

Media:

Teaching aids employed include: a white board, textbooks, hand-outs, data sets, econometric software, an abbreviated manual to the software.

Reading List:

Dougherty, Christopher (2011) Introduction to Econometrics. 4th ed. Oxford: Oxford University Press. (3rd ed.: 2007)
- Other relevant books and papers will be discussed during lectures.

Responsible for Module:

Johannes Sauer Prof. Dr. (jo.sauer@tum.de)

Courses (Type of course, Weekly hours per semester), Instructor:

Applied Statistics and Econometrics (WZ1705, englisch) (Übung, 2 SWS)
Sauer J [L], Sala P

Applied Statistics and Econometrics (WZ1705, englisch) (Vorlesung, 2 SWS)
Sauer J [L], Vrachioli M
For further information in this module, please click [campus.tum.de](#) or [here](#).