ALFRED-WEBER-
INSTITUTE
FOR ECONOMICS

FACULTY OF
ECONOMICS AND
SOCIAL SCIENCES

UNIVERSITÄT
HEIDELBERG
ZUKUNFT
SEIT1386

Master‘s programme:

M.Sc. Economics

Module Handbook

Effective: 30.04.2025

Content

Preamble: Qualification Objectives at Heidelberg University

In line with the mission statement and the university's constitution, Heidelberg University's degree programmes are based on subject-specific, interdisciplinary and practical goals for comprehensive academic education and for the students' future careers. The resulting competency profile is included in the module handbooks as a universally valid qualification profile and is implemented in the specific qualification objectives as well as the curricula and modules of the individual degree programmes:

- Development of subject-related skills with a pronounced research orientation;
- Development of trans-disciplinary dialogue skills;
- Development of practical problem-solving skills;
- Development of personal and social skills;
- Encouragement to take on social responsibility based on the acquired skills.

Introduction to the M.Sc. Economics programme

The 2-year Master's programme in Economics at the Alfred-Weber-Institute for Economics at Heidelberg University was launched in the winter semester 2009/2010. The two-year programme aims at students seeking to enhance their knowledge and refinetheir methodological skills in Economics after successful completion of a B.Sc. degree course in the same subject. The Alfred-Weber-Institute for Economics (AWI) welcomes an intake capacity of the programme between 60 and 80 students per year in order to maintain the well established high-quality support.
A major objective of the programme is to encourage independent academic work. The course structure adheres to international standards and attaches particular importance to the relevance of economic research for financial and economic policy issues, not least with a view to qualifying graduates for professions involving political/public affairs consultancy.

Students specialize in one of the six following tracks:

Analytical Economics
Development Economics
Behavioral Economics
Macroeconomics and Financial Econometrics
Environmental Economics
European Environmental Economics and Policy (M3EP)*

Students can familiarise themselves with economic research issues in the supplementary elective modules and seminars they attend.
To prepare students for the international labour market for economists, classes are held in English, some of them taught by visiting international professors.
The Alfred Weber Institute for Economics is internationally renowned for its research and enjoys a high degree of visibility on that score. Its main research interests focus on Decision-making and Game Theory, Political Economy, Development and (International) Macroeconomics, Econometrics and Experimental Economics, especially Behavioural Economics.

* *This module handbook also applies to the second year of the ERASMUS Mundus joint Master's programme in European Environmental Economics and Policy (M3EP).*

Qualification objectives

The M.Sc. in Economics is a professionally organised course geared to international standards. Its main aim is to introduce students to current academic methods and research findings, thus enabling them to engage independently with economic policy issues and comply with the academic standards required in publications on economic subjects.

Subject-related Qualification objectives

Graduates of the Master's programme in Economics acquire a deep understanding of modern research-oriented methods and topics in Microceconomics, Macroeconomics and Econometrics. They develop strong analytical skills in all of the aforementioned areas and are able to assess the advantages and disadvantages of different methods. Additionally, they are able to critically assess methods and models used in Economics as well as to develop, answer and discuss questions posed in the current economic fields of research.

Generic Qualification objectives

Graduates of the Master's programme in Economics possess the required skills to discuss current topics in economic research with their peers as well as the underlying methods and assumptions. They are able to quickly apply the analytical skills and tools acquired to other fields. Moreover, they are able to quickly delve into new subjects and conduct independent economic research and present their findings in English.

Programme Structure

The Master of Science programme is designed to ensure that students understand the implications of their subject well, are able to make appropriate use of sophisticated academic methods and findings, and are capable of independent economic research in accordance with academic principles.
The programme follows a modular system that takes 4 semesters to complete, including sitting for exams and the completion of a thesis. First semester compulsory submodules vary depending on the track students aim to achieve.

In the second and third semesters, students are expected to choose from a range of economic and interdisciplinary elective modules and seminars to complement their research. The electives from the economics modules can be chosen from the abovementioned areas of focus.

In the third semester, students have the opportunity to study abroad, including the ERASMUS programme, the EU-exchange programme to promote greater mobility and cooperation between partner universities. Credits obtained from the partner universities are transferable towards the Master's degree. The fourth semester is reserved for the completion of the Master's thesis.

Completion of the Master's programme requires a total of 120 ECTS credit points (each CP having an equivalent value of a workload of 30 hours), out of which 32 credits come from compulsory modules, 58 credits from elective modules and 30 credits from the Master's thesis. Graduates will be conferred the degree "Master of Science" (M.Sc.).

Teaching/Learning methods

- Lecture:

Content is usually taught through presentations given by the lecturer. Students are encouraged to read the literature and go over the content in their own time.

- Seminar:

Students choose e.g. one topic of focus, about which they give a presentation and/or complete a written assignment (such as term paper or essay). Further teaching and learning methods include group discussions, portfolios, learning diaries and practical exercises.

- Final Examination:

There is no final examination in the M.Sc. Economics degree programme. Instead, students sit individual exams during the course of each module. This is because each module teaches students different skills. The examinations therefore test the different skills specific to each module.

Learning outcomes

- In **written exams**, students prove that they have an in-depth understanding of the core concepts in Economics and that they are able to apply these concepts to solve problems in a short time.
- In **seminars**, students show that they can grasp the essence of scientific papers and can organize the insights distilled from research literature in a well-structured manner. They communicate these insights to their fellow students and respond effectively to critical questions from the audience. Moreover, they formulate critical questions about other students‘ presentations.
- The students write seminar papers on topics of their choice. For this purpose, they draw on the academic literature. They develop own ideas for small research projects and design approaches to test hypotheses.
- In the **Master‘s thesis**, students demonstrate their ability to formulate more extensive research questions in economics and answer these questions with the help of the tools acquired during the programme. Over the period of several months students organise and prepare their thesis independently and effectively. They are successful in developing a clear and logical structure for an extensive research project. They critically assess the applied methods and premises and derive convincing conclusions.

Career prospects

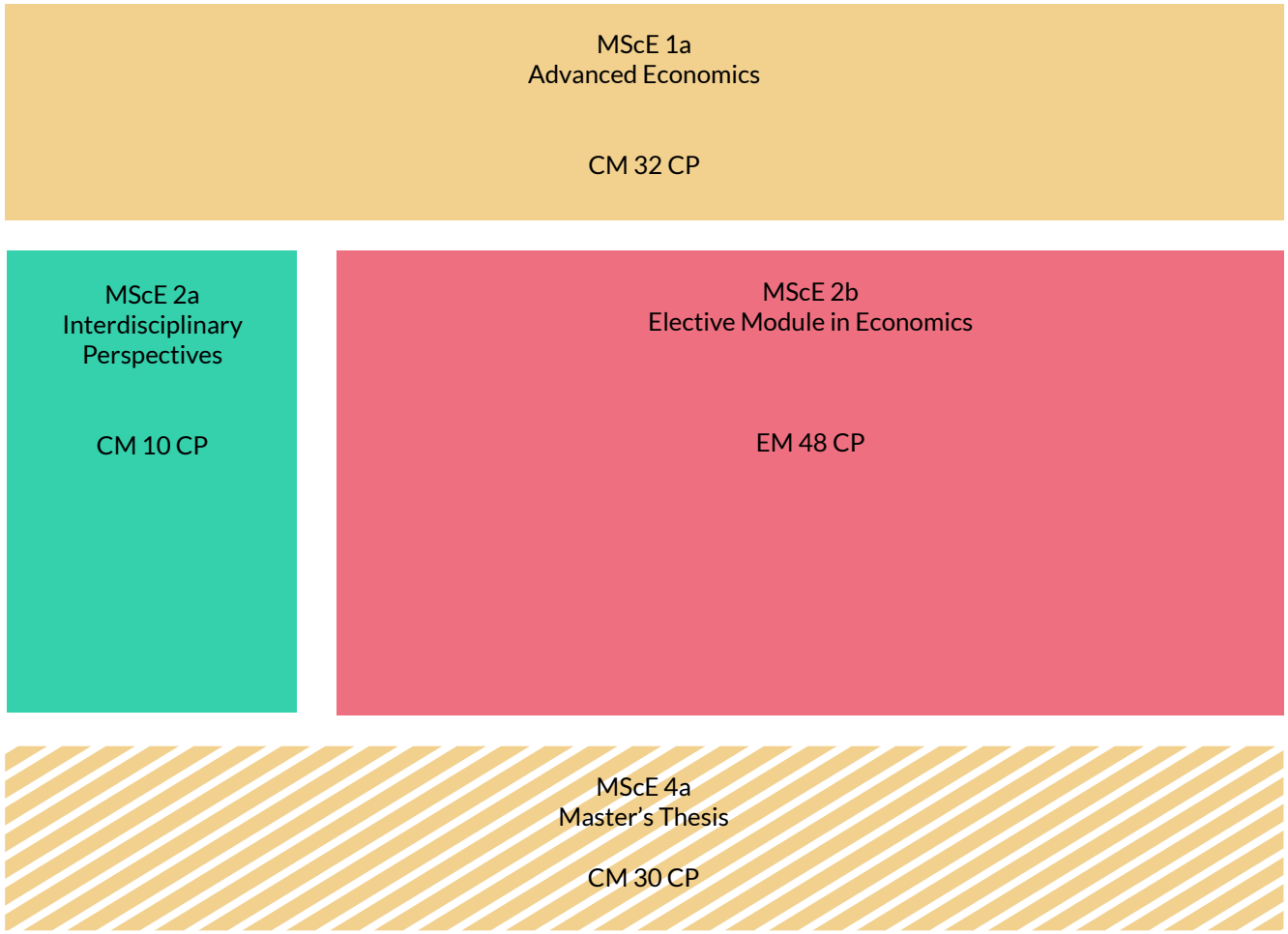
A master's degree in economics provides graduates with a wide array of subject-specific and transferable skills, such as analytical skills, problem-solving, numeracy, communication and computing. Employers will value their understanding of decision-making, their acquired skills, and their experience in viewing problems in a domestic and international context. Endowed with these essential skills, graduates of the "Master of Science in Economics" are much sought-after by the private sector and public institutions alike, and have excellent job prospects in:

- Research institutes and universities,
- Ministries and government agencies, particularly those concerned with economic affairs,
- International organisations such as the International Monetary Fund, OECD, ECB etc.,
- Think tanks, consultancy firms and economic advisory services,
- The private sector, especially in financial institutions such as banks, insurance companies or international corporations.

Career Opportunities for M3EP Graduates

M3EP graduates will be involved in solving broad-spectrum environmental policy challenges that require interplay between economic analysis, political analysis, a firm understanding of policy in practice, and interdisciplinary teamwork. E.g. working with implementation and realization of the EU Green Deal and EU's Environmental Action Programmes at local, national, and international levels in:

- Small to large private companies, at corporate level as well as in innovative startups,
- Governmental bodies and public agencies
- Non-Governmental Organizations
- Universities and research institutions
- A PhD programme.



1. Semester, WT
CP/ECTS: 32

2. Semester, ST
CP/ECTS: 28

3. Semester, WT
CP/ECTS: 30

4. Semester, ST
CP/ECTS: 30

CM = Compulsory Module EM = Elective Module

Compulsory Modules Economics	32 CP/ECTS	Interdisciplinary Perspectives	10 CP/ECTS
Elective Modules Economics	48 CP/ECTS	Master's Thesis	30 CP/ECTS
		Total	120 CP/ECTS

Top

Code // Name of the Module	MScE1a // Advanced Economics
Study programme	M.Sc. Economics
Type of Module	Compulsory Module
Number of ECTS/CP // Workload	32 // 960 h
Contact hours // Cycle	20 // Winter term
Type of course	Lectures with tutorial, seminars
Courses	The module consists of the following submodules: 1) Advanced Microeconomics 2) Advanced Macroeconomics 3) Advanced Econometrics 4) Advanced Mathematics 5) Development Economics I 6) Development Economics II 7) Experimental Methods 8) Environmental Economics 9) Elective Course in Macroeconomics and Financial Econometrics 10) Applied Equilibrium Analysis in Environmental and Energy Economics (M3EP) 11) M3EP Elective course

The submodules to be completed depend on the track the students aim to achieve.

For the track **„Analytical Economics“** the following submodules have to be completed:

1) Advanced Microeconomics
2) Advanced Macroeconomics
3) Advanced Econometrics
4) Advanced Mathematics

For the track **„Development Economics“** the following submodules have to be completed:

2) Advanced Macroeconomics
3) Advanced Econometrics
5) Development Economics I
6) Development Economics II

For the track **„Behavioral Economics“** the following submodules have to be completed:

1) Advanced Microeconomics
3) Advanced Econometrics
4) Advanced Mathematics
7) Experimental Methods

Code // Name of the Module	MScE1a // Advanced Economics cont'd
Study programme	M.Sc. Economics
Type of Module	Compulsory Module
Number of ECTS/CP // Workload	32 // 960 h
Contact hours // Cycle	20 // Winter term
Type of course	Lectures with tutorial, seminars

Courses

For the track **„Macroeconomics and Financial Econometrics"** the following submodules have to be completed:

2) Advanced Macroeconomics
3) Advanced Econometrics
4) Advanced Mathematics
9) Elective Course in Macroeconomics and Financial Econometrics

For the track **„Environmental Economics"** the following submodules have to be completed:

1) Advanced Microeconomics
3) Advanced Econometrics
4) Advanced Mathematics
8) Environmental Economics

Illustrative study guides can be found on pages 24ff.

For the M3EP track **„European Environmental Economics and Policy "** the following submodules have to be completed:

8) Environmental Economics
7) Experimental Methods
10) Applied Equilibrium Analysis in Environmental and Energy Economics
11) M3EP Elective course

More information on the specifics of the ERASMUS Mundus joint Master's programme can be found on page 32f.. This track can only be completed after being admitted to the ERASMUS Mundus Joint Master's Programme in Copenhagen.

Code // Name of the Module	MScE1a // 1) Advanced Microeconomics
Study programme	M.Sc. Economics
Type of Module	Compulsory Module // Submodule
Number of ECTS/CP // Workload	8 // 240 h
Contact hours // Cycle	5 // Winter term
Type of course	Lectures with tutorial
Courses	Lecture „Advanced Microeconomics“ (3 credit hours per week) and accompanying tutorial (2 credit hours per week)

Curriculum

The module covers the main topics in standard microeconomic theory on an advanced formal level. The first part covers consumer theory and the theory of the firm. Next, some basics of general equilibrium theory are covered, including the two welfare theorems. The second part presents an introduction to decisions under risk and to strategic interaction and game theory.

Learning objectives

Students are made familiar with the fundamental concepts of microeconomics on an advanced level, including advanced formal mathematical methods. They learn to analyse strategic decision-making situations in settings of certainty and uncertainty, understand their effect on market activity in competitive markets, and evaluate the efficiency of microeconomic allocations.
Students acquire an overview of the current state of research on selected topics in microeconomics and will be able to conduct independent research in the field.

Specifics	-
Recommended Literature	Jehle & P. J. Reny, Advanced Microeconomic Theory (3rd ed.), 2010, Prentice Hall. Mas-Collel, Whinston & Green, Microeconomic Theory, 1995, Oxford University Press D. M. Kreps, A Course in Microeconomic Theory, 1990, Princeton University Press. D. M. Kreps, Microeconomic Foundations I, 2012, Princeton University Press.
Assessment	Final exam (60-180 min) and possibly a midterm exam. Further details will be announced in the syllabus.
Module coordinator	Prof. Jörg Oechssler, Ph.D.

Code // Name of the Module	MScE1a // 2) Advanced Macroeconomics
Study programme	M.Sc. Economics
Type of Module	Compulsory Module // Submodule
Number of ECTS/CP // Workload	8 // 240 h
Contact hours // Cycle	5 // Winter term
Type of course	Lecture with tutorial
Courses	Lecture "Advanced Macroeconomics" (3 credit hours per week) and accompanying tutorial (2 credit hours per week)

Curriculum

The module provides students with advanced conceptual and methodological skills that are necessary for dealing independently with macroeconomic issues and research questions.
The module features introductions to growth theory, real business cycle theory and New Keynesian Economics. In each section, basic models and the relevant solution techniques are discussed, followed by a comparison of the resulting predictions with corresponding empirical observations.
In the tutorial, standard techniques such as intertemporal optimization and linearization are taught. Additionally, students are introduced to computational solving techniques of macroeconomic models.

Learning objectives

Upon completion of the module, students have learned how to use basic modern macroeconomic models to predict effects of changes in exogenous variables on short- and long-term equilibria, to extend these models to account for potential shortcomings, and to derive relevant policy implications.

Furthermore, students will be acquainted with the methodological framework and the intuition necessary to understand current macroeconomic research literature and will have a rigorous foundation for the discussion of macroeconomic policies.

Specifics	-
Recommended Literature	David Romer: „Advanced Macroeconomics" Jordi Galí: „Monetary Policy, Inflation and the Business Cycle" Barro and Sala-i-Martin: „Economic Growth"
Assessment	120-minute exam at the end of the semester
Module coordinator	Prof. Dr. Zeno Enders

Code // Name of the Module	**MScE1a // 3) Advanced Econometrics**
Study programme	M.Sc. Economics
Type of Module	Compulsory Module // Submodule
Number of ECTS/CP // Workload	8 // 240 h
Contact hours // Cycle	5 // Winter term
Type of course	Lecture with tutorial
Courses	Lecture "Advanced Econometrics" (3 credit hours per week) and tutorial/computer exercise (2 credit hours per week)

Curriculum

The module provides an introduction to econometric methods for analyzing cross-sectional, panel, and time series data. The main focus is on methods for causal inference. The module first introduces the ordinary least squares estimator and discusses its properties. The module proceeds to cover instrumental variables regression, models for panel data, experiments and quasi-experiments, regression with a limited dependent variable, big data and time series econometrics. Students will develop knowledge and skills in applying econometric methods to analyze economic data using econometric software.

Learning objectives

This module aims to provide students with the necessary tools to thoroughly understand modern econometric techniques and their empirical application. Upon completing the module, students can read and understand the current literature in econometrics, critically evaluate and replicate empirical findings in the previous literature, and conduct their empirical research projects using econometric software.

Specifics	A three-day prep course on statistics/econometrics will be offered before the beginning of the term. The course covers basic concepts of statistics and probability theory.
Recommended Literature	Angrist, J.D., Pischke, J.-S., 2015. Mastering `Metrics': The Path from Cause to Effect, Princeton University Press. Cunningham, S., 2021. Causal Inference: The Mixtape, Yale University Press. Hansen, B., 2022. Econometrics, Princeton University Press. Stock, J. H., Watson, M. W., 2020. Introduction to Econometrics, Pearson. Wooldridge, J. M., 2025. Introductory Econometrics, Cengage Learning.
Assessment	120-minute exam at the end of the semester
Module coordinator	Prof. Dr. Christian Conrad

Code // Name of the Module	MScE1a // 4) Advanced Mathematics
Study programme	M.Sc. Economics
Type of Module	Compulsory Module // Submodule
Number of ECTS/CP // Workload	8 // 240 h
Contact hours // Cycle	5 // Winter term
Type of course	Lecture with tutorial
Courses	Lecture "Advanced Mathematics" (3 credit hours per week) and accompanying tutorial (2 credit hours per week)

Curriculum

The lecture and associated exercises will provide students with the mathematical concepts most often used in economic applications. These include fundamental concepts such as numbers and sets, one variable and multi variable calculus, unconstrained and constrained optimization, linear algebra, and real analysis. Throughout, students will be exposed to and produce logical mathematical arguments and proofs.

Learning objectives

Upon completion, students will be familiar with most mathematical techniques required for advanced courses in economics. They will have the necessary prerequisites for reading and understanding the economics literature at the level of research journals.

Prerequisites	Basic microeconomics and macroeconomics at BA level
Recommended Literature	Simon, Carl and Lawrence Blume (1994) Mathematics for Economists. Norton. Sundaram, Rangarajan (1996) A first course in optimization theory. Cambridge University Press. Chiang, Alpha (2005) Fundamental Methods of Mathematical Economics. McGraw-Hill
Assessment	two-hours exam (120 minutes) & (optional) midterm
Module coordinator	Prof. Christoph Vanberg, Ph.D.

Code // Name of the Module	MScE1a // 5) Development Economics I
Study programme	M.Sc. Economics
Type of Module	Compulsory Module // Submodule
Number of ECTS/CP // Workload	8 // 240 h
Contact hours // Cycle	5 // Winter term
Type of course	Lecture with tutorial
Courses	Lecture “Development Economics I” (3 credit hours per week) and accompanying tutorial (2 credit hours per week)

Curriculum

This course provides an overview of development economics, with particular emphasis on macro issues in economic development. The most important topics to be covered are the measurement and meaning of economic development, empirical growth research, globalization and development, poverty, inequality, development cooperation, international organizations, migration, environmental problems, capital flows, and foreign debt.

Learning objectives

After successful completion, students will be able to understand why countries are at different stages of economic development and how such development can be measured using different metrics. They can explain how historical income differences between countries developed, and can apply theories of growth and trade to evaluate the constraints faced by developing countries. They can critically evaluate the role of population growth as well as migration, institutions, foreign aid, international organizations and debt in affecting development, and they will be able to employ statistical methods to evaluate determinants of economic development.

Recommended Literature	-
Assessment	two-hours exam (120 minutes)
Module coordinator	Prof. Dr. Axel Dreher

Code // Name of the Module	MScE1a // 6) Development Economics II
Study programme	M.Sc. Economics
Type of Module	Compulsory Module // Submodule
Number of ECTS/CP // Workload	8 // 240 h
Contact hours // Cycle	5 // Winter term
Type of course	Lecture with tutorial
Courses	Lecture "Development Economics II" (3 credit hours per week) and accompanying tutorial (2 credit hours per week)

Curriculum

This course continues the overview of development economics, with an emphasis on distributional and micro issues in economic development. Topics include concepts and measurement of welfare, inequality and poverty, poverty traps, microeconomic models of farm households and contracts in the rural economy, and social welfare programs.

Learning objectives

After successful completion, students will be able to apply different concepts for measuring individual well-being, inequality and poverty, and they will understand advantages and disadvantages of the different measurement approaches.
They can explain inequalities within and between rich and poor countries, and how inequality and poverty have evolved over time. They can identify different sources of market failures in less developed countries and understand how inequality and poverty threaten market efficiency. They understand why poverty is propagated and evaluate economic policies aimed at breaking the poverty cycle. Students can employ statistical methods in data analyses to evaluate the effectiveness of development interventions.

Prerequisites	Basic microeconomics and macroeconomics at Bachelor level
Recommended Literature	Todaro, Michael P., and Stephen C. Smith (2020). Economic Development, 13th Edition. Harlow: Pearson. De Janvry, Alain, and Elisabeth Sadoulet (2021). Development Economics: Theory and Practice, 2nd edition. New York: Routledge.
Assessment	Final exam (120 minutes), problem set submissions, student presentation
Module coordinator	Prof. Dr. Stefan Klonner

Code // Name of the Module	MScE1a // 7) Experimental Methods
Study programme	M.Sc. Economics
Type of Module	Compulsory Module // Submodule
Number of ECTS/CP // Workload	8 // 240 h
Contact hours // Cycle	5 // Winter term
Type of course	Lecture with tutorial and Seminar
Courses	Lecture "Experimental Methdos" (2 credit hours per week) and accompanying tutorial (2 credit hours per week), Seminar (1 credit hour per week)

Curriculum

The class is divided in three parts. After an introduction to experimental methods in economics, including examples from a diversity of areas of economic research, students will work on their own designs. A final part is devoted to the analysis of experimental data.

In the first part of the class, students will read and discuss a selection of experimental and behavioral economics literature with the aim to critically discuss the experimental methods used, and to find interesting economic, psychological and behavioral research questions. In the second part, they will have to develop a feasible and original experimental design to answer their research question. These experiments will be run in class, analyzed and presented at the end of the term in a small poster-conference. Students will also participate in each other´s experiments, to provide everybody with participants and to discuss how an experiment looks from the perspective of a participant.

Learning objectives

Experimental economics is a grown and growing field in economics and business administration. It provides a method to test theoretical predictions, to explore human behavior in specific economic environments, to help design institutions, to give advice on policy and to search for patterns and regularities in economic behavior. Methods range from lab experiments, field experiments, and survey experiments to different kinds of physiological measures.
This course will help students to develop a thorough understanding of and hands-on skills in everything related to experimental methods: Choosing the right methods for a question, good study design, running experiments, data analysis of experimental data, ethical issues, and the debate around the replication crisis and its solutions.

Prerequisites	-
Recommended Literature	Jacquemet N., L'Haridon O. (2018). Experimental Economics: Method and Applications. Cambridge University Press. More literature will be specified at the beginning of the course.
Assessment	Mid-term exam, class activities, poster presentation
Module coordinator	Prof. Dr. Christiane Schwieren

Code // Name of the Module	MScE1a // 8) Environmental Economics
Study programme	M.Sc. Economics
Type of Module	Compulsory Module // Submodule
Number of ECTS/CP // Workload	8 // 240 h
Contact hours // Cycle	5 // Winter term
Type of course	Lecture with tutorial
Courses	Lecture "Environmental Economics" (3 credit hours per week) and accompanying tutorial (2 credit hours per week)

Curriculum

This module covers the main tools and concepts for thinking conceptually and analytically about the economics of environmental pollution and of the global climate system at a graduate level. The course starts with a foundational framework of an economy with externalities. This is followed by the introduction of the main economic instruments for environmental policy, followed by an exhaustive coverage of the main complications of instrument choice: Informational imperfections, strategic behavior, and spatial and temporal challenges in environmental policy. There is also coverage of the main techniques of non-market valuation.

Learning objectives

After completing this course, students will be familiar with the modern economic perspective on the economic nature of environmental problem. They will understand how to conceptualize of the environment in economic models, how to determine instruments for solving these problems and how to compare their performance. Students will develop an understanding of how specific complications pose challenges to environmental policy-makers and how economic instruments can help overcome them. Students will also receive a foundational understanding of modern techniques of the valuation of non-market goods as an input into environmental cost-benefit analysis.

Recommended Literature	Phaneuf, D. and T. Requate (2017): A Course in Environmental Economics. Theory, Policy, and Practice. Cambridge University Press Tol, R. (2019): Climate Economics. Second edition. Edward Elgar
Assessment	Final exam (60 – 120 minutes) and, upon agreement, a midterm exam. Further details are announced in the syllabus.
Module coordinator	Prof. Timo Goeschl, Ph.D.

Code // Name of the Module	MScE1a // 9) Elective Course in Macroeconomics and Financial Econometrics
Study programme	M.Sc. Economics
Type of Module	Compulsory Module // Submodule
Number of ECTS/CP // Workload	8 // 240 h
Contact hours // Cycle	4 // Winter term
Type of course	Lecture with tutorial or seminar
Courses	Free choice of a lecture (4 credit hours per week including the tutorial) or a seminar (2 credit hours per week) in the field of Macroeconomics and Financial Econometrics.

Curriculum

Free choice of one lecture or seminar in the field of Macroeconomics and Financial Econometrics covering current research on theoretical or applied topics. Courses offered may vary each year. The module can also be taken in a later semester.

Learning objectives

Students are able to comprehend and develop further theories relevant to Macroeconomics and Financial Econometrics. Moreover, students are able to derive testable hypotheses from theoretical models and have acquired the ability to structure, analyse, and quantitatively evaluate practical economic issues. Upon completing the module, students will have acquired knowledge about the current state of research on selected topics in Macroeconomics and Financial Econometrics and will be able to carry out independent research and are able to express thoughts and ideas clearly in a variety of settings and situations. Participants are able to understand technically and conceptually demanding original research based literature. They are able to excerpt core lines of thoughts and to present the results to other participants. They learn to narrow down the problem and to formulate exact questions. The course prepares students to do independent research and to participate in the joint research activities of the Economics Department.

In terms of knowledge students:

- Understand current research methodology applied to Macroeconomics and Financial Econometrics
- Apply advanced economic principles to current problems
- Understand theoretical framework for research methods applied to Macroeconomics and Financial Econometrics

In terms of practical skills students:

- Integrate knowledge provided from disciplinary as well as interdisciplinary sources to solve advanced research problems in Macroeconomics and Financial Econometrics
- Evaluate data and results using critical thinking skills
- Can revise and present scientific case studies in multimedia presentation in English
- Can apply all current tools of academic writing

In terms of social competence students:

- Effectively are able to collaborate with other students in analysing results, and preparing oral presentations
- Are able to find appropriate sources that can be summarised and integrated into multimedia presentation
- Are aware of importance of access to data, knowledge and results of scientific studies in Macroeconomics and Financial Econometrics
- Are aware of importance and role of scientific honesty, data reliability, intellectual property rights and rules of access to data and scientific information;
- Accept the importance of quality of research results presentation (i.e. oral presentations and a written research paper) for effective scientific communication.

Specifics	Courses that are part of the B.Sc. Volkswirtschaftslehre or that have been completed as part of another module of the M.Sc. Economics may not be taken.
Assessment	For lectures at least one of the following: 60 to 180-minutes exam, research paper, oral presentation, quizzes, problem sets or projects, the weighting of which is announced at the beginning of the course in heiCO. For seminars: both a research paper and an oral presentation.
Module coordinator	Prof. Dr. Christian Conrad

Code // Name of the Module	MScE1a // 10) Applied Equilibrium Analysis in Environmental Energy Economics (M3EP)
Study programme	M.Sc. Economics
Type of Module	Compulsory Module // Submodule
Number of ECTS/CP // Workload	8 // 240 h
Contact hours // Cycle	5 // Winter term
Type of course	Lecture with tutorial
Courses	Lecture "Applied Equilibrium Analysis in Environmental and Energy Economics" (3 credit hours per week) and accompanying tutorial (2 credit hours per week)

Curriculum

The module introduces numerical methods to analyze equilibrium problems in environmental, energy, and climate economics. The focus is on applied modeling based on partial and general economic equilibrium models. The course reinforces concepts, rationales, and instruments for policy interventions in energy markets, including an introduction to environmental implications of energy use and the role of economic analysis in designing policies to address environmental externalities, focusing largely on the climate change "carbon" externality. Students will develop expertise in working with data and in applying quantitative economic equilibrium models. Emphasis will be put on the following economic models: formulation of economic equilibrium models using mixed complementarity problems, partial equilibrium models of energy supply and demand (focusing on the electricity, natural gas, and coal markets) and general equilibrium models to study the price- and quantity-based policy controls of carbon dioxide emissions (for example, carbon taxes and emissions trading systems), including settings when energy markets interact with the macroeconomy.

Learning objectives

The module aims at enabling students to apply economic equilibrium modeling to conduct applied economic analysis, with a focus on environmental, energy, and climate economics. Emphasis will be put on partial and general equilibrium models describing the energy sector, fossil-based and renewable energy, its interaction with the rest of the economy, carbon markets, and the evaluation of energy and climate policy instruments. Students gain hands-on knowledge of the application and limitations of these quantitative tools for applied economic analysis. To this end, the course familiarizes students with the steps and knowledge required to apply quantitative methods, covering topics related to software (using the software GAMS; General Algebraic Modeling System), data preparation, model specification based on economic theory, model calibration, scenario assessments, and result interpretation. The course aims at enabling students to initiate their own research in the field of energy and environmental economics using quantitative methods in economic modelling. To achieve the learning goals, the course combines input lectures—providing the basic knowledge about the relevant economic concepts, models, and numerical methods—with elements focused on the application of quantitative methods through a supervised group project. The aim of the group project is to obtain a deeper comprehension of the quantitative tools covered in the input lectures by applying them to a variety of different issues in energy and environmental economics.

Recommended Literature	-
Assessment	Homework Assignments, Group Project (Written Report and Presentation)
Module coordinator	Prof. Dr. Sebastian Rausch

Code // Name of the Module	**MScE1a // 11) M3EP Elective Course**
Study programme	M.Sc. Economics
Type of Module	Compulsory Module // Submodule
Number of ECTS/CP // Workload	6 // 180 h
Contact hours // Cycle	5 or 2 // Winter term
Type of course	Lecture with tutorial or Seminar
Courses	Lecture "Developing Economics II" (3 credit hours per week) and accompanying tutorial (2 credit hours per week) *or* Seminar "Designing Field Experiments in Environmental and Development Economics" (2 credit hours per week)

For the lecture "Development Economics II" see "MScE1a // 6) Development Economics II" on page 13.

Curriculum - Designing Field Experiments in Environmental and Development Economics

Every participant will study the general background reading. In addition, each participant will write and present an economics research paper on a selected topic, including but not limited to the following:

- Pollution and health
- Nudging environmental protection
- Enforcing environmental protection
- Payments for ecosystem services
- Willingness to pay for environmental goods and services
- Emission markets
- Climate change and labor productivity
- Climate change and risk aversion
- Climate change and agricultural output
- Green products and consumer behavior
- Microfinance and climate change adaptation
- Energy access

Learning objectives - Designing Field Experiments in Environmental and Development Economics

This seminar focuses on field experimental methods in environmental and development economics. Students have the opportunity to select a topic of interest, review the related economic literature, formulate an original research question and one or several testable hypotheses, and lay out the design of an appropriate field experiment to test it. Students will prepare a report summarizing in detail this exercise, including the current state of knowledge on the selected topic.

Recommended Literature	- Gerber, A. S., and Green, D. P. (2012). “Field experiments: Design, analysis, and interpretation.” WW Norton. - Duflo, Esther, Rachel Glennerster, and Michael Kremer (2007). “Using Randomization in Development Economics Research: A Toolkit.” Handbook of Development Economics, 4, Chapter 61. - Imbens, Guido and Jeffrey M. Wooldridge (2009). “Recent Developments in the Econometrics of Program Evaluation.” Journal of Economic Literature, 47(1): 5–86. - Deaton, A., and Cartwright, N. (2018). “Understanding and misunderstanding randomized controlled trials.” Social Science & Medicine, 210, 2-21.
Assessment	Research paper, oral presentation, reports
Module coordinator	Prof. Timo Goeschl, Ph.D.

Code // Name of the Module	**MScE2a // Interdisciplinary Perspectives**
Study programme	M.Sc. Economics
Type of Module	Elective Module
Number of ECTS/CP // Workload	10 // 300 h
Contact hours // Cycle	min. 4 // Winter term and summer term
Type of course	Lecture/Tutorial/Seminar

Curriculum

Free choice of non-economic lectures or seminars from an adjacent discipline that are offered within all possible study-programmes of Heidelberg University both on Bachelor´s level as well as on Master´s level. Lectures or seminars that are part of the M.Sc. Economics' elective module may also be taken upon request. Courses offered within B.Sc. Volkswirtschaftslehre of the Alfred-Weber-Institute cannot be chosen.

Learning objectives

Students are able to apply categories, aims and methods of other adjacent academic disciplines. As a result a further development of transdisciplinary dialogue competencies will be enhanced. By understanding and acculturate basic concepts of adjacent disciplines and their research oriented lines of thinking, students are able to identify interactions and interdependencies. As a result students develop a broader and more comprehensive understanding of their own economic discipline. Furthermore students are able to evaluate the consequences of economic concepts and decisions in an interdisciplinary context so that they will be in a position to reflect on the requirements of their own role within society.

Specifics	Should there be no indication on the amount of the acquired ECTS credit points, the module coordinator will determine a respective ECTS equivalence.
Assessment	Graded written or oral exam according to the regulations applied by the institute or faculty the class is offered by.
Module coordinator	Marcus Padberg, M.A.

Code // Name of the Module	**MScE2b // Elective Module in Economics**
Study programme	M.Sc. Economics
Type of Module	Elective Module
Number of ECTS/CP // Workload	48 // 1440 h
Contact hours // Cycle	30 // Summer term and winter term
Type of course	Lectures with tutorial and seminars
Courses	• At least 3 Lectures with tutorials • At least 2 Seminars Each lecture (including the tutorial) of 4 credit hours (SWS) has the value of 8 ECTS credit points. Each seminar of 2 credit hours has the value of 8 ECTS. Students aiming for the tracks „Behavioral Economics“ or „Macroeconomics and Financial Econometrics“ have to complete at least one course in the respective field.

Curriculum

Free choice of economic lectures and seminars covering current research on theoretical or applied topics. Courses offered will vary each semester and reflect the variety of topics the Alfred-Weber-Institute's faculty covers.

Learning objectives

Students are able to comprehend and develop further theories relevant to specific fields of Economics. Moreover, students are able to derive testable hypotheses from theoretical models and have acquired the ability to structure, analyse, and quantitatively evaluate practical economic issues. Upon completing the module, students will have acquired knowledge about the current state of research on selected topics and will be able to carry out independent research and are able to express thoughts and ideas clearly in a variety of settings and situations. Participants are able to understand technically and conceptually demanding original research based literature. They are able to excerpt core lines of thoughts and to present the results to other participants. They learn to narrow down the problem and to formulate exact questions. The course prepares students to do independent research and to participate in the joint research activities of the Economics Department.

In terms of knowledge students:

- Understand current research methodology applied to Economics
- Apply advanced economic principles to current problems
- Understand theoretical framework for research methods applied to Economics

In terms of practical skills students:

- Integrate knowledge provided from disciplinary as well as interdisciplinary sources to solve advanced research problems
- Evaluate data and results using critical thinking skills
- Can revise and present scientific case studies in multimedia presentation in English.

- Can apply all current tools of academic writing

In terms of social competence students:

- Effectively are able to collaborate with other students in analysing results, and preparing oral presentations
- Are able to find appropriate sources that can be summarised and integrated into multimedia presentation
- Are aware of importance of access to data, knowledge and results of scientific studies in Economics
- Are aware of importance and role of scientific honesty, data reliability, intellectual property rights and rules of access to data and scientific information;
- Accept the importance of quality of research results presentation (i.e. oral presentations and a written research paper) for effective scientific communication.

Specifics	Successful attendance of the compulsory module MScE1a is recommended. Possible specific requirements will be published in LSF. Courses that are part of the B.Sc. Volkswirtschafslehre or that have been completed as part of another module of the M.Sc. Economics may not be taken.
Assessment	For lectures at least one of the following: 60 to 180-minutes exam, research paper, oral presentation, quizzes, problem sets or projects, the weighting of which is announced at the beginning of the course in heiCO. For seminars: both a research paper and an oral presentation.
Module coordinator	Chairperson of Examination Board

Code // Name of the Module	MScE4a // Master‘s Thesis
Study programme	M.Sc. Economics
Type of Module	Compulsory Module
Number of ECTS/CP // Workload	30 // 900 h
Contact hours // Cycle	10 // Summer term
Type of course	Research paper and structured supervision

Curriculum

In the Master’s thesis students prove their ability to independently apply scientific methods of Economics and to write an original piece of research in coordination with the respective supervisor. This concluding scientific work should be an independently written research thesis in any field of Economics (in the analytical track) or in the respective field of Economics (in the other tracks).

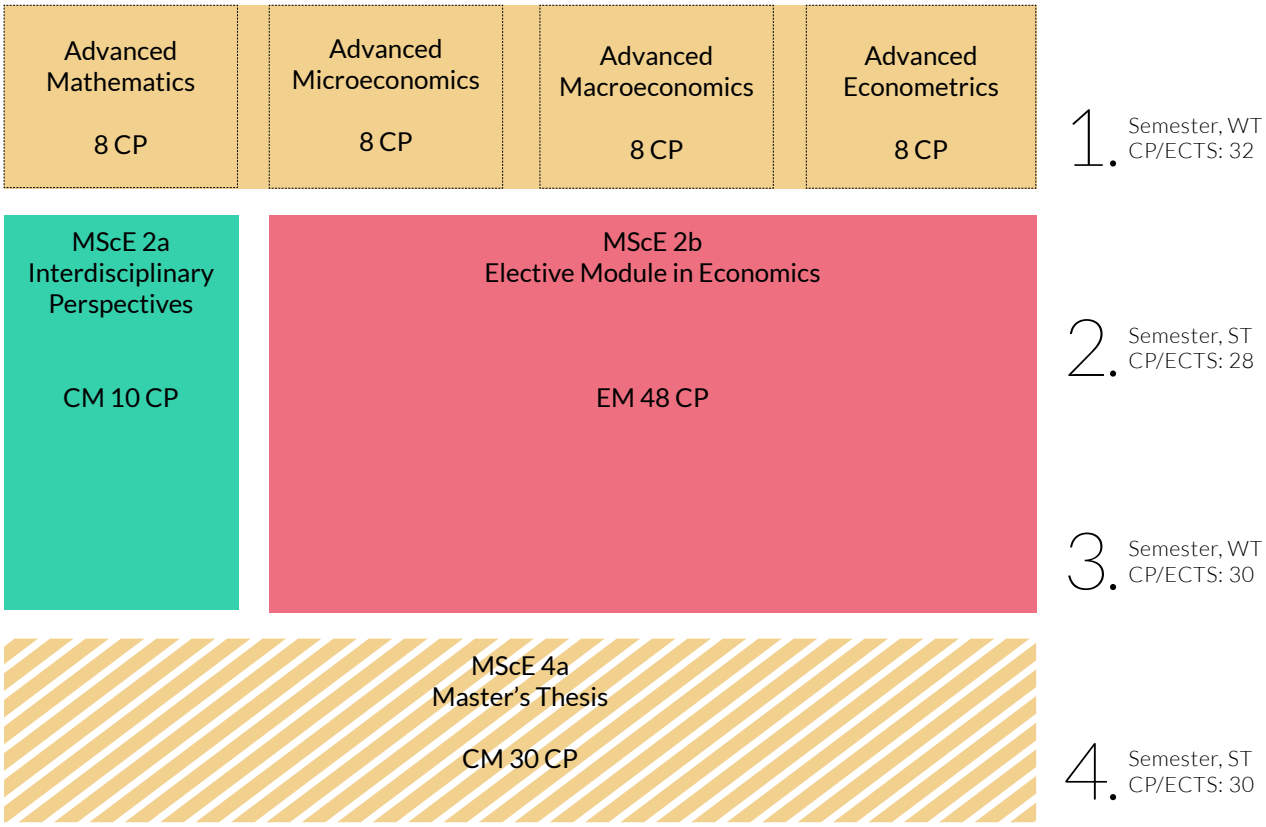
Learning objectives

Students build up detailed knowledge in the planning, realisation and evaluation of a special issue in Economics. By the end of the module students:

- are able to demonstrate a comprehensive understanding of the research topic of the thesis,
- define a feasible research project allowing for time and resource constraints,
- develop an adequate research methodology and be able to formulate and test concepts and hypotheses,
- apply concepts and methods of Economics to the formulated research question,
- make effective use of library resources,
- access databases, understand their uses and limitations, and extract relevant data,
- independently apply concepts and methods of Economics to the formulated research question.

Specifics	Only in the M3EP Track European Environmental Economics and Policy, the module consists of the Master‘s Thesis (27 CP, graded) and the joint thesis and employment workshop (3 CP, ungraded). For all other tracks, the module is completed by only the Master‘s Thesis for 30 ECTS.
Assessment	Graded research paper
Module coordinator	A suitable supervisor for a Master’s thesis can be chosen from all professors of the Alfred-Weber-Institute for Economics.

M.Sc. Economics - Analytical Economics Track



CM = Compulsory Module EM = Elective Module

Compulsory Modules Economics	32 CP/ECTS	Interdisciplinary Perspectives	10 CP/ECTS
Elective Modules Economics	48 CP/ECTS	Master's Thesis	30 CP/ECTS
		Total	120 CP/ECTS

Track coordinator Prof. Christoph Vanberg, Ph.D.

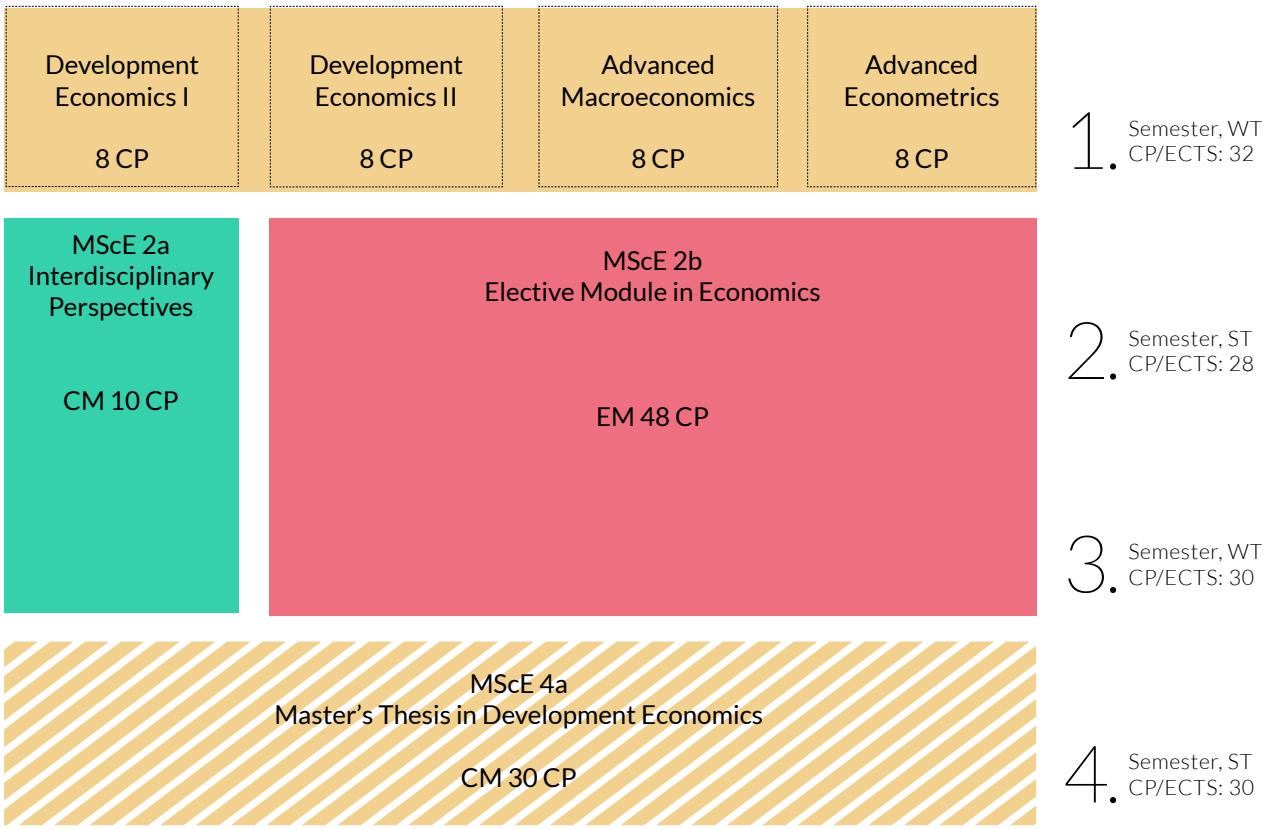
Curriculum

The MSc programme Analytical Economics offers a comprehensive economics curriculum with a focus on quantitative methods. The first semester consists of core courses in Mathematics, Microeconomics, Macroeconomics, and Econometrics. In the second and third semesters, students can choose from the broad spectrum of elective courses offered by Heidelberg's economics faculty. Within the interdisciplinary module, courses from adjacent disciplines can also be chosen. Students can apply to study abroad in the third semester. In the fourth semester, the program concludes with a Master's thesis.

Learning objectives

After successful completion, students will be able to understand and critically assess theoretical analyses and statistical evidence presented in research articles published in economics journals. They are able to formulate new research questions and conduct independent research using both theoretical and empirical methods. They recognize the limitations, implicit assumptions, and uncertainties surrounding arguments on economic matters discussed in politics and popular media, and are able to contribute rationally to such discussions using economic reasoning and relevant empirical research.

M.Sc. Economics - Development Economics Track



CM = Compulsory Module EM = Elective Module

Compulsory Modules Economics	32 CP/ECTS	Interdisciplinary Perspectives	10 CP/ECTS
Elective Modules Economics	48 CP/ECTS	Master's Thesis	30 CP/ECTS
		Total	120 CP/ECTS

Track Coordinator Prof. Dr. Axel Dreher

Curriculum

The MSc programme Development Economics is an analytical, research-oriented programme focused on economic issues of low- and middle-income countries. In addition to core courses in macroeconomics and econometrics, relevant methods are taught in the two compulsory first-semester courses Development I (Macro) and Development II (Micro).

In the second and third semester, students are free to choose from the broad spectrum of elective courses offered by Heidelberg's economics faculty. Within the interdisciplinary module, courses from adjacent disciplines can also be chosen.

During the third semester, students have the opportunity to apply for a study abroad.

In the fourth semester, the programme concludes with a Master's thesis in development economics.

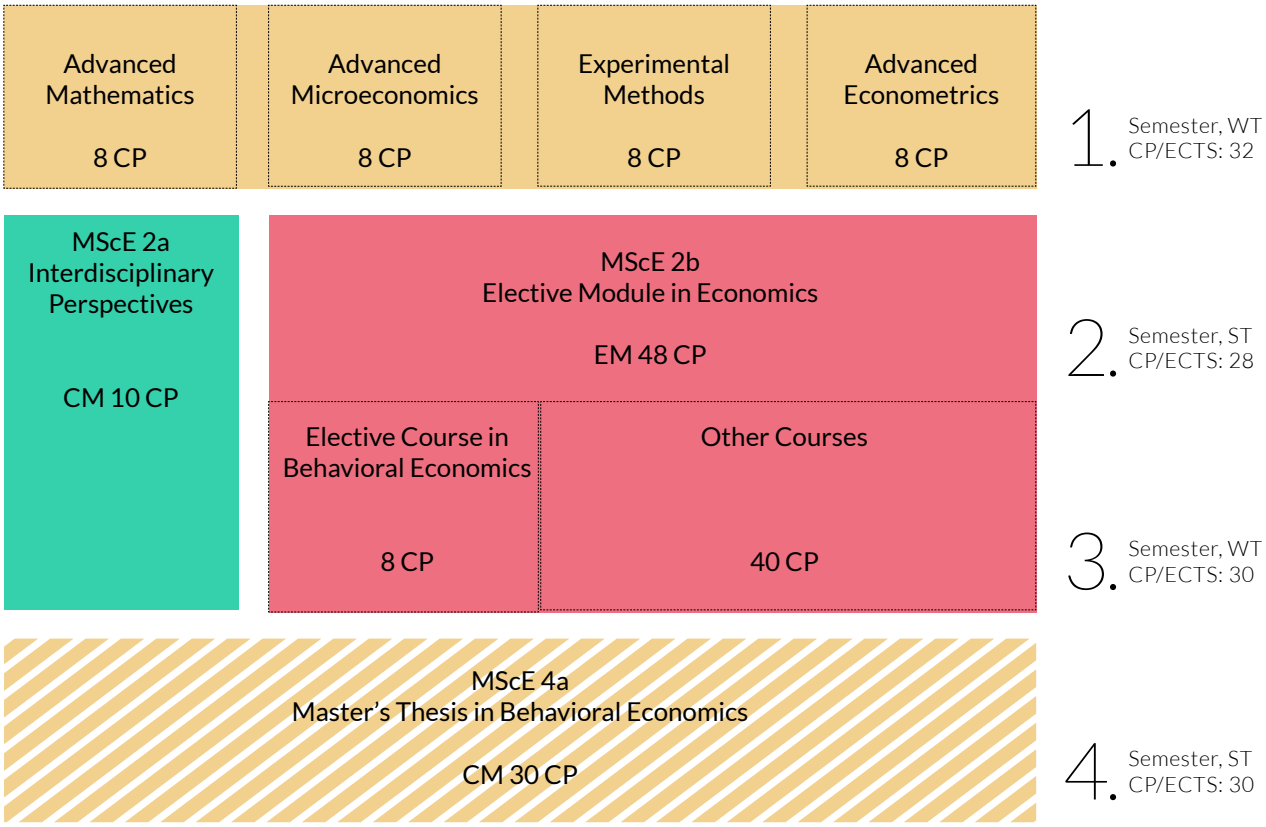
Learning objectives

After successful completion, students will be able to employ statistical and analytical methods used in modern development economics and apply them to current economic issues of developing countries. They will understand why countries are at different stages of economic development and how such development can be measured using different metrics. They can explain how income differences between countries have evolved, and can apply

M.Sc. Economics - Development Economics Track - cont'd

theories of growth and trade to evaluate the constraints faced by developing countries. They recognize the frictions that challenge the functioning of markets in low- and middle-income countries, and they can critically evaluate the role of population growth as well as migration, institutions, foreign aid, international organizations and debt for economic development.
They master statistical methods to evaluate determinants of economic development and the effectiveness of development interventions, and they can develop empirical research designs by themselves.

M.Sc. Economics - Behavioral Economics Track



CM = Compulsory Module EM = Elective Module

Compulsory Modules Economics	32 CP/ECTS	Interdisciplinary Perspectives	10 CP/ECTS
Elective Modules Economics	48 CP/ECTS	Master's Thesis	30 CP/ECTS
		Total	120 CP/ECTS

Track Coordinator Prof. Jörg Oechssler, Ph.D.

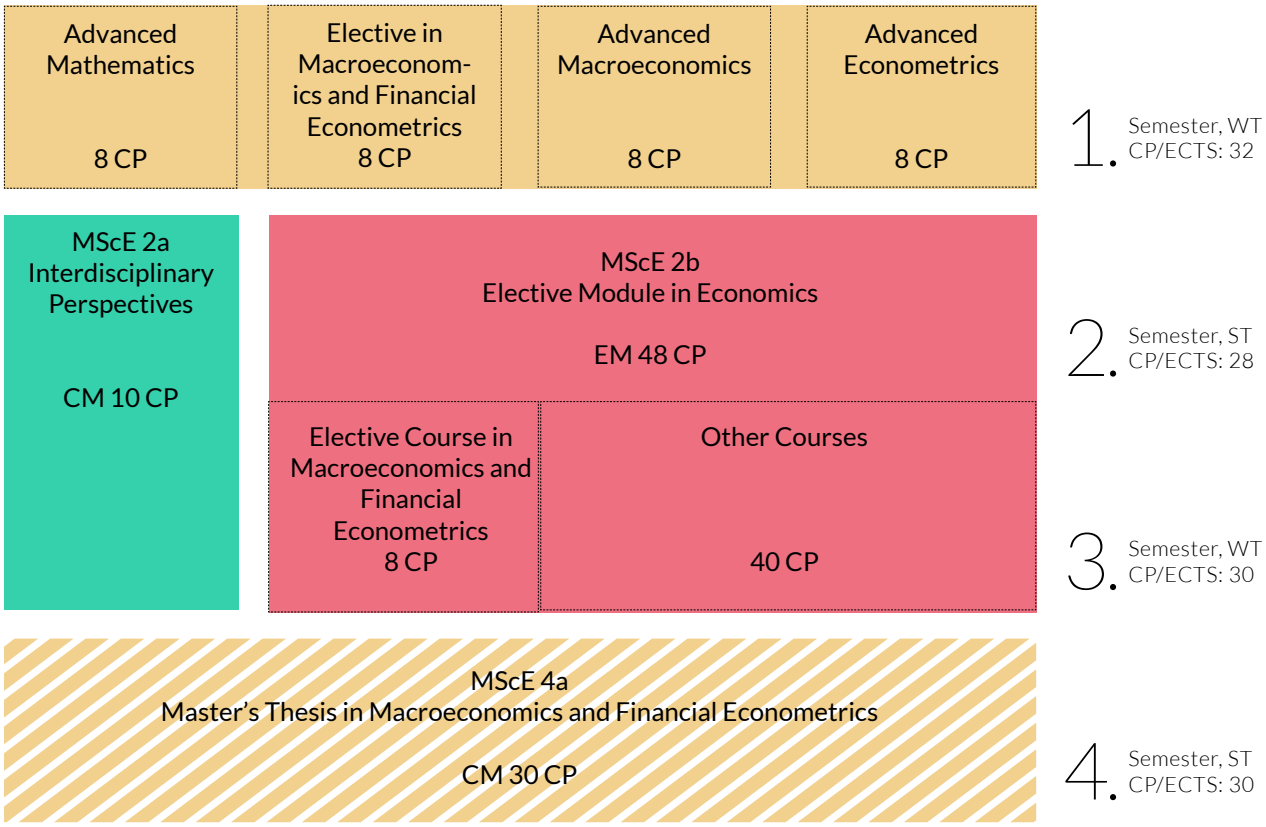
Curriculum

The MSc programme Behavioral Economics is a research-oriented program with a focus on behavioral theories of decision making, as well as experimental methods to test such theories. In addition to core courses in Microeconomics, Mathematics, and Econometrics, relevant methods are taught in a mandatory Experimental Economics course. In the second and third semester, students are free to choose from the broad spectrum of elective courses offered by Heidelberg's economics faculty. Within the interdisciplinary module, courses from adjacent disciplines can also be chosen. Students have the opportunity to apply for a study abroad during the third semester. In the fourth semester, the program concludes with a Master's thesis in behavioral and/or experimental economics.

Learning objectives

After successful completion, students will be able to employ experimental and theoretical methods used in behavioral economics and apply them to current economic issues. They will understand when and how the traditional homo oeconomicus assumptions fail to accurately predict behavior. They are able to critically discuss the possible policy implications of apparent deviations from traditional notions of rationality. They will be able to propose models to explain such deviations, and to test such explanations using experiments. They will be able to master the programming and organization issues involved in running experiments in economics.

M.Sc. Economics - Macroeconomics and Financial Econometrics Track



CM = Compulsory Module EM = Elective Module

Compulsory Modules Economics	32 CP/ECTS	Interdisciplinary Perspectives	10 CP/ECTS
Elective Modules Economics	48 CP/ECTS	Master's Thesis	30 CP/ECTS
		Total	120 CP/ECTS

Track Coordinator Prof. Dr. Christian Conrad

Curriculum

The MSc programme in Macroeconomics and Financial Econometrics is an analytical, research-oriented program focusing on the analysis of the macroeconomy and financial markets. Courses cover theoretical models and econometric methods to develop and test theories that address important questions in both areas. In addition to core courses in mathematics, macroeconomics, and econometrics, suitable methods are taught in several elective courses.

Students take at least two elective courses in the field of Macroeconomics and Financial Econometrics and are free to choose additional elective courses from the broad spectrum offered by Heidelberg's economics faculty. Within the interdisciplinary module, courses from adjacent disciplines can be selected. During the third semester, students have the opportunity to apply for a study visit abroad. In the fourth semester, the programme concludes with a Master's thesis in Macroeconomics and Financial Econometrics.

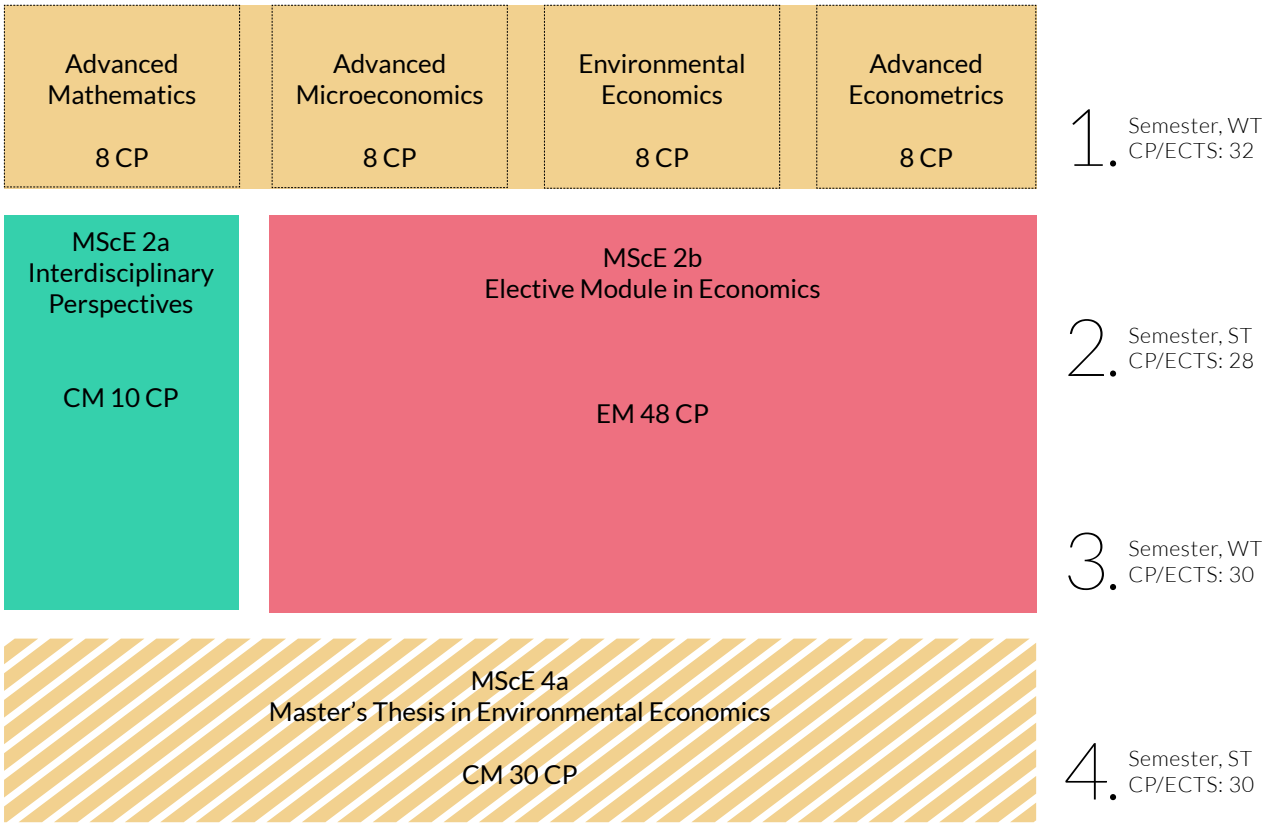
Learning objectives

After successful completion, students will have a deep knowledge of macroeconomic models and advanced empirical methods. They will understand how to use theoretical and empirical methods for policy evaluation and quantitative analysis.

Students will acquire the programming skills to implement macroeconomic models and use

modern econometric techniques to test model predictions and forecast macroeconomic and financial variables. Students understand and can critically assess research papers in Macroeconomics and Financial Econometrics.
They can apply their knowledge to analyse current developments in the macroeconomy and financial markets and can present their findings in oral and written communications.

M.Sc. Economics - Environmental Economics Track



CM = Compulsory Module EM = Elective Module

Compulsory Modules Economics	32 CP/ECTS	Interdisciplinary Perspectives	10 CP/ECTS
Elective Modules Economics	48 CP/ECTS	Master's Thesis	30 CP/ECTS
		Total	120 CP/ECTS

Track Coordinator Prof. Timo Goeschl, Ph.D.

Curriculum

The MSc programme in Environmental Economics is an analytical, research-oriented program focusing on the analysis of the environmental problems and environmental policy. A foundation course in the first semester covers theoretical models and empirical and experimental methods to understand the nature of environmental problems and the contribution of economic instruments to their solution in modern and developing economies. This is in addition to core courses in mathematics, microeconomics, and econometrics.

From the second semester onwards, students are free to choose additional elective courses from the broad spectrum offered by Heidelberg's economics faculty. Courses with a focus on environmental, climate, energy, and resource topics are regularly offered. Within the interdisciplinary module, courses from adjacent disciplines can be selected.
During the third semester, students have the opportunity to apply for a study visit abroad.

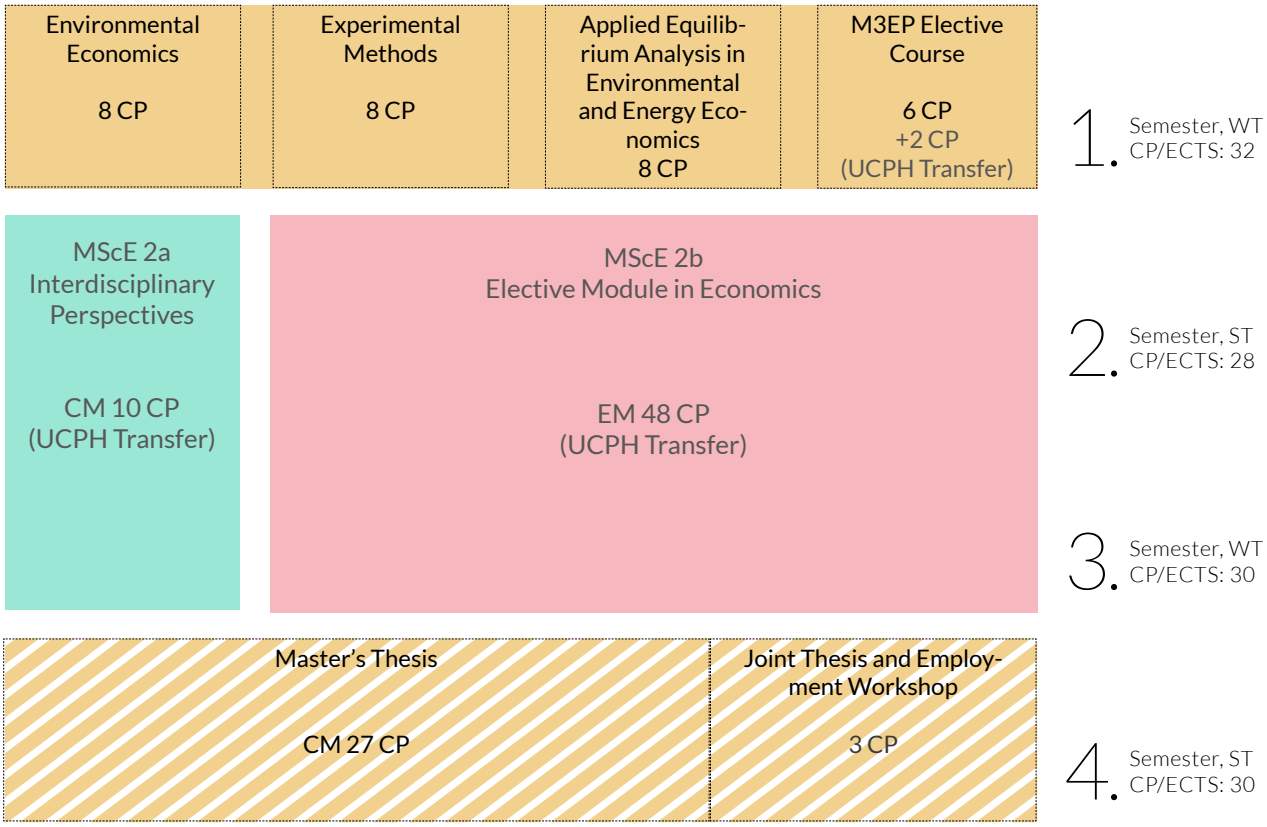
In the fourth semester, the programme concludes with a Master's thesis in Environmental Economics.

M.Sc. Economics - Environmental Economics Track - cont'd

Learning objectives

After successful completion, students will be able to handle the powerful conceptual, theoretical and empirical tools of modern environmental economics. They will be able to use specific techniques and methodologies to identify the economic drivers of environmental problems and to determine the nature and shape of desirable environmental policy objectives. Students will be able to determine suitable instruments for implementing policy objectives and to assess their relative performance in different settings.
Upon completion, students will be able to critically assess the premises, causal pathways, and impacts of proposed environmental policies, to develop their own policy proposals, and monitor and assess the performance of current programs. Students will also be able to develop independently their own research in environmental economics.

M.Sc. Economics - European Environmental Economics and Policy (M3EP)



CM = Compulsory Module EM = Elective Module

Compulsory Modules Economics	32 CP/ECTS	Interdisciplinary Perspectives	10 CP/ECTS
Elective Modules Economics	48 CP/ECTS	Master's Thesis	30 CP/ECTS
		Total	120 CP/ECTS

Track Coordinator Prof. Timo Goeschl, Ph.D.

Curriculum

After completing the 1st year in Copenhagen, the 2nd year programme in European Environmental Economics and Policy at Heidelberg University offers a specialization in the economic concepts and methods that continue to shape environmental policy in Europe. The first term features a fixed set of three compulsory courses, amounting to 24 ECTS, and a restrictive M3EP elective course of 6 ECTS. The second term features the Master's thesis (27 ECTS) and the joint thesis and employment workshop (3 ECTS).

Learning objectives

After completing the programme, graduates will:

- understand central theories and frameworks within both environmental economics and political science.
- assess the validity of economic statements as well as explain political processes underlying public policy in the context of the green transition.
- perform relevant qualitative as well as quantitative analyses on a multitude of data sources, working in interdisciplinary and problem-oriented teams, and using state-of-the-art analytical techniques from the fields of economics and political science.

M.Sc. Economics - European Environmental Economics and Policy

- understand EU's environmental policy and relate to national implementation across its member states, e.g. in terms of the myriads of issues and decisions that will need to be taken by governments and their implementing agencies, by non-state actors and civil society, and by businesses.
- communicate environmental policy proposals and assessments to relevant decision-makers.understand central theories and frameworks within both environmental economics and political science.
- assess the validity of economic statements as well as explain political processes underlying public policy in the context of the green transition.
- perform relevant qualitative as well as quantitative analyses on a multitude of data sources, working in interdisciplinary and problem-oriented teams, and using state-of-the-art analytical techniques from the fields of economics and political science.
- understand EU's environmental policy and relate to national implementation across its member states, e.g. in terms of the myriads of issues and decisions that will need to be taken by governments and their implementing agencies, by non-state actors and civil society, and by businesses.
- communicate environmental policy proposals and assessments to relevant decision-makers.

Transfer Scheme

Credits completed at the University of Copenhagen (UCPH) in the first year or the Environmental Economics amd Policy joint programme are transferred to the following modules of the M.Sc. Economics:

1. MScE1a: Advanced Economics
   - 2 CP from Analyzing Public Policy (UCPH)
2. MScE2a: Interdisciplinary Perspectives
   - 2,5 CP from Analyzing Public Policy (UCPH)
   - 7,5 CP from Introduction to European Environmental Economics and Policy (UCPH)
3. MSc2b: Elective Module in Economics
   - 3 CP from Analyzing Public Policy (UCPH)
   - 45 CP from the remaining six courses at UCPH

Grade Conversion

Grades obtained at the University of Copenhagen are transferred as follows:

University of Copenhagen	Heidelberg University
12	1,0
10	1,7
7	2,3
4	3,0
2	4,0
00	5,0
-3	5,0