UNIVERSITY OF MANNHEIM
Department of Economics

Course Catalog
Spring Semester 2021

MASTER OF ECONOMICS

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Contents

Compulsory Modules for the Competition and Regulation Economics Track

Module number and title	E505 Industrial Organization: Markets and Strategies
Usability of the module	Compulsory course for Master in Economics with specialization Competition and Regulation Economics, elective course for Master in Economics with specialization Economics
Responsible teacher	Prof. Dr. Martin Peitz
Cycle of offer	Each spring semester
ECTS credits	14
Teaching method (hours per week)	Lecture (4) + exercise (2)
Workload	420 working hours, including 63 hours of class time and 357 hours of independent studies and exam preparation
Course language	English
Prerequisites	E601- E603 (or equivalent; this course is only suitable for Economics students)
Grading	Final exam (180 min)
Goals and contents of the module	This course covers the theory of industrial organization. It provides an overview of modern industrial organization with an emphasis of the theory and formal models. Models are adapted to tackle concrete problems. Students are provided with a toolkit and are encouraged to think strategically. Theoretical analyses are complemented by case studies and background knowledge of competition policy. Organization: 1. Introduction; 2. Market Power; 3. Sources of Market Power; 4. Pricing and Market Segmentation 5. Product Quality and Information; 6. Theory of Competition Policy; 7. R&D and Intellectual Property; 8. Networks, Standards, and Systems; 9. Intermediation.
Expected competences acquired after completion of the module	Ability to develop industrial organization models, ability so solve industrial organization models, ability to analyze business and competition cases.
Further information	Essential reading: Paul Belleflamme and Martin Peitz (2015), Industrial Organization: Markets and Strategies, 2nd edition, Cambridge University Press
Expected number of students in class	30
Contact person	Name: Prof. Dr. Martin Peitz; Email: martin.peitz@gmail.com;

Module number and title	E5046 Empirical Industrial Organization
Usability of the module	Compulsory course for M. Sc. Economics with specialization Competition and Regulation Economics, elective course for M. Sc. Economics
Responsible teacher	Prof. Nicolas Schutz, Ph.D.
Cycle of offer	Each spring semester
ECTS credits	7
Teaching method (hours per week)	Lecture (2) + exercise (1)
Workload	210 working hours, including 31.5 hours of class time and 178.5 hours of independent studies and exam preparation
Course language	English
Prerequisites	E601- E603 (or equivalent; this course is only suitable for Economics students)
Grading	Final exam (120 min)
Goals and contents of the module	This course is designed to provide an introduction to empircal methods in industrial organization, with a focus on antitrust issues. This course covers the traditional topics in empirical industrial organization and antitrust: Demand estimation, supply estimation, measurement of market power, productivity estimation, and horizontal mergers. The aim is to provide students with the knowledge of the standard models and approaches and introduce them to modern research questions. This course is organized in lectures complemented by computer sessions. The software used is Matlab.
Expected competences acquired after completion of the module	Students acquire methodological skills and programming skills in the field of empirical industrial organization. Those skills can be applied to answer empirical questions in industrial organization and antitrust policy.
Expected number of students in class	30
Contact person	Name: Prof. Nicolas Schutz, Ph.D.; Phone: (0621) 181-1872; Email: schutz@uni-mannheim.de

Module number and title	E5051 Mannheim Competition Policy Forum
Information	The last couple of years have seen a remarkable increase in the application of economic insights to competition problems. In order to further promote and refine this development, practitioners need to understand how microeconomics can help to shed light on particular aspects of competition problems. At the same time, academics benefit from a better understanding of real-world challenges and institutional details. The forum aims at providing a platform for the discussion of recent cases, general competition policy issues, and relevant academic research in the field. Renowned practitioners and academics will be invited to present their views on cases and general policy questions, followed by a discussion of the economic implications with the audience. Starting from the autumn semester 2017, the MCPF is an official part of two master's programs at the University of Mannheim. Participation is compulsory for economics students in the competition and regulation track and for law students in the master on competition and regulation law.

Module number and title	Competition Law
Usability of the module	Compulsory course for Master in Economics with specialization Competition and Regulation Economics
Responsible teacher	Prof. Dr. Friedemann Kainer
Cycle of offer	Each spring semester
ECTS credits	5
Teaching method (hours per week)	Lecture (2)
Workload	150 working hours, including 21 hours of class time and 129 hours of independent studies and exam preparation
Course language	English
Prerequisites	none
Grading	Final exam (120 min)
Goals and contents of the module	The course familiarizes students with the essential concepts of competition law and introduces them to the legal tools available to competition authorities and private parties. The course will put a particular emphasis on those aspects of competition law which rely heavily on economic findings. Students will be invited to discuss the interplay between competition law and economics on the examples of

	cartels, the abuse of market power, and merger control. Numerous cases and examples provide a close link to the practice of competition law.
Expected competences acquired after completion of the module	Students will be able to understand competition law cases and to follow current developments in competition law and policy, e.g., the role of competition law in a digital economy. They will learn how economic arguments can be used in a legal discourse and how law and economics interact in the field of competition law.
Further information	Legal texts will be provided. Further reading: Fox/Gerard, EU Competition Law, 2017; Lorenz, Introduction to EU Competition Law, 2013; Wish/Bailey, Competition Law, 8.ed., 2015.
Expected number of students in class	15
Contact person	Name: Prof. Dr. Friedemann Kainer; Email: lskainer@uni-mannheim.de

Elective Modules: Lectures

Module number and title	E505 Industrial Organization: Markets and Strategies
Usability of the module	Compulsory course for Master in Economics with specialization Competition and Regulation Economics, elective course for Master in Economics with specialization Economics
Responsible teacher	Prof. Dr. Martin Peitz
Cycle of offer	Each spring semester
ECTS credits	14
Teaching method (hours per week)	Lecture (4) + exercise (2)
Workload	420 working hours, including 63 hours of class time and 357 hours of independent studies and exam preparation
Course language	English
Prerequisites	E601- E603 (or equivalent; this course is only suitable for Economics students)
Grading	Final exam (180 min)
Goals and contents of the module	This course covers the theory of industrial organization. It provides an overview of modern industrial organization with an emphasis of the theory and formal models. Models are adapted to tackle concrete problems. Students are provided with a toolkit and are encouraged to think strategically. Theoretical analyses are complemented by case studies and background knowledge of competition policy. Organization: 1. Introduction; 2. Market Power; 3. Sources of Market Power; 4. Pricing and Market Segmentation 5. Product Quality and Information; 6. Theory of Competition Policy; 7. R&D and Intellectual Property; 8. Networks, Standards, and Systems; 9. Intermediation.
Expected competences acquired after completion of the module	Ability to develop industrial organization models, ability so solve industrial organization models, ability to analyze business and competition cases.
Further information	Essential reading: Paul Belleflamme and Martin Peitz (2015), Industrial Organization: Markets and Strategies, 2nd edition, Cambridge University Press
Expected number of students in class	30
Contact person	Name: Prof. Dr. Martin Peitz; Email: martin.peitz@gmail.com

Module number and title	E528 Financial Economics
Usability of the module	Elective course for M.Sc. Economics
Responsible teacher	Prof. von Thadden / Zaici Li, Ph.D.
Cycle of offer	Irregular
ECTS credits	7
Teaching method (hours per week)	Lecture (2) + exercise (1)
Workload	210 working hours, including 31.5 hours of class time and 178.5 hours of independent studies and exam preparation
Course language	English
Prerequisites	E601- E603 (or equivalent)
Grading	Midterm exam (45 min, 30%), final exam (90 min, 70%)
Goals and contents of the module	The course covers the basic theory of finance, including both asset pricing and corporate finance. The course will start with choice under uncertainty and general equilibrium under uncertainty. It will then cover portfolio choice theory and the different asset pricing models (such as CAPM and consumption CAPM). In the last part, it will cover the basics of corporate finance (including the MM theorem, static trade-off theory, financing under asymmetric information, and moral hazard).
Expected competences acquired after completion of the module	Upon successful completion of the module, the students should understand the fundamental questions of financial economics: how are asset prices determined and how are firms financed. They will also acquire the necessary tools to understand more advanced asset pricing and corporate finance models.
Further information	There are a three main references for the course, which differ for the four parts of the course: 1. Choice under uncertainty: Microeconomic Theory by Mas-Colell, Whinston and Green, Oxford University Press 1995 2. Financial Decisions and Markets: A Course in Asset Pricing by John Campbell, Princeton University Press 2017 3. General equilibrium under uncertainty: Microeconomic Theory by Mas-Colell, Whinston and Green, Oxford University Press 1995 4. Portfolio choice and asset pricing: Financial Decisions and Markets: A Course in Asset Pricing by John Campbell, Princeton University Press 2017 5. Corporate finance: The theory of corporate finance by Jean Tirole, Princeton University Press 2006

Expected number of students in class	25
Contact person	Name: Zaici Li, Ph.D.; Email: z.li@uni-mannheim.de

Module number and title	E557 Public Economics
Usability of the module	Elective course for M.Sc. Economics
Responsible teacher	Prof. Duk Gyoo Kim, Ph.D.
Cycle of offer	Once a year
ECTS credits	7
Teaching method (hours per week)	Lecture (2) + exercise (1)
Workload	210 working hours, including 31.5 hours of class time and 178.5 hours of independent studies and exam preparation
Course language	English
Prerequisites	E601- E603 (or equivalent)
Grading	Final exam (120 min)
Goals and contents of the module	This course focuses on the state's role in correcting market failures and on the optimal use of taxes. We will take a normative perspective, i.e., we ask what an ideal state would do in order to achieve distributive objectives. It will be composed by two parts. The first part will deal with market failures and public intervention. The second part will be devoted to tax theory. Part I: Market failures and public intervention 1. Public Goods 2. Externalities 3. Asymmetric Information 4. Price vs. quantity regulations 5. Local public goods Part II: Tax theory 1. Introduction to Taxation 2. Optimal commodity taxation 3. Many Person Ramsey Tax Rule 4. Production Efficiency Theorem 5. Non-linear taxation of income 6. Ricardian Equivalence 7. Tax Smoothing problem

Expected competences acquired after completion of the module	The course introduces the core topics in Public Economics. The course should prove useful for any student interested in analyzing policy issues.
Further information	Lecture notes will be available. Useful references are: Atkinson and Stiglitz, Lectures on Public Economics, Mc Graw-Hill, 1980 Rosen, Public Finance, 3rd Edition, 1992, Irwin, Boston. Salanié: Microeconomics of market failures Cornes and Sandler: The theory of externalities, public goods and club goods Salanie, The economics of taxation, MIT Press, 2003 Myles, Public Economics, Cambridge University Press, 1995 Mas-Collel, Whinston, Green, Microeconomic Theory, Harvard University Press 1996 Stiglitz, "Economics of the Public sector", 3rd Edition, 2000, Norton & Company. Hindriks and Myles, "Intermediate Public Economics", MIT Press.
Expected number of students in class	8-10
Contact person	Name: Prof. Duk Gyoo Kim, Ph.D.; Email: d.kim@uni-mannheim.de

Module number and title	E563 Game Theory
Usability of the module	Elective course for M.Sc. Economics
Responsible teacher	Daniel Savelle, Ph.D.
Cycle of offer	Each spring semester
ECTS credits	7
Teaching method (hours per week)	Lecture (2) + exercise (1)
Workload	210 working hours, including 31.5 hours of class time and 178.5 hours of independent studies and exam preparation
Course language	English
Prerequisites	E601- E603 (or equivalent)
Grading	Final exam (120 min)

Goals and contents of the module	This course provides a thorough treatment of game theory, which is a formal framework for analyzing strategic interactions. It revisits, expands on, and complements the game-theoretic concepts introduced in E601 Advanced Microeconomics. Covering static and dynamic games of complete and incomplete information, this course defines suitable solution concepts and discusses various economic applications. The exercises allow students to familiarize themselves with the use of game-theoretic tools and to study further applications.
Expected competences acquired after completion of the module	The students know game theory at an advanced level. They are able to describe strategic interactions formally, identify and apply suitable solution concepts, and critically evaluate the resulting prediction of behavior and outcomes. Moreover, the students understand the key ideas of game-theoretic reasoning used in academic research in economics and other disciplines.
Expected number of students in class	20
Contact person	Name: Dr. Daniel Savelle; Email: dssavelle@gmail.com

Module number and title	E581 International Trade
Usability of the module	Elective course for M.Sc. Economics
Responsible teacher	Prof. Lei Li
Cycle of offer	Each spring semester
ECTS credits	7.5
Teaching method (hours per week)	Lecture (3)
Workload	210 working hours, including 31.5 hours of class time and 178.5 hours of independent studies and exam preparation
Course language	English
Prerequisites	E601-603 (or equivalent); experience with statistical software such as Stata will be helpful
Grading	Assignments (100%)
Goals and contents of the module	International trade has always generated a great deal of controversy. By focusing on the determinants, patterns, and effects of international trade, this course demystifies some of the complex issues that surround discussions of globalization. Why do countries trade with each other? Who gains and who loses from international trade? What are the labor market consequences of international trade, and is trade liberalization

	responsible for rising inequality? Why do countries have trade disputes? Our first goal is to introduce the canonical models in international trade. A tentative list of topics includes the gravity equation, neoclassical trade theory, trade and labor markets, economic geography, and the role of firms in international trade. The second goal is to present the empirical tools used in international trade. A tentative list of topics includes the US-China trade war, trade and labor market, and the gravity equation. Students will also get familiar with several widely used trade-related datasets and learn how to conduct empirical analysis. Our third goal to introduce frontier researches to students. We will draw on some recent academic papers from international trade, which will allow students to have a good understanding of cutting-edge researches and help students outline future research questions.
Expected competences acquired after completion of the module	Students will have a comprehensive knowledge of the core trade models and their empirical applications.
Expected number of students in class	15
Contact person	Prof. Lei Li, Ph.D.; Email: lei.li@uni-mannheim.de

Module number and title	E588 International Macroeconomics
Usability of the module	Elective course for M.Sc. Economics
Responsible teacher	Prof. Harald Fadinger, Ph.D.
Cycle of offer	Irregular
ECTS credits	9.5
Teaching method (hours per week)	Lecture (3) + exercise (1)
Workload	285 working hours, including 42 hours of class time and 243 hours of independent studies and exam preparation
Course language	English
Prerequisites	E601-603 (or equivalent)
Grading	Final exam (120 min)

Goals and contents of the module	The course offers an introduction to international macroeconomics at the graduate level, emphasizing theory and the use of formal dynamic macroeconomic models. Models are used to tackle concrete policy problems. Students are provided with a toolkit and are encouraged to think independently. Topics covered will include (time permitting): current accounts and global imbalances, open-economy real business cycle models, nominal and real exchange rates, nominal rigidities and monetary policy in open economies, financial and exchange rate crises, sovereign debt crises.
Expected competences acquired after completion of the module	The students know international macro models at an advanced level. They are able to understand and to analyze macroeconomic questions arising in the open economy using formal mathematical models. They are able to analyze concrete macroeconomic policy questions.
Further information	Maurice Obstfeld and Kenneth Rogoff (1996): Foundations of International Macroeconomics, MIT Press. Stephanie Schmitt-Grohe and Martin Uribe (2017): Open-economy Macroeconomics, Princeton University Press. Stephanie Schmitt-Grohe and Martin Uribe and Michael Woodford (2019): International Macroeconomics, Lecture Notes, NYU.
Expected number of students in class	20
Contact person	Name: Prof. Harald Fadinger, Ph.D.; Email: harald.fadinger@uni-mannheim.de

Module number and title	E5031 Applied Labour Economics
Usability of the module	Elective course for M.Sc. Economics
Responsible teacher	Dr. Asmus Zoch-Gordon
Cycle of offer	Each spring semester
ECTS credits	9
Teaching method (hours per week)	Lecture (2) + exercises (2)
Workload	270 working hours, including 33 hours of class time and 237 hours of independent studies and exam preparation
Course language	English
Prerequisites	E601-603 (or equivalent)
Grading	Written exam (100 min, 50%), home assignments (50%)

Goals and contents of the module	This course will focus on different micro-econometric models using actual empirical studies from the field of labour economics. Starting from the standard theory of competitive labour markets, we introduce the concept of human capital, to explain wage differences between individuals, and explore the role of education. Exploring the Mincer earnings function, discrimination and unemployment, the students will learn how to analyse actual labour data sets using Stata. The first part of the course will deal with linear panel data models and instrumental regressions, the second part will focus on discrete choice models. This course will end with the introduction of non-parametric estimators.
Expected competences acquired after completion of the module	Ability to use Stata to conduct independent micro-econometric analysis and apply advanced micro-economic models.
Further Information	Introductory literature: Wooldridge, Jeffrey M. (2002), Econometric Analysis of Cross Section and Panel Data, Cambridge, Mass.: MIT Press. Chapters 10-20. George J. Borjas, Labor Economics
Expected number of students in class	25
Contact person	Name: Dr. Asmus Zoch-Gordon; Email: zoch@uni-mannheim.de

Module number and title	E5035 Environmental Economics
Usability of the module	Elective course for M.Sc. Economics
Responsible teacher	Dr. Andreas Gerster
Cycle of offer	Each spring semester
ECTS credits	9.5
Teaching method (hours per week)	Lecture (3) + exercise (1)
Workload	285 working hours, including 42 hours of class time and 243 hours of independent studies and exam preparation
Course language	English
Prerequisites	E601-603 (or equivalent)
Grading	If possible, we will have a written exam on campus (120 min). Otherwise, we will have virtual oral exams (15 min per student).

Goals and contents of the module	This course is an introduction to the field of environmental economics at the graduate level. The first part of the course presents the economic theory of environmental policy. Based on the theory of externalities, a broad range of instruments for environmental policy will be analyzed from an economic point-of-view. The second part of the course deals with empirical methods for the valuation of environmental quality, which is required for cost-benefit-analysis and in the implementation of environmental policies. The third part of the course is dedicated to the economic analysis of international environmental problems. The fourth part of the course provides an introduction to topics in behavioral environmental economics.
Expected competences acquired after completion of the module	Ability to formulate and solve problems in environmental regulation using advanced economic theory and mathematical techniques. Ability to estimate willingness-to-pay for environmental quality using statistical methods. Understanding of strategic incentives in international negotiations over environmental problems.
Expected number of students in class	20
Contact person	Name: Dr. Andreas Gerster; Email: gerster@uni-mannheim.de

Module number and title	E5038 Empirical Macroeconomics: Shocks and Propagation
Usability of the module	Elective module for M.Sc. Economics
Responsible teacher	Prof. Dr. Matthias Meier
Cycle of offer	Each spring semester
ECTS credits	5
Teaching method (hours per week)	Lecture (2)
Workload	150 working hours, including 21 hours of class time and 129 hours of independent studies and exam preparation
Course language	English
Prerequisites	E601- E603 (or equivalent)
Grading	Final exam (90 min, 60%), problem sets (40%)
Goals and contents of the module	This course covers both methods and applications in empirical macroeconomics. On the methodological side, we first discuss narrative approaches to identify structural shocks and univariate methods to study their propagation. The second and larger methodological block covers structural vector autoregressive (SVAR)

	models. The focus will be on various identification strategies (e.g., short-run/long-run restrictions, sign restrictions, external instruments), but we will also cover inference, factor models, nonlinear models. The lectures, and even more so the assignment, introduce a range of applications. Those include the analysis of technology shocks, monetary policy shocks, and fiscal policy shocks.
Expected competences acquired after completion of the module	The course introduces students to the econometric theory and macroeconomic applications of structural vector autoregressions.
Further information	Recommended literature: Ramey (Handbook of Macroeconomics, Volume 2A, Chapter 2: Macroeconomic Shocks and Their Propagation) Kilian and Lütkepohl (Structural Vector Autoregressive Analysis, preliminary: see http://www-personal.umich.edu/~lkilian/book.html) Lütkepohl (New Introduction to Multiple Time Series Analysis, 2005)
Expected number of students in class	10
Contact person	Name: Prof. Dr. Matthias Meier; Email: m.meier@uni-mannheim.de

Module number and title	E5046 Empirical Industrial Organization
Usability of the module	Compulsory course for M.Sc. Economics with specialization Competition and Regulation Economics, elective course for M.Sc. Economics
Responsible teacher	Prof. Nicolas Schutz, Ph.D.
Cycle of offer	Each spring semester
ECTS credits	7
Teaching method (hours per week)	Lecture (2) + exercise (1)
Workload	210 working hours, including 31.5 hours of class time and 178.5 hours of independent studies and exam preparation
Course language	English
Prerequisites	E601-603 (or equivalent; this course is only suitable for Economics students)
Grading	Final exam (120 min)

Goals and contents of the module	This course is designed to provide an introduction to empirical methods in industrial organization, with a focus on antitrust issues. This course covers the traditional topics in empirical industrial organization and antitrust: Demand estimation, supply estimation, measurement of market power, productivity estimation, and horizontal mergers. The aim is to provide students with the knowledge of the standard models and approaches and introduce them to modern research questions. This course is organized in lectures complemented by computer sessions. The software used is Matlab.
Expected competences acquired after completion of the module	Students acquire methodological and programming skills in the field of empirical industrial organization. Those skills can be applied to answer empirical questions in industrial organization and antitrust policy.
Expected number of students in class	30
Contact person	Name: Prof. Nicolas Schutz, Ph.D.; Email: schutz@uni-mannheim.de

Module number and title	E5069 Power Analysis
Usability of the module	Elective course for M.Sc. Economics
Responsible teacher	Dr. Ingo Steinke
Cycle of offer	Irregular
ECTS credits	5
Teaching method (hours per week)	Lecture (2)
Workload	150 working hours, including 21 hours of class time and 129 hours of independent studies and exam preparation
Course language	English
Prerequisites	E601-603 (or equivalent)
Grading	Final exam (60 min)
Goals and contents of the module	For the planning of statistical studies it is important to know how to choose the sample size in order to be able to prove a specific effect. Moreover, it is useful to compute the power of a test under certain alternatives in order to know what conclusion can be made even if the null hypothesis is not rejected. In the lecture the power of tests is derived and computed under alternatives in several models, e.g., for simple t-tests and in variance, regression, and meta analysis models.

	The theory behind the formulas will be discussed. Using Stata the power of the tests is computed and sample size computations are performed.
Expected competences acquired after completion of the module	The students know distributional properties of the normal, t-, chi-square, and F-distribution and know how these distributions are constructed. For specific models the students can derive the formulas for the computation of the power. They can compute the power of tests using Stata and determine the sample size necessary to distinguish a specific effect.
Expected number of students in class	15
Contact person	Name: Ingo Steinke; Email: isteinke@rumms.uni-mannheim.de

Module number and title	E5076 Topics in Time Series Analysis
Usability of the module	Elective course for M.Sc. Economics
Responsible teacher	Dr. Mehdi Hosseinkouchack
Cycle of offer	Irregular
ECTS credits	9
Teaching method (hours per week)	Lecture (2) + exercise (2)
Workload	270 working hours, including 42 hours of class time and 228 hours of independent studies and exam preparation
Course language	English
Prerequisites	E601-603 (or equivalent)
Grading	Final exam (120 min, 70%) and assignments (30%)
Goals and contents of the module	This module discusses the following topics: 1. Univariate time series analysis – ARMA – Forecasting 2. Unit root testing 3. Spectral analysis 4. Long Memory and fractional integration 5. Conditional heteroscedasticity & stochastic volatility models 6. Panel Unit root testing This module is designed for Master students who already have some heard econometrics courses at the Bachelor's level and have a good knowledge on ordinary least squares and would like to delve into the world of time series analysis, possibly assume quantitative roles in

	financial industry or research centers in central banks or similar institutes. Those participants who would like to continue their studies at a PhD level will also benefit from this course. The course starts with a solid discussion on univariate time series models with a clear focus on the dynamics behind the well-known models for serial correlations, name **Autoregressive Moving Average** models [ARMA]. We then discuss **forecasting** time series, in details, both on theoretical and on applied grounds. We then delve into the realm of nonstationary time series, discussing how to tell stationary time series from non-stationary ones apart. **Unit root testing** is in particular important when assuming forecasting tasks and of course, when it comes to the analysis of macroeconomics or financial series. Discussing unit root testing, further, opens a natural path to follow towards the analysis of co-movements and the discussion of spurious regressions (which will just be briefly touched on but is out of the scope of this module). We will also discuss spectral analysis for time series that is aimed at detecting cyclical movements in time series. **Long memory processes** make for our next fruitful topic in this course. These processes play an important role for modeling time series whose temporal dependence dies out very slowly. After briefly discussing stochastic processes, we will discuss **conditional heteroscedasticity and stochastic volatility models** as our next topic. These are well-known models for time-varying variances, which are intrinsic to most financial series. The last topic we cover in this course is an extension of univariate unit root tests to panel data. **Panel unit root tests** are easy to trace in most international macroeconomic and international finance applications and in fact their name speaks for their relevance in such frameworks since the participants have already come to learn about unit root tests and their relevance for quantitative analysis. The course includes examples on each topic, analyzing different problems using a statistical software.
Expected competences acquired after completion of the module	Upon completing this course, the students will have a deep understanding of many important tools in time series analysis as well as topics in panel data analysis. The course has both applied and theoretical flavors and is meant to prepare the participants to assume graduate level quantitative roles and to possibly continue their studies at a PhD level as well. In particular, • the participants will grasp the ideas behind the dynamics of forecasting models using Autoregressive Moving Average models; • the participants will learn how to detect seasonal behaviors in time series; • the participants will learn what unit root tests are and will be able to apply such tests in respective frameworks where the explosive behavior of times series shall be taken care of properly; • the participant will learn models for time series with quite persistent autocorrelations, e.g. U.S. unemployment rate, and exhibit the so-called long memory;

	• the participants will learn how to model volatility for financial time series; • the participants will finally learn how to apply unit root tests in a panel data framework and will be able to distinguish between different testing procedures and merits of each; • the participants will learn to conduct their analyses based on the methods discussed above using a statistical software.
Further information	References used for this course are • Peter J. Brockwell and Richard A. Davis (1996) Introduction to Time Series and Forecasting, Springer. • In Choi (2015), Almost all about unit roots, Cambridge University Press. • James D. Hamilton (1994), Time Series Analysis, Princeton. • Uwe Hassler (2016), Stochastic Processes and Calculus: an elementary introduction with applications, Springer.
Expected number of students in class	20
Contact person	Name: Dr. Mehdi Hosseinkouchack; Email: hosseinkouchack@uni-mannheim.de

Module number and title	E5095 Nonparametric Econometrics
Usability of the module	Elective course for M.Sc. Economics
Responsible teacher	Prof. Cathrine Aeckerle-Willems
Cycle of offer	Irregular
ECTS credits	9.5
Teaching method (hours per week)	Lecture (3) + exercise (1)
Workload	285 working hours, including 42 hours of class time and 243 hours of independent studies and exam preparation
Course language	English
Prerequisites	E603 (or equivalent)
Grading	Final exam (90 min)
Goals and contents of the module	This course gives an introduction to nonparametric estimation from a theoretical and applied perspective. Nonparametric methods do not rely on the assumption that models can be described by finite-dimensional parameters. Instead, infinite-dimensional classes of targets under smoothness conditions are considered, e.g. a class of

	smooth density functions. The discussed methods are suitable in situations in which there is no apriori knowledge of the functional structures of the underlying models. Theoretical foundations will be provided and the techniques will be applied using statistical software. The course covers density estimation and regression problems based on kernel estimators. The theoretical part includes the introduction to concepts that are crucial to investigate the quality of estimation procedures in general. Within this framework, statistical properties of the estimators will be discussed such as consistency, upper bounds for estimation risk, asymptotic normality. We will encounter typical phenomena like the curse of dimensionality, which has attracted a great deal of attention and is a starting point for numerous developments in the analysis of big data.
Expected competences acquired after completion of the module	Upon completing this course, the students will have a working knowledge of classical nonparametric methods for estimation of functions that are statistically relevant. They will understand the theoretical background of these methods and they will be familiar with concepts that allow them to describe and assess the behavior of estimators with regard to the quality of estimation. The students can apply the discussed estimation procedures to data using statistical software. They are aware of the strengths and limitations of the nonparametric techniques introduced in the course.
Expected number of students in class	15
Contact person	Name: Prof. Cathrine Aeckerle-Willems; Email: aeckerle@uni-mannheim.de

Module number and title	E5102 Crisis after Crisis: Germany in the Interwar Period
Usability of the module	Elective course for M.Sc. Economics
Responsible teacher	PD Dr. Tobias A. Jopp
Cycle of offer	Irregular
ECTS credits	7
Teaching method (hours per week)	Lecture (2) + exercise (1)
Workload	210 working hours, including 31.5 hours of class time and 178.5 hours of independent studies and exam preparation
Course language	English
Prerequisites	E601-603 (or equivalent)

Grading	Final exam (120min)
Goals and contents of the module	This lecture provides an overview of the economic and social history of the Weimar Republic and the Third Reich until the outbreak of WWII. Taking into account the current state of research, the lecture discusses topics such as the Great Inflation, the reparation problem, the Great Depression, the National Socialists' rise to power, and the preparations for war.
Expected competences acquired after completion of the module	After completion of the course, participants are able to integrate knowledge from different fields (Economics, History, sociology); to acquire independently new knowledge and abilities regarding literature screening, review, and utilization, and regarding research methods; to communicate in the English specialist language of the particular field. Participants know about the basic aspects of the historical period under observation and are able to identify and communicate important events/processes and the pressing problems at the time. Participants are able to understand the specialist literature, to structure and compare research approaches, and to critically assess the validity of research methodologies and the related outcomes. Participants are able to identify open research questions and to design own research projects based on the methods of empirical research discussed in the course.
Further information	Introductory literature: Balderston, Theo, Economics and Politics in the Weimar Republic, Cambridge 2002. Broadberry, Stephen/O'Rourke, Kevin H., The Cambridge Economic History of Modern Europe. Volume 2: 1870 to the Present, Cambridge 2010 Knortz, Heike, Wirtschaftsgeschichte der Weimarer Republik, Göttingen 2010. Ogilvie, Sheilagh/Overy, Richard (eds), Germany: A New Social and Economic History Since 1800: v. 3: Since 1800, London 2003. Ritschl, Albrecht, Deutschlands Krise und Konjunktur 1924–1934. Binnenkonjunktur, Auslandsverschuldung und Reparationsproblem zwischen Dawes-Plan und Transfersperre, Berlin 2002. Spoerer, Mark/Streb, Jochen, Neue deutsche Wirtschaftsgeschichte des 20. Jahrhunderts, München 2013. Tooze, Adam, The Wages of Destruction: The Making and Breaking of the Nazi Economy, London 2006.
Expected number of students in class	15
Contact person	Name: PD Dr. Tobias A. Jopp; Email: Tobias.Jopp@ur.de

Elective Modules: Seminars

Module number and title	E506 Seminar on Human Capital Formation
Usability of the module	Elective course for M. Sc. Economics
Responsible teacher	PD Dr. Friedhelm Pfeiffer
Cycle of offer	Each spring semester
ECTS-Credits	5
Teaching method (hours per week)	Block seminar (2)
Workload	150 hours working hours for organizational meeting, block seminar, preparation of the seminar paper and presentation
Course language	English
Prerequisites	E601-603 (or equivalent); interest in research on the economics and econometrics of education and human capital formation
Grading	Seminar paper (60%), one page review of another seminar paper and short statement to all seminar papers (40%)
Goals and Contents of the module	In the seminar education and human capital formation will be discussed from a theoretical and empirical point of view. We will study initial life conditions, the role of investments by the individual, the family and educational institutions and their expected returns. Especially optimal investments into human capital over the life cycle are examined together with the role of families and educational institutions in financing and producing skills. The intentions, structures and limitations of important empirical studies in the field, like SOEP, PISA or NEPS will be investigated, together with educational policies and reforms.
Expected Competences acquired after completion of the module	Ability to write, present and defend an academic essay.
Further information	-
Expected number of students in class	10
Contact person	Name: PD Dr. Friedhelm Pfeiffer; Email: friedhelm.pfeiffer@zew.de

Module number and title	E530 Topics in Industrial Organization
Usability of the module	Elective course for M. Sc. Economics
Responsible teacher	Prof. Ph.D. Nicolas Schutz
Cycle of offer	Each spring semester
ECTS-Credits	5
Teaching method (hours per week)	Block seminar (2)
Workload	150 hours working hours for organizational meeting, block seminar, preparation of the seminar paper and presentation
Course language	English
Prerequisites	E601-603 (or equivalent)
Grading	Seminar paper (70%), presentation (30%)
Goals and Contents of the module	The seminar covers recent research papers in theoretical industry organization. Potential topics include horizontal merger, oligopolistic behavior, vertical relations, advertising, and consumer search. A reading list will be distributed at a later stage.
Expected Competences acquired after completion of the module	Students will gain knowledge in the modern literature on theoretical industry organization. Through reading recent research article, they will acquire an excellent command of the technical tools used by researchers contributing to this field. Relevant techniques include advanced game-theoretical tools (perfect Bayesian equilibrium and its refinements, repeated games) as well as mathematical tools (multivariate analysis and proof-writing skills). Students taking this course will be able to use this new knowledge as a starting point to start contributing in a research-oriented way to the theoretical industrial organization literature. Students will also broaden their presentation and discussion skills.
Further information	-
Expected number of students in class	10
Contact person	Name. Prof. Ph. D. Nicolas Schutz; Email: schutz@uni-mannheim.de

Module number and title	E576 Modeling & Applied Economics – Historical and Methodological Perspectives
Usability of the module	Elective course for M.Sc. Economics
Responsible teacher	Dr. Andrej Svorenčík
Cycle of offer	Irregular
ECTS credits	5
Teaching method (hours per week)	Block seminar (2)
Workload	150 working hours for organizational meeting, block seminar, preparation of the seminar paper and presentation
Course language	English
Prerequisites	E601-603 (or equivalent); for MMM and Business Mathematics students: good foundations in economic theory
Grading	Presentation (50 minutes, 50%), classroom discussion (10%), seminar paper (40%)
Goals and contents of the module	During the last two centuries, the way economic science is done has changed radically: it has become a social science based on mathematical models in place of words. The goal of this seminar is to illuminate the nature and the implications of these changes, explain how economists create(d) their models and how they reason with them. The participants can choose a project based on a series of case studies covered in the chapters of Mary Morgan's widely acclaimed book *The World in the Model: How Economists Work and Think* (2012). In addition, students will have to delve into the more technical details of the models that are not covered in the book.
Expected competences acquired after completion of the module	In this seminar, students learn to comprehend, present, critically evaluate and historically situate core economic models. As a result, they should gain knowledge of history of modern economics and better understand the practice of economic modeling.
Further information	Morgan, Mary S. *The World in the Model: How Economists Work and Think* [in English]. Cambridge; New York: Cambridge University Press, 2012. (available also online through the university library) The seminar consists of an introductory lecture and a seminar block where students present their topics.
Expected number of students in class	10

Contact person	Name: Dr. Andrej Svorenčík; Email: svorencik@uni-mannheim.de

Module number and title	E5028 Topics on Monetary Union
Usability of the module	Elective course for M.Sc. Economics
Responsible teacher	Prof. Dr. Antoine Camous
Cycle of offer	once a year
ECTS credits	5
Teaching method (hours per week)	Block seminar (2)
Workload	150 working hours for organizational meeting, block seminar, preparation of the seminar paper and presentation
Course language	English
Prerequisites	E601-603 or equivalent; for MMM and Business Mathematics students: good foundations in macroeconomics
Grading	The final grade will reflect both the content and the clarity of the presentation (30%), the report (40%), and the report refereed (30%).
Goals and contents of the module	To form a Monetary Union, countries renounce to independent monetary policy and exchange rate adjustments. They adopt a common currency, free capital circulation and centralize monetary policy. Still, substantial elements of economic policy (fiscal policy, labor market regulations, etc.) are kept being conducted at the national level. This seminar will review theoretical and empirical frontier research to address the following core questions: 1. Why would countries form a Monetary Union? 2. How to design institutions then? 3. How to measure the costs and benefits of a Monetary Union? The following paper is a starting point for the seminar: Mongelli (2002) – "New Views on the Optimum Currency Area Theory: What is EMU telling us?" - ECB WP 138
Expected competences acquired after completion of the module	Three interrelated objectives: 1. Review scientific research within its literature, extract its core idea and critically assess the relevance of the idea. 2. Communicate effectively (oral presentation and written reports) 3. Understand and apply the academic peer-review process. Each participant will be matched with a referee. The objective is to encourage collaborative review of both the content and the clarity of individual reports, and so to improve the presentation of academic research (both written and oral).

Further information	-
Expected number of students in class	5-15
Contact person	Name: Prof. Dr. Antoine Camous; Email: camous@uni-mannheim.de

Module number and title	E5054 Topics in Environmental and Energy Economics
Usability of the module	Elective course for M.Sc. Economics
Responsible teacher	Harim Kim, Ph.D.
Cycle of offer	Irregular
ECTS credits	5
Teaching method (hours per week)	Block seminar (2)
Workload	150 hours working hours for organizational meeting, block seminar, preparation of the seminar paper and presentation
Course language	English
Prerequisites	E601-E603 (or equivalent). Basic knowledge of empirical industrial organization and econometrics are advantageous.
Grading	Seminar participants will choose a paper from the reading list and present it in the seminar. Also, participants have to write a short seminar paper (max 10 pages) that summarizes and critically evaluates the paper they presented. Composition of final grade: presentation (50 %), seminar paper (50%)
Goals and contents of the module	The seminar covers recent research in environmental and energy economics. The course gives introduction to empirical studies of important topics in environmental and energy economics. The empirical papers we will study use a wide array of methods and approaches, ranging from theoretical modeling, to quasi-experimental research designs, to structural modelling and estimation. Topics include emissions reduction policy in the U.S. and EU, electricity market (market power and regulation) and natural resource market etc.
Expected competences acquired after completion of the module	Students have gained a broad understanding on selected recent trends in environmental and energy economics. They are able to apply their expertise and methods to analyse, discuss and evaluate issues of environmental and energy economics. The students have broadened and sharpened their analytical abilities as well as their presentation and discussion skills.

Further information	-
Expected number of students in class	10
Contact person	Name: Harim Kim, Ph.D.; Email: harimkim@uni-mannheim.de

Module number and title	E5063 IO and Development
Usability of the module	Elective module for M. Sc. in Economics
Responsible teacher	Prof. Helena Perrone
Cycle of offer	Each spring semester
ECTS credits	5
Teaching method (hours per week)	Block seminar (2)
Workload	150 hours working hours for organizational meeting, block seminar, preparation of the seminar paper and presentation
Course language	English
Prerequisites	E601-603 (or equivalent)
Grading	Seminar paper (50%), presentation (40%), and classroom discussion (10%)
Goals and content of the module	The course aims to cover relevant contributions in the recent but growing area Industrial Organization and Development, including IO of Developing Economies, how to adapt standard Competition Policy and productivity measurement models when markets are incomplete or inexistent, and IO methods applied to Development questions. The focus of the course is on empirical work.
Expected competences acquired after completion of the module	Students will acquire knowledge of the latest papers in the area of IO and Development. They will be able to recognize new possible applications and how previous literature in the area can be extended. By being exposed to the literature and participating in discussions, they will also develop skills that will enable them to approach problems related to IO in developing.
Further information	The reading list will be provided in the first meeting (in February). Presentations will be blocked in 2 days in April.

Expected number of students in class	10
Contact person	Name: Prof. Helena Perrone; Email: helena.perrone@uni-mannheim.de

Module number and title	E5083 Current Topics in Social Policies
Usability of the module	Elective module for M. Sc. in Economics
Responsible teacher	Han Ye, Ph.D.
Cycle of offer	Each spring semester
ECTS credits	5
Teaching method (hours per week)	Block seminar (2)
Workload	150 hours working hours for organizational meeting, block seminar, preparation of the seminar paper and presentation
Course language	English
Prerequisites	E601-603 or equivalent
Grading	Presentation (40%) seminar paper (60%)
Goals and content of the module	This seminar covers current research topics in empirical labor and public economics in order to expose students to some of the most recent open questions and tools used to address them in the field. We will study immigration; inequality and intergenerational mobility; how public policy and labor policy affect workers' decision makings; theories of gender discrimination in the labor market and explore the link between family structure; etc. Students will choose a paper from the reading list and present it in the seminar. Moreover, they will write a short seminar paper which summarizes and critically evaluates / presents the chosen paper.
Expected competences acquired after completion of the module	An important goal of the course is to provide students with the necessary knowledge to understand the most discussed labor topics. Students should have a good understanding of the application of economic theory and empirical methods to issues in current labor policy topics; learn to actively read and critically discuss research papers, and learn the necessary presentation skills to deliver their findings and work.
Further information	-

Expected number of students in class	13
Contact person	Name: Han Ye, Ph.D.; Email: han.ye@uni-mannheim.de

Module number and title	E5096 Economics of Corruption
Usability of the module	Elective course for M.Sc. Economics
Responsible teacher	Franziska Heinicke
Cycle of offer	once
ECTS credits	5
Teaching method (hours per week)	Block seminar (2)
Workload	150 working hours for organizational meeting, block seminar, preparation of the seminar paper and presentation
Course language	English
Prerequisites	E601-603 or equivalent
Grading	Term paper (60%), presentation (40%)
Goals and contents of the module	Corruption, defined as the abuse of entrusted power, remains a prevalent phenomenon across the world. Since democratic processes and economic interactions rely on well-functioning institutions, the political debate around corruption is focusing on how to fight corruption. In this seminar, we will consider economic literature on corruption in order to better understand the drivers of corruption; the impact corruption has on societies and possible tools to fight corruption. We will consider the relation between corruption and, among others, public institutions, culture, economic growth, foreign aid and education. Further, we will discuss policy interventions to reduce corruption such as information provision and whistleblower programs. The course focuses on empirical literature including studies utilizing cross-country corruption measures as well as experimental studies.
Expected competences acquired after completion of the module	The seminar will enable students to read and critically evaluate scientific papers in the field of corruption and to consider their contribution in the larger context of the literature. By writing and presenting a term paper students will further improve their skill in writing and presenting scientific work.
Further information	-

Expected number of students in class	10
Contact person	Name: Franziska Heinicke; Email: f.heinicke@uni-mannheim.de

Module number and title	E5097 Topics in International Economics
Usability of the module	Elective course for M.Sc. Economics
Responsible teacher	Prof. Harald Fadinger, Ph.D.
Cycle of offer	irregular
ECTS-Credits	5
Teaching method (hours per week)	Block seminar (2)
Workload	150 working hours for organizational meeting, block seminar, preparation of the seminar paper and presentation
Course language	English
Prerequisites	E601-603 (or equivalent)
Grading	Presentation (40%), term paper (40%), classroom discussion (20%)
Goals and Contents of the module	This seminar covers varying topics in international economics (depending on the students' interest), such as currency crises and sovereign debt crises, the impact of trade and offshoring on labor markets in developing and industrialized countries, the impact of trade on development/growth. A detailed overview can be found **here**. Students should ideally already have some knowledge of international economics (e.g. by having taken the lecture International Economics) and econometrics, since we will mostly discuss empirical papers. The course will have a seminar structure. Students will present academic articles in class and write a term paper. The seminar sessions will be scheduled in the organizational meeting, the date of which is to be announced.
Expected Competences acquired after completion of the module	The students will acquire the ability to understand and critically evaluate academic articles in the field of international economics. They will improve their competencies in scientific writing and further their presentation skills by presenting an academic paper.
Further info	-

Expected number of students in class	15
Contact person	Name: Prof. Harald Fadinger, Ph.D.; Email: harald.fadinger@uni-mannheim.de

Module number and title	E5099 Topics in Health Economics
Usability of the module	Elective course for M.Sc. Economics
Responsible teacher	Prof. Achim Wambach, Ph.D.
Cycle of offer	Once
ECTS-Credits	5
Teaching method (hours per week)	Block seminar (2)
Workload	150 working hours for organizational meeting, block seminar, preparation of the seminar paper and presentation
Course language	English
Prerequisites	E601-603
Grading	Seminar participants have to write a seminar paper (22,000 characters including spaces), in which they analyze a problem related to health economics in the context of one of the topics listed below. The paper has to be presented in class (20 minutes presentation + 10 minutes discussion). Composition of final grade: Seminar presentation (50%), report (50%)
Goals and Contents of the module	The seminar covers recent research on the economics of health care provision. The focus is on incentives of insurance and payment schemes. This seminar includes research on how insurance design affects treatment provision, how reimbursement schemes influence physician behavior as well as how payment for pharmaceuticals influences innovation as well as prescription patterns.
Expected Competences acquired after completion of the module	Students have gained knowledge in recent developments in health economics. They can apply their expertise and methods to analyze and evaluate ongoing debates in both the academic and the policy-oriented literature. The students have broadened their analytical and empirical abilities as well as their presentation and discussion skills.
Further info	-

Expected number of students in class	10
Contact person	Email: Kaja.vonCampenhausen@zew.de

Module number and title	E5103 Family Economics
Usability of the module	Elective course for M.Sc. Economics
Responsible teacher	David Koll, Ph.D.
Cycle of offer	Irregular
ECTS-Credits	5
Teaching method (hours per week)	Block seminar (2)
Workload	150 working hours for organizational meeting, block seminar, preparation of the seminar paper and presentation
Course language	English
Prerequisites	E601-603 (or equivalent)
Grading	Seminar paper (50%), presentation (40%), class participation (10%)
Goals and Contents of the module	In this seminar we will discuss current research in family economics. The range of topics includes taxation of households/families; how laws and public policies impact marriage and divorce; the effects of parenthood on labour market outcomes; fertility decisions; child development; the impact of family policies; how the Covid-19 crisis affected families, etc. The main focus of the course (with a few exceptions) will be on macro-style papers. Students will choose a paper from the reading list and present it in the seminar. They are expected to participate actively in discussions. After the presentation, they will write a seminar paper summarizing and critically evaluating the paper as well as briefly proposing potential extensions. Students are also expected to read some additional material which will be featured in a general discussion during the seminar (from voxEU, etc.).
Expected Competences acquired after completion of the module	Students will learn about the recent developments in the family economics literature and understand how the current literature can be extended. The seminar will help students to gain knowledge in economic modelling of family decision making and the application of different empirical methods. The students will develop skills to critically evaluate frontier research. Especially, they will practice to present main findings and to deliver their own discussions of the research. Finally, they will improve their writing skills.

Further info	-
Expected number of students in class	10
Contact person	Name: David Koll; Email: koll@uni-mannheim.de

Curriculum

The Economics Track			The Competition and Regulation Economics Track			The Economic Research Track		
Introductory Phase	**Exam (min)**	**ECTS credits**	**Introductory Phase**	**Exam (min)**	**ECTS points**	**Introductory Phase**	**Exam (min)**	**ECTS points**
Advanced Microeconomics	120	10	Advanced Microeconomics	120	10	Mathematics for Economists	120	6
Advanced Macroeconomics	120	10	Advanced Macroeconomics	120	10	Advanced Microeconomics	120	8
Advanced Econometrics	120	10	Advanced Econometrics	120	10	Advanced Macroeconomics	120	8
						Advanced Econometrics	120	8
Specialization Phase			**Specialization Phase: *Compulsory Modules***			**Specialization Phase: *Compulsory Modules***		
Specialized master courses including 2-4 seminars		60-66	Industrial Organization - Markets and Strategies		14	Advanced Microeconomics II	120	5
			Empirical Industrial Organization		7	Advanced Microeconomics III	120	5
			Competition Law		5	Advanced Macroeconomics II	120	5
			Interdisciplinary Competition and Regulation Seminar		5	Advanced Macroeconomics III	120	5
						Advanced Econometrics II	120	5
						Advanced Econometrics III	120	5
			Specialization Phase : *Elective Modules*			**Specialization Phase: *Elective Modules***		
			Specialized courses including 1-3 seminars		29 - 35	Specialized PhD courses and 1-2 seminars		40-46
						Specialization Phase: *Research Seminars*		
						CDSE seminar in the 3rd and 4th semester		0

						Faculty seminar		0
Research Phase			**Research Phase**			**Research Phase**		
Master's thesis (4 months), possibly including a thesis colloquium		30	Master's thesis (4 months), possibly including a thesis colloquium		30	Research thesis (11 weeks)		20
Total		**120-126**	**Total**		**120-126**	**Total**		**120-126**