



## Economics (MSc)

VU University Amsterdam - Fac. der Economische Wet. en Bedrijfsk. - M Economics - 2015-2016

The Master's programme in Economics is a high quality one-year programme designed for the professional economist. Questions illustrating the range of problems addressed by economics are for instance: How effective are large-scale public-sector retraining programmes in reducing unemployment? Why does poverty persist? How effective are government interventions designed to assist households exposed to income shocks? Does economic development imply the deterioration of the environment and bio-diversity, and how might this affect welfare in its broader sense? The Master's programme in Economics will equip students with the essential tools of economics and teach them how to apply these tools in real-life situations.

Read the [full description](#) of the programme or use the schedule below for information on the individual courses in the programme.

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## M Economics - Development Economics

Courses:

Name	Period	Credits	Code
<a href="#">Advanced Macroeconomics</a>	Period 2	6.0	E_EC_AMAEC
<a href="#">Advanced Methods for Applied Economic Research</a>	Period 1	6.0	E_EC_AMAER
<a href="#">Advanced Microeconomics</a>	Period 1	6.0	E_EC_AMIEC
<a href="#">Globalization, Growth and Development</a>	Period 4	6.0	E_EC_GGD
<a href="#">Math Refresher</a>		0.0	E_EC_MATHREF
<a href="#">Microeconomics for Development</a>	Period 2	6.0	E_EC_MED
<a href="#">Research Project Economics</a>	Period 3	6.0	E_EC_RPEC
<a href="#">Thesis</a>	Ac. Year (September)	18.0	E_EC_THS
<a href="#">Workshop Introduction to STATA</a>		0.0	E_EC_STATA

## M Economics - Additional Electives

Courses:

Name	Period	Credits	Code
<a href="#">Financial Markets and Institutions</a>	Period 4	6.0	E_FIN_FMI
<a href="#">Human Development</a>	Period 4	6.0	E_EC_HDEV
<a href="#">Labour Economics</a>	Period 4	6.0	E_EC_LABEC
<a href="#">Regional and Urban Economics</a>	Period 2	6.0	E_STR_RUE
<a href="#">Strategic and Cooperative Decision Making</a>	Period 2	6.0	E_EORM_SCDM
<a href="#">Time Series Econometrics</a>	Period 4	6.0	E_EORM_TSE
<a href="#">Transport Economics</a>	Period 4	6.0	E_STR_TREC

## M Economics - Global Challenges

Courses:

Name	Period	Credits	Code
<a href="#">Advanced Macroeconomics</a>	Period 2	6.0	E_EC_AMAEC

Advanced Methods for Applied Economic Research	Period 1	6.0	E_EC_AMAER
Advanced Microeconomics	Period 1	6.0	E_EC_AMIEC
Economics of Climate Change	Period 4	6.0	E_STR_ECC
Globalization, Growth and Development	Period 4	6.0	E_EC_GGD
Math Refresher		0.0	E_EC_MATHREF
Research Project Economics	Period 3	6.0	E_EC_RPEC
Thesis	Ac. Year (September)	18.0	E_EC_THS
Workshop Introduction to STATA		0.0	E_EC_STATA

## M Economics - Internat and Macroec Pol

Courses:

Name	Period	Credits	Code
Advanced Macroeconomics	Period 2	6.0	E_EC_AMAEC
Advanced Methods for Applied Economic Research	Period 1	6.0	E_EC_AMAER
Advanced Microeconomics	Period 1	6.0	E_EC_AMIEC
Globalization, Growth and Development	Period 4	6.0	E_EC_GGD
Macroeconomic Policy in the EU	Period 2	6.0	E_EC_MPEU
Math Refresher		0.0	E_EC_MATHREF
Research Project Economics	Period 3	6.0	E_EC_RPEC
Thesis	Ac. Year (September)	18.0	E_EC_THS
Workshop Introduction to STATA		0.0	E_EC_STATA

## M Economics - No specialisation

Courses:

Name	Period	Credits	Code
Advanced Macroeconomics	Period 2	6.0	E_EC_AMAEC
Advanced Methods for Applied Economic Research	Period 1	6.0	E_EC_AMAER
Advanced Microeconomics	Period 1	6.0	E_EC_AMIEC
Economics of Climate Change	Period 4	6.0	E_STR_ECC

Economics of the Welfare State	Period 2	6.0	E_EC_EWS
Financial Markets and Institutions	Period 4	6.0	E_FIN_FMI
Globalization, Growth and Development	Period 4	6.0	E_EC_GGD
Human Development	Period 4	6.0	E_EC_HDEV
Industrial Organization and Competition Policy	Period 4	6.0	E_EC_IOCP
Labour Economics	Period 4	6.0	E_EC_LABEC
Macroeconomic Policy in the EU	Period 2	6.0	E_EC_MPEU
Math Refresher		0.0	E_EC_MATHREF
Microeconomics for Development	Period 2	6.0	E_EC_MED
Regional and Urban Economics	Period 2	6.0	E_STR_RUE
Research Project Economics	Period 3	6.0	E_EC_RPEC
Strategic and Cooperative Decision Making	Period 2	6.0	E_EORM_SCDM
Thesis	Ac. Year (September)	18.0	E_EC_THS
Time Series Econometrics	Period 4	6.0	E_EORM_TSE
Transport Economics	Period 4	6.0	E_STR_TREC
Workshop Introduction to STATA		0.0	E_EC_STATA

## M Economics - Public Policy

Courses:

Name	Period	Credits	Code
Advanced Macroeconomics	Period 2	6.0	E_EC_AMAEC
Advanced Methods for Applied Economic Research	Period 1	6.0	E_EC_AMAER
Advanced Microeconomics	Period 1	6.0	E_EC_AMIEC
Economics of the Welfare State	Period 2	6.0	E_EC_EWS
Industrial Organization and Competition Policy	Period 4	6.0	E_EC_IOCP
Math Refresher		0.0	E_EC_MATHREF
Research Project Economics	Period 3	6.0	E_EC_RPEC
Thesis	Ac. Year (September)	18.0	E_EC_THS
Workshop Introduction to STATA		0.0	E_EC_STATA

## Advanced Macroeconomics

<b>Course code</b>	E_EC_AMAEC (60422010)
<b>Period</b>	Period 2
<b>Credits</b>	6.0
<b>Language of tuition</b>	English
<b>Faculty</b>	Fac. der Economische Wet. en Bedrijfsk.
<b>Coordinator</b>	prof. dr. P.A. Gautier
<b>Examinator</b>	prof. dr. P.A. Gautier
<b>Teaching staff</b>	prof. dr. P.A. Gautier
<b>Teaching method(s)</b>	Lecture
<b>Level</b>	400

### Course objective

The students will be able to actively read current literature and embark on their own research projects using the knowledge gained about the analytical, mathematical, and statistical tools of modern macroeconomics. The tools include dynamic optimization, signal extraction, Nash bargaining, and the basic building blocks of DSGE models.

### Course content

This course provides coverage at an advanced level of the building blocks of macroeconomics. Models of economic growth will be built up from intertemporal optimization decisions of firms and households. Special attention is given to the distribution of income (i.e. the implications of modern growth theory for the theory of Piketty). Next, the course will present the basic tools of Real Business Cycle and New Keynesian models. We also consider modern theories of financial crises and pay a lot of attention to the recent financial and euro crisis. Then, we will consider equilibrium search models which form the core of macro labor. Finally, we discuss budget deficits and Ricardian equivalence plus new political economy models where the behavior of policy makers are part of the model.

### Form of tuition

lecture

### Type of assessment

written interim examination  
plus problem sets.

### Course reading

Romer, David Advanced Macro Economics. 3rd edition, McGraw Hill.

## Advanced Methods for Applied Economic Research

<b>Course code</b>	E_EC_AMAER (60422070)
<b>Period</b>	Period 1
<b>Credits</b>	6.0
<b>Language of tuition</b>	English
<b>Faculty</b>	Fac. der Economische Wet. en Bedrijfsk.
<b>Coordinator</b>	prof. dr. B. van der Klaauw
<b>Examinator</b>	prof. dr. B. van der Klaauw

<b>Teaching staff</b>	prof. dr. B. van der Klaauw, S. Sovago
<b>Teaching method(s)</b>	Lecture, Study Group
<b>Level</b>	400

### Course objective

After the course students should be able to critically evaluate the quality of empirical research in economic applications. Furthermore, they should be capable of performing empirical research themselves, for example, for their thesis. The latter implies that they can decide about the appropriate model, are aware of the strength and weaknesses of the model and can estimate its parameters.

### Course content

This course aims to make students familiar with various microeconomic methods. These methods are often used in economic research, both to test predictions from economic theory and to assess the effectiveness of economic policy. During the course attention will be devoted both to the theory underlying the different techniques and the practical application. The software package Stata will be used for the empirical applications. An important aspect of the course is that students learn how to interpret estimation results.

### Form of tuition

Lectures  
Practical assignments

### Type of assessment

The practical homework assignments count for 20% of the final grade, the written exam for the other 80%. However, this is only the case if (1) the exam grade is lower than the grade for the homework assignments, and (2) the exam grade exceeds 5.0. If both conditions are not met, the final grade is the exam grade.

### Course reading

Stock, J.H. and M.W. Watson, Introduction to Econometrics. Pearson Education Inc., 3rd edition, 2012

### Entry requirements

Introductory course in econometrics at Bachelor level.

### Recommended background knowledge

Common used statistical tests and simple regression analysis.

### Remarks

Students who are not familiar with the software package STATA are encouraged to attend the workshop "Introduction to Stata".

## Advanced Microeconomics

<b>Course code</b>	E_EC_AMIEC ()
<b>Period</b>	Period 1
<b>Credits</b>	6.0
<b>Language of tuition</b>	English
<b>Faculty</b>	Fac. der Economische Wet. en Bedrijfsk.
<b>Coordinator</b>	dr. S. Hochguertel



<b>Examinator</b>	dr. S. Hochguertel
<b>Teaching method(s)</b>	Lecture, Study Group
<b>Level</b>	400

### Course objective

This course prepares the theoretical groundwork for microeconomic policy courses elsewhere in the MSc Economics curriculum, highlighting traditional economic approaches, their normative foundations, and recent theories of information economics. Goal of the course is to make the student steadfast in applying fundamental concepts of microeconomic theory at an advanced level.

By the end of the course the student will:

- be familiar with the main, unifying microeconomics principles, and know how to analyze microeconomic problems using mathematical tools
- know the main concepts of consumer choice and firm behavior, and their relevance for equilibrium and welfare analysis
- be able to evaluate economic policy with regard to efficiency and equity and know of the limitations to economic policy
- know of modeling aspects from the economics of information and incentives and be familiar with basic features of efficient contracts under incomplete information
- know of possibilities and limitations to mechanism design in applied policy fields, such as auctions and matching.

### Course content

This course focuses on modeling and requires substantial math skills (in particular calculus). Traditional topics (part I) include the theory of the firm, consumer choice and demand, partial and general equilibrium analysis and aspects of market failure. Part II covers risk and insurance under symmetric and asymmetric information, concepts of game theory, as well as the economics of information and incentives. Using problem sets and exercises will increase and deepen understanding and help broaching a large number of microeconomic policy fields, such as concepts and measurement of household welfare, issues of taxation and social policy, and policy design of market institutions. Policy applications in themselves are not subject of the current course, but rather their preparation.

### Form of tuition

lecture  
tutorial

### Type of assessment

Written examination (75%), tutorial (problem sets, 25%) , if exam grade 5.0 or higher.

### Course reading

Lecture notes and articles (details: t.b.a.); every student should have at hand a copy of Snyder and Nicholson, Microeconomic Theory: Basic Principles and Extensions, 11th ed., that serves as core background reference.

### Entry requirements

Familiarity with Microeconomics at the level of Varian, H. R. Intermediate Microeconomics. 8th edition. W. W. Norton, 2010.

Familiarity with Mathematics at the level of Sydsaeter, Knut and Hammond, Essential Mathematics for Economic Analysis, Prentice Hall, 3rd ed., 2008

### Recommended background knowledge

Students wishing to refresh their math skills are strongly encouraged to attend the course "Math Refresher", starting end of August (details t.b.a.).

For more information about Math Refresher, see Blackboard.

## Economics of Climate Change

<b>Course code</b>	E_STR_ECC ()
<b>Period</b>	Period 4
<b>Credits</b>	6.0
<b>Language of tuition</b>	English
<b>Faculty</b>	Fac. der Economische Wet. en Bedrijfsk.
<b>Coordinator</b>	dr. S. Poelhekke
<b>Examinator</b>	dr. S. Poelhekke
<b>Teaching staff</b>	prof. dr. R.S.J. Tol, dr. S. Poelhekke
<b>Teaching method(s)</b>	Lecture
<b>Level</b>	400

### Course objective

Environmental problems can be of a local, a regional or a global nature. This course focuses on global issues. Two of the most important global environmental problems are the enhanced greenhouse effect and the relationship between international trade and the environment. This course aims to provide the student with a deeper insight in these issues, with a focus on environmental policy making in a globalizing world.

After having completed this course, you

- have a deep understanding of the fundamental difficulties and complexities of environmental policy making in an international context
- have gained insights in the economics of international agreements and international trade
- are able to apply to theory to cases such as climate change, acidification and ozone depletion
- have sharpened your economic analysis in the group discussions and improved your presentations skills

### Course content

The course consists of lecturers teaching the state- of- the- art, and students giving presentations on seminal papers in the literature.

The lectures cover the following topics (provisional scheme)

- Introduction: Externalities and environmental policy
- Trade the environment: pollution havens versus factor endowments
- International environmental agreements
- Economic impacts of climate change

- Climate change policy making: instruments and costs
- The economics of acidification and ozone depletion

The first six classes are on the relationship between trade and the environment. Common wisdom is that trade is the source of many environmental problems. One of the main reasons for this is that governments are afraid that domestic environmental policies will reduce the home economy's international competitiveness and hence environmental policies are set too lax. In the first four lectures we analyze to what extent this fear is correct, both theoretically and empirically. We compare how the trade-off between international competitiveness and the environment depends on the type of pollutant (local pollutants such as PM10, or transboundary pollutants, such as SO<sub>2</sub>) as well as on the size of the domestic economy. In lectures 5 and 6 we turn to the issue of international agreements. Writing down a protocol which requires countries to reduce their emissions of CO<sub>2</sub> or SO<sub>2</sub> is easy (see for example the Kyoto Protocol and the Sofia Protocol), but what are the incentives for countries to actually join the coalition? And what is the role of trade sanctions therein?

The last eight lectures are on the economics of climate change and climate policy, and also on the problems of acidification and ozone depletion. The following subjects are analysed. What is climate change, and what are its causes and consequences? What are the economic impacts of climate change? What are the costs of emission reduction? How can emission reductions be achieved? What lessons do acidification and ozone policy hold for climate policy? What is optimal and equitable climate policy? How likely is this in reality? Are there effective and acceptable alternatives to optimal climate policy?

### **Type of assessment**

essay  
presentations  
take home exam

### **Course reading**

Books:

- Perman et al., Natural Resource and Environmental Economics, Addison Wesley, 4th edition, 2011.
- Richard Tol, Climate Economics: Economic Analysis of Climate, Climate Change and Climate Policy, Edward Elgar Publishing, 29 aug. 2014
- 208 pagina's
- Copeland and Taylor, Trade and the Environment, Princeton University Press, 2003

Articles (tbd):

- Nordhaus, William D & Yang, Zili, 1996. "A Regional Dynamic General-Equilibrium Model of Alternative Climate-Change Strategies," American Economic Review, vol. 86(4), pages 741-65.
- Hoel, Michael & Shapiro, Perry, 2003. "Population mobility and transboundary environmental problems," Journal of Public Economics, Elsevier, vol. 87(5-6), pages 1013-1024, May.
- Scott Barrett, Self-Enforcing International Environmental Agreements, Oxford Economic Papers, New Series, Vol. 46, Special Issue on Environmental Economics (Oct., 1994), pp. 878-894.
- Santiago J. Rubio & Alistair Ulph, 2006. "Self-enforcing international environmental agreements revisited," Oxford Economic Papers, Oxford University Press, vol. 58(2), pages 233-263, April.

- de Zeeuw, Aart, 2008. "Dynamic effects on the stability of international environmental agreements," *Journal of Environmental Economics and Management*, Elsevier, vol. 55(2), pages 163-174, March.
- Levinson, Arik. 2009. "Technology, International Trade, and Pollution from US Manufacturing." *American Economic Review*, 99(5): 2177-92.
- Wolfgang Keller and Arik Levinson, "Pollution Abatement Costs and Foreign Direct Investment Inflows to U.S. States", *The Review of Economics and Statistics*, 2002, vol. 84, issue 4, pages 691-703.
- Steven Poelhekke and Frederick van der Ploeg, "Green havens and pollution havens", *The World Economy*, forthcoming.

### Entry requirements

Microeconomics.

## Economics of the Welfare State

<b>Course code</b>	E_EC_EWS ()
<b>Period</b>	Period 2
<b>Credits</b>	6.0
<b>Language of tuition</b>	English
<b>Faculty</b>	Fac. der Economische Wet. en Bedrijfsk.
<b>Coordinator</b>	prof. dr. M. Lindeboom
<b>Examinator</b>	prof. dr. M. Lindeboom
<b>Teaching method(s)</b>	Lecture
<b>Level</b>	400

### Course objective

The design of the different programs of the welfare state (such as unemployment insurance, disability insurance and health care) an enormous impact on the individual well being and individual behavior. The design of social insurances is complicated by a trade- off between providing a decent coverage to the population and the existence of moral hazard and adverse selection problems. Together with economic and demographic changes such as aging this provides challenges for policy makers. In this course, we will consider the contribution economists can make to the design of equitable and efficient social policies in the presence of such challenges.

After following this course, you:

- Have an overview of the different welfare state models that exist in the modern world
- Understand the consequences of the welfare state for individual behavior and individual well- being
- Are able to use economic arguments for government intervention in different parts of the welfare state
- Are able to evaluate welfare state programs and to apply economic arguments to advise (policymakers) on how to improve welfare state programs that face economic and demographic challenges.

### Course content

This course discusses the Welfare State and social insurances and policies in the field of unemployment, disability, pensions, sickness and the provision of health care. The design of social insurances is

complicated by a trade-off between providing a decent coverage to the population and the existence of moral hazard and adverse selection problems. Together with economic and demographic changes such as aging this provides challenges for policy makers. There exist marked differences in institutions of the Welfare Systems across OECD countries and these differences may be of relevance in explaining across country variation in relevant social outcomes. In this course, we will consider the contribution economists can make to the design of equitable and efficient social policies in the presence of such challenges.

**Form of tuition**

lecture

**Type of assessment**

written interim examination

**Course reading**

To be announced.

## Financial Markets and Institutions

<b>Course code</b>	E_FIN_FMI (60442080)
<b>Period</b>	Period 4
<b>Credits</b>	6.0
<b>Language of tuition</b>	English
<b>Faculty</b>	Fac. der Economische Wet. en Bedrijfsk.
<b>Coordinator</b>	dr. I.P.P. van Lelyveld
<b>Examinator</b>	dr. I.P.P. van Lelyveld
<b>Teaching staff</b>	dr. I.P.P. van Lelyveld
<b>Teaching method(s)</b>	Lecture
<b>Level</b>	400

**Course objective**

The purpose of this course is to develop an understanding of the economics underlying financial intermediation, financial markets and banking, with a particular focus on the recent financial turmoil and its consequences.

**Course content**

We start by discussing the traditional role of commercial banks in the financial system and how banks manage risks. Topics include the major risks faced by banks, lending and asymmetric information, credit rationing, and securitisation. This leads us into a discussion of financial fragility covering, inter alia, liquidity provision, bank runs, deposit insurance and opacity. Then we discuss how various regulations could be helpful or not. A natural follow up is laying out the causes, triggers and dynamics of the Great Crisis (2007-2009). Given the depth of the crisis, there has been a flurry in new regulation. What are the objectives of these regulations, are these or will these be met. Since traditionally regulation has been focussed on solvency will dedicate a lecture on liquidity as well as this has proven to be quite a separate type of risk.

The next two lectures cover the plumbing of the system and other large institutional participants. The former lecture will provide us some

understanding of how risks in the system not only originate with the actions (i.e., trades) but also with the markets are set up. The latter will discuss how, next to (investment) banks, other large institutional investors are coming to the fore.

In the final part of the course we will turn to three distinct markets: the derivatives market, the interbank and the international banking market. How do these markets operate, particularly in the crisis, and how are they evolving.

Two guest lectures from practitioners will provide more colour on how central banks have handled the sovereign crisis and how asset managers function.

### **Form of tuition**

The lectures will be complemented by a writing assignment (see below)

All information regarding the timetable of the course can be found at <http://rooster.vu.nl>.

To facilitate the Writing Assignment a non-compulsory lecture on writing in English will be organised in the second week (9 February, 9.00-10.00 am, 5A-24).

In the second week there will be an additional non-compulsory lecture to discuss question Mishkin et al for those without a banking background (e.g. econometrics students). (9 February, 10.00-11.00 am, 5A-32)

Question should be raised on the Blackboard forum.

### **Type of assessment**

Final grade is based on a two-hour, closed-book written final exam (80%) and the grade on an open-book essay to be written in groups of at most three students (20%). More details regarding the topics and the structure of the essay will be provided during the lectures and tutorials. If no essay was submitted, it will be graded 0 (zero). In the case of a resit in later periods (i.e., in 2017 or later), the essay result will be disregarded and the resit grade will be based 100% on the examination. The exam questions will cover the topics and the exercises treated in the class. The lecture notes and solutions published on Blackboard can be used as a faithful guide for the required material and level of difficulty.

Part of understanding is being able to present your findings. In many cases, getting the form right is just as important as the actual content. Findings can be presented in many ways. For example as an academic article, a thesis, a Powerpoint or a column. In this writing assignment we will aim for a contribution to a policy oriented blog such as VoxEU ([www.voxeu.org](http://www.voxeu.org)).

Currently the topic is set to be the split between investment banking (the casino) from retail banking (the utility). Such a split has been argued to increase financial stability and reduce moral hazard. However, if a more interesting policy question arises closer to the course, the topic might change.

The assignment should be written in groups of at most three. Please use the appropriate sign up tool on Blackboard. Further details will be given in the first lecture. Note that a non-compulsory lecture on writing in English will be planned in the first week.

The deadline for the assignment is Lecture 10.

### **Course reading**

We will make use of the following non-mandatory textbook:

- Mishkin, F., K. Matthews, and M. Giuliadori, *The Economics of Money, Banking and Finance*, European edition. From this book we will cover all of Chapters 8 through 12.

In addition several mandatory academic papers will be posted to Blackboard. Lecture notes will be available on Blackboard just before each class. Solutions for all exercises will be available after lectures. Other non-mandatory (but useful) materials such as academic papers, press articles or book titles will be posted on Blackboard.

### Entry requirements

Students should have followed a bachelor course in Money and Banking.

## Globalization, Growth and Development

<b>Course code</b>	E_EC_GGD (60442050)
<b>Period</b>	Period 4
<b>Credits</b>	6.0
<b>Language of tuition</b>	English
<b>Faculty</b>	Fac. der Economische Wet. en Bedrijfsk.
<b>Coordinator</b>	prof. dr. C.T.M. Elbers
<b>Examinator</b>	prof. dr. C.T.M. Elbers
<b>Teaching staff</b>	prof. dr. C.T.M. Elbers
<b>Teaching method(s)</b>	Lecture
<b>Level</b>	400

### Course objective

Aim of the course is to study aspects of globalization, growth and development that are fruitfully studied from the perspective of the economics discipline. After following the course the student will

- know the basic facts concerning the topics discussed in the course
- have a thorough understanding of these topics, in particular their economic dimension
- have learnt various empirical research techniques that can be applied within this field of economics
- be able to present and discuss current journal articles and book chapters on globalization

### Course content

Globalization poses both challenges and offers opportunities to rich and poor countries. The course focuses on a number of themes that have been central in the academic and public discussion of recent trends in the world economy. Among them are:

- Relationship between growth, trade and poverty
- Globalization and inequality
- Trade shocks, resources and civil conflict
- Environmental and labour standards
- Volatility of terms-of-trade
- Institutions
- Migration
- Financial stability

More topics in globalization are introduced in the course in the form of student presentations. The course stresses the importance of empirical research and devotes significant time to the empirical strategies that have been used by researchers in studying globalization.

### Form of tuition

**Course reading**

Selected articles

**Entry requirements**

Advanced Macroeconomics 4.2 and International Economics 3.2

## Human Development

<b>Course code</b>	E_EC_HDEV (60442130)
<b>Period</b>	Period 4
<b>Credits</b>	6.0
<b>Language of tuition</b>	English
<b>Faculty</b>	Fac. der Economische Wet. en Bedrijfsk.
<b>Coordinator</b>	prof. dr. M.P. Pradhan
<b>Teaching method(s)</b>	Lecture
<b>Level</b>	400

**Course objective**

An active study of the advanced literature of the human development aspects of development economics, the branch of economics that focusses on the specific economic problems of less developed nations. A thorough exercise in independently formulating and studying relevant research issues and analysing in a constructive and critical manner the problems of development economics in the human development context.

**Course content**

The central message of the HD Report is that while growth in national production (GDP) is absolutely necessary to meet all essential human objectives, what is important is to study how this growth translates or fails to translate into human development in various societies' (Human Development Report 1990). The introduction of the notion of Human Development has (re)focused the general development debate on issues other than economic (GDP) growth. Most notably, all efforts to measure human development include measures of health, education and social capital. This course will provide the student with a thorough economic understanding of these various dimensions of human development. Based on the foundations of the economics of education, the economics of health (and health care) we will study the various dimensions of human development and their interaction with poverty. Measurement issues of human development and of poverty will be introduced, as well impact analysis of policies that lead to or hamper human development. At the end, using the notion of human development, the student should be able to analyze the socio- economic status of a country, and, based on that information, sketch the broad outline of a viable human development policy.

**Form of tuition**

Course taught at the UvA.

**Type of assessment**

Written examination, presentation and participation in classroom discussion, term paper.



### Course reading

Articles provided during the course.

### Recommended background knowledge

Proven knowledge of basic micro economics and basic applied econometrics

### Remarks

Co-ordinator: prof dr. Menno Pradhan (UvA)

## Industrial Organization and Competition Policy

<b>Course code</b>	E_EC_IOCP ()
<b>Period</b>	Period 4
<b>Credits</b>	6.0
<b>Language of tuition</b>	English
<b>Faculty</b>	Fac. der Economische Wet. en Bedrijfsk.
<b>Coordinator</b>	dr. E.I. Motchenkova
<b>Examinator</b>	dr. E.I. Motchenkova
<b>Teaching method(s)</b>	Lecture
<b>Level</b>	400

### Course objective

This course is designed to give students an overview of the mainstream theory of Industrial Organization.

After following this course, students

- can define and recognize main types and determinants of market structure
- can name and explain the determinants of the actions taken by firms and are able to explain the relationships between firms' actions and market outcomes
- are able to apply mathematics, game theory, welfare analysis and micro-economic tools to analyze the problem of collusion, entry and exit decisions, vertical control, product differentiation, and adoption of new technologies issues
- can describe and analyze (both analytically and graphically) the main models used for analysis of strategic behavior of firms under asymmetric information
- are able to determine optimal firm and regulator behavior conditional on the type of market structure and nature of competition in the market and draw policy conclusions

### Course content

Many markets of interest are dominated by only few firms. These firms not only choose their prices and outputs, but also the quality and design of their products, engage in advertising campaigns and make investments in R&D. They also decide on whether to enter or exit markets, whether to merge, vertically integrate, or to collude with rival firms. These choices have strong effects on the markets, in which firms operate, and may also have wider repercussions throughout the economy. This course presents an approach - based on strategic decision making - for understanding the functioning of such markets. We also use this approach to clarify the role of the government in regulating economic activity.

This course is designed to give students an overview of the mainstream theory of Industrial Organization, to provide students with insights in the organization of markets, and to give an overview of the main analytical tools used for analysis of imperfectly competitive markets. The course is primarily theoretical. At the same time, a number of empirical and experimental results will be discussed.

Part 1 of the course concerns non-strategic industrial organization and consists of the theory of the firm, analysis of monopoly power, price discrimination and vertical integration. Part 2 studies strategic industrial organization. The topics are static oligopoly models, dynamic price competition, spatial competition and advertising, incumbent/entrant behavior, R&D and adoption of new technologies. Also substantial attention will be devoted to applications of the IO tools for analysis of antitrust policy. There we will focus on European and US competition law, collusion, abuse of dominant position, and mergers.

**Form of tuition**

Lectures and Workshops

**Type of assessment**

written interim examination - 80 percent of the final grade  
 problem sets and seminar presentations - 20 percent of the final grade

**Course reading**

Tirole, J. (1988), The Theory of Industrial Organization. MIT Press.  
 Motta, M. (2004), Competition Policy: Theory and Practice, Cambridge University Press.  
 Reader with articles provided on Black Board

**Entry requirements**

Microeconomics course

**Recommended background knowledge**

Bachelor level courses in Industrial Organization

**Labour Economics**

<b>Course code</b>	E_EC_LABEC (60422030)
<b>Period</b>	Period 4
<b>Credits</b>	6.0
<b>Language of tuition</b>	English
<b>Faculty</b>	Fac. der Economische Wet. en Bedrijfsk.
<b>Coordinator</b>	dr. S. Dobbelaere
<b>Examinator</b>	dr. S. Dobbelaere
<b>Teaching staff</b>	dr. S. Dobbelaere, prof. dr. P.W.C. Koning
<b>Teaching method(s)</b>	Lecture
<b>Level</b>	400

**Course objective**

This course is an introduction to labor economics with an emphasis on applied micro-economic theory and empirical analysis. The aim of the course is to acquaint students with traditional and contemporary topics in labor economics, including wage and employment determination,

earnings inequality, technological change and globalization, search, human capital, government policy, and institutions in the labor market. As to the role of institutions, special emphasis will be devoted to the design of active labor market policies.

The following course objectives are defined:

- Demonstrating a theoretical understanding of how labor markets operate.
- Understanding the recent developments of wage determination in imperfect labor markets and of human capital theory.
- Understanding how institutional forces, technological change and globalization shape labor market performance.
- Understanding the impact of policy instruments on the search behavior of individuals.
- Learning how to distinguish alternative theories empirically and how key parameters are obtained from data.
- Mastering economic and analytical tools to explain labor market outcomes.
- Exploring competing theories and critically evaluating existing empirical evidence.

### Course content

This course covers a systematic development of theories of wage determination over the past decades. We focus on wage-determination models that assume that labor markets are imperfectly competitive, in particular wage determination under trade unions and wage determination under oligopsonistic competition. We study employment in a dynamic context, emphasizing the role of search frictions. We concentrate on earnings inequality, technical change and globalization. These topics are politically and economically important and underscore a lot of modern labor economics. We focus on human capital investment models. We conclude with an analysis of labor market institutions, in particular the design of active labor market policies.

### Form of tuition

Main lectures and tutorials.

### Type of assessment

Interim assessment: Problem sets, academic research paper presentations and discussions. End of period: Written, closed-book exam.

### Course reading

To be determined.

## Macroeconomic Policy in the EU

<b>Course code</b>	E_EC_MPEU ()
<b>Period</b>	Period 2
<b>Credits</b>	6.0
<b>Language of tuition</b>	English
<b>Faculty</b>	Fac. der Economische Wet. en Bedrijfsk.
<b>Coordinator</b>	dr. B.A. Brugemann
<b>Examinator</b>	dr. B.A. Brugemann
<b>Teaching method(s)</b>	Lecture
<b>Level</b>	400

## **Course objective**

After this course you will have:

- Ability to contribute to the debate about the future of EMU based on solid economic insights and analysis
- Knowledge of institutional aspects of monetary, fiscal, and financial policy in the EU
- Knowledge of relevant theories and empirical evidence concerning monetary, fiscal, and financial decision making in the EU
- Improved writing skills through development of a policy brief

## **Course content**

The ongoing crisis of the Eurozone has exposed important weaknesses in the construction of the Economic and Monetary Union of the European Union (EMU). In this course we will study policy coordination and decision making in the EU, covering monetary policy, fiscal policy, and financial policy. To develop a well-rounded understanding of the issues, we will study relevant economic theories, examine the pertinent empirical evidence, and take into account key institutional aspects. The key objective of the course is to develop your ability to contribute to the debate about macroeconomic policy in Europe based on solid economic insights and analysis. You will practice this ability along with your writing skills through the development of a policy brief.

The course consists of three parts, focusing on monetary, fiscal, and financial policy, respectively.

Each part is largely self-contained. The first part on monetary policy is taught by Björn Brügemann (VU). In the second part, Arjan Lejour of the Centraal Planbureau (CPB) will focus on fiscal policy and institutions. In the final part, Neeltje van Horen of the Nederlandsche Bank (DNB) will focus on the financial sector.

## **Form of tuition**

Discussion of Readings, Assignments, Lecture

## **Type of assessment**

Written Exam, Writing of Policy Brief

## **Course reading**

There is no textbook. The readings consist primarily of academic articles. Central readings are:

- Corsetti, G. and Pesenti, P. (2009). The simple geometry of transmission and stabilization in closed and open economies. In NBER International Seminar on Macroeconomics 200, University of Chicago Press.
- Oates, W. E. (2005). Toward a second-generation theory of scalar federalism. *International tax and public finance*, 12(4):349–373.
- Bernanke, B. S. and Gertler, M. (1995). Inside the black box: The credit channel of monetary policy transmission. *Journal of Economic Perspectives*, 9(4):27–48.

## **Entry requirements**

Bachelor economics or another bachelor plus premaster.

## **Recommended background knowledge**

Good knowledge of macro- and microeconomics as well as methods of empirical analysis.

## **Math Refresher**

<b>Course code</b>	E_EC_MATHREF ()
<b>Credits</b>	0.0
<b>Language of tuition</b>	English
<b>Faculty</b>	Fac. der Economische Wet. en Bedrijfsk.
<b>Coordinator</b>	S. Kucinskas MPhil
<b>Examinator</b>	S. Kucinskas MPhil
<b>Teaching method(s)</b>	Lecture

### Course content

In the programmes of the MSc Economics and the MSc Spatial, Transport and Environmental Economics (STREEM) a certain level of knowledge on mathematics is assumed. The Math Refresher aims at refreshing this knowledge, so that the math used in the courses will be no obstacle to complete the courses of the programme successfully.

The Math Refresher consists of three lectures and three exercise classes, all in one week. This is the week before the courses in the first block start.

In these three lectures all necessary topics will be covered. The exercises classes offer the opportunity to students to ask questions about the homework exercises.

As the Math Refresher is an optional preparatory course, students cannot earn credits for this course and there will also be no examination.

Students are free to attend only those lectures that discuss the topics they need to refresh.

The topics that will be covered are:

- Topic 1: functions and their properties, differentiation and integration
- Topic 2: exponential growth and present value, optimization (Lagrange, Kuhn-Tucker)
- Topic 3: basics of linear algebra, probability (distributions, moments)

You don't need to enroll for the Math Refresher, just come to the class. For the schedule please look at blackboard.

### Form of tuition

lecture  
exercise classes

### Type of assessment

There is no assessment

### Course reading

This preparatory course does not use a particular textbook. As background reading any textbook on mathematics for economists will do. If you don't have such a textbook and want to buy one:  
Knut Sydsaeter & Peter Hammond, Essential Mathematics for Economic Analysis. Prentice Hall.

### Remarks

This course will take place in the last week of August. See blackboard for more information and course materials.

## Microeconomics for Development

<b>Course code</b>	E_EC_MED (60422090)
<b>Period</b>	Period 2
<b>Credits</b>	6.0
<b>Language of tuition</b>	English
<b>Faculty</b>	Fac. der Economische Wet. en Bedrijfsk.
<b>Coordinator</b>	prof. dr. M.P. Pradhan
<b>Examinator</b>	prof. dr. M.P. Pradhan
<b>Teaching staff</b>	prof. dr. C.T.M. Elbers, prof. dr. R.H. Oostendorp, prof. dr. M.P. Pradhan, prof. dr. P.F. Lanjouw
<b>Teaching method(s)</b>	Lecture
<b>Level</b>	400

### Course objective

In this course we apply microeconomics to topics in development economics. The aim is not to be complete, but to select a number of well- studied topics, stressing their empirical foundation as well as the role of policy. Students should be able to:

- demonstrate knowledge and understanding of microeconomic principles underlying economic development
- have a good understanding of empirical strategies to identify microeconomic foundations of development
- demonstrate an ability to derive policy implications from microeconomic development analysis

### Course content

The concepts and measurement of poverty and principles of targeting for poverty alleviation will be extensively discussed as well as methods for evaluating the impact of policy. The impact of market imperfections, particularly for handling risk, on firm and household behaviour will be covered, including a discussion of consumption smoothing, risk-sharing, diversification and microfinance strategies. The principal-agent relationship between donors and recipients of foreign aid will be illustrated with a discussion of elite capture and the measurement and costs of corruption. During the course, extensive use will be made of empirical evidence.

### Form of tuition

lecture

### Type of assessment

written examination, assignments

### Course reading

Selected articles to be announced.

### Recommended background knowledge

- Advanced Microeconomics (code E\_EC\_AMIEC)
- Advanced Methods for Applied Economic Research (code E\_EC\_AMAER)

## Regional and Urban Economics

<b>Course code</b>	E_STR_RUE (60442140)
<b>Period</b>	Period 2

<b>Credits</b>	6.0
<b>Language of tuition</b>	English
<b>Faculty</b>	Fac. der Economische Wet. en Bedrijfsk.
<b>Coordinator</b>	prof. dr. H.L.F. de Groot
<b>Examinator</b>	prof. dr. H.L.F. de Groot
<b>Teaching staff</b>	prof. dr. H.L.F. de Groot, prof. dr. J. Rouwendal
<b>Teaching method(s)</b>	Lecture
<b>Level</b>	400

### Course objective

The aim of this course is to provide students with an advanced introduction in the field of regional and urban economics. Students learn the theoretical and empirical methods applied in the field, and get a good understanding of the fundamental questions that are addressed in the field and the current state of affairs in the literature. They are trained to critically read and properly understand contributions in the leading journals in the field. At a more specific level, after having taken this course, students have a good understanding of the New Economic Geography Model, are familiar with the theoretical foundations of agglomeration economies and their empirical relevance, understand the theoretical foundations of and can apply spatial interaction modelling, are familiar with regional growth theories, understand the function of regional labour and housing markets, and have a good understanding of the determinants of urban structures.

### Course content

This course covers advanced topics in theoretical and empirical research on regional and urban economics. Key issues are location and potential reasons for clustering of economic activity, spatial interaction (migration, trade, FDI and commuting), patterns of regional economic convergence and divergence, the role of geographic factors in explaining regional economic growth performance, the impact of (spatial) externalities of knowledge production, urban size and growth, urban land use, housing markets and the functioning of regional labour markets. The topics are addressed from a theoretical as well as an empirical perspective.

### Form of tuition

Lectures and Tutorials

### Type of assessment

Written interim examination (75 percent) and Assignments (25 percent)

### Course reading

- Brakman, S., J.H. Garretsen and C. van Marrewijk (2009): *The New Introduction to Geographical Economics*, Cambridge University Press, Cambridge.
- Ciccone, A. and R.E. Hall (1996): 'Productivity and the Density of Economic Activity', *American Economic Review*, 86, pp. 54-70.
- Gallup, J.L., J.D. Sachs and A.D. Mellinger (1999): 'Geography and Economic Development', *International Regional Science Review*, 22, pp. 179-232.
- Glaeser, E.L. and M.E. Kahn (2003): 'Sprawl and Urban Growth', in: J.V. Henderson and J.-F. Thisse (eds), *Handbook of Urban and Regional Economics*, Volume 4, Chapter 56, Elsevier, Amsterdam.
- Glaeser, E.L., H.D. Kallal, J.A. Scheinkman and A. Shleifer

(1992): 'Growth in Cities', Journal of Political Economy, 100, pp. 1126-1151.

• Krugman, P. (1991): 'History and Industry Location: The Case of the US Manufacturing Belt', American Economic Review, 81, pp. 80-83.

## Research Project Economics

<b>Course code</b>	E_EC_RPEC (60432020)
<b>Period</b>	Period 3
<b>Credits</b>	6.0
<b>Language of tuition</b>	English
<b>Faculty</b>	Fac. der Economische Wet. en Bedrijfsk.
<b>Coordinator</b>	dr. S. Hochguertel
<b>Examinator</b>	dr. S. Hochguertel
<b>Teaching method(s)</b>	Study Group
<b>Level</b>	400

### Course objective

During this period, the student writes and presents an academic paper based on a literature review, under supervision from a faculty member.

The goal is to strengthen some essential practical skills that characterize a good economist, namely the ability to master a certain field of literature and to identify the relative contributions of different articles to this field, as well as to identify remaining blind spots, and the ability to present this knowledge in a structured way, both as a written report and in the form of an oral presentation.

Specific learning outcomes upon completion of this curricular item:

- Students are able to identify relevant economic issues, to formulate appropriate research questions, and to proceed to a plan for implementation to answer their question
- Students have developed a feel for what makes a good and useful model and in what context to use it. They have acquired a critical attitude towards scientific literature.
- Students have developed a critical attitude to relevance and shortcomings of empirical data compared to theoretical requirements, and have become aware of limitations in insights that can be gained from theoretical reasoning alone when addressing real- life issues
- Students are able to work independently, and are able to present their findings to both expert and non-expert audiences

### Course content

During this research project, students are asked to review a coherent set of around 10 scientific papers, of which around four core contributions. The process requires to reflect on those contributions, to put them into perspective, and to write a critical evaluation. The review presents the essence of the papers studied, discusses the relatively strong and weak aspects of the different papers, and where relevant compares and confronts the different insights from different approaches, identifying issues for possible further analysis. The project closes with a presentation to fellow students and faculty.



Domain: any area of economics, preferably where sufficient faculty expertise for supervision is available.

**Form of tuition**

Individual supervision by faculty member.

**Type of assessment**

Paper and presentation in public (single grade); subcriteria apply.

**Course reading**

n.a.

**Entry requirements**

None.

**Recommended background knowledge**

Advanced Microeconomics; Advanced Methods for Applied Economic Research; Advanced Macroeconomics

## Strategic and Cooperative Decision Making

<b>Course code</b>	E_EORM_SCDM (64422010)
<b>Period</b>	Period 2
<b>Credits</b>	6.0
<b>Language of tuition</b>	English
<b>Faculty</b>	Fac. der Economische Wet. en Bedrijfsk.
<b>Coordinator</b>	dr. J.R. van den Brink
<b>Examinator</b>	dr. J.R. van den Brink
<b>Teaching staff</b>	prof. dr. ir. G. van der Laan, dr. J.R. van den Brink, dr. I.D. Lindner
<b>Teaching method(s)</b>	Lecture
<b>Level</b>	400

**Course objective**

The aim of this course is to learn and apply methods and techniques from cooperative and noncooperative game theory to economic and managerial problems. Special attention will be given to the analysis and economic application of networks. Students should be able to understand and to apply results that recently appeared in the international journals.

**Course content**

In this course we study strategic and cooperative decision making in situations where more than one party or agent is involved. In these situations the outcome is the result of the individual decisions made by the agents. In strategic decision theory we focus on the decisions made by the agents, where each agent takes account of the fact that its decision influences the outcome, and therefore the decision problem of the other agents. Agents behave strategically if each agent tries to behave in a way that is best for itself. In cooperative decision theory we focus on the outcome (and not on the individual decisions), taking into account the interests of all agents. We study different criteria that an outcome can satisfy, such as efficiency or equity, and look how to find a compromise between these criteria when they are conflicting. The methods we use to analyze and solve these problems borrow from

(non-cooperative and cooperative) game theory, general equilibrium theory and social choice theory. Topics that will be discussed come from the field of

economics and operations research and include: bargaining problems, auctions, cost sharing and allocation problems, operations research games, market games, assignment problems, profit distribution, voting problems, score rules, and location problems. Recently, various network models gained attention in the economic literature and applications.

Therefore, in this course we give special attention to the analysis and economic application of networks.

### Form of tuition

lecture

working group

### Type of assessment

written examination

home assignment

### Course reading

- Moulin, H., Fair Division and Collective Welfare. MIT Press, 2003.

- Lecture sheets, material from MOOC and a selection of recent articles from the literature

### Entry requirements

- Mathematical Economics 1

- Recommended: Mathematical Economics 2

## Thesis

<b>Course code</b>	E_EC_THS ()
<b>Period</b>	Ac. Year (September)
<b>Credits</b>	18.0
<b>Language of tuition</b>	English
<b>Faculty</b>	Fac. der Economische Wet. en Bedrijfsk.
<b>Coordinator</b>	dr. S. Hochguertel
<b>Examinator</b>	dr. S. Hochguertel
<b>Level</b>	500

### Course objective

The final thesis of the MSc program in Economics is a capstone product in which the student demonstrates her or his abilities (i) to conduct independent academic research on a specific question that is of substantive interest to the field of economics, and (ii) to provide a sufficiently deep and thoroughly documented, yet focused answer to that research question.

Note that over and above having to demonstrate proficiency in independent, scientific writing, the thesis should ideally also bear witness to applying advanced (theoretical or empirical) tools of economic analysis.

The thesis emphasizes the creation of an original contribution that goes clearly beyond what can be found elsewhere in the literature. Therefore, the thesis may be seen as the final product of going through the educational program, and it embodies the proof that the student actually is a master in the academic discipline of economics.

Whereas the final product of the thesis is what will count eventually, important learning elements are involved when going through the process of writing a thesis.

### **Course content**

The student develops and writes the thesis under close supervision of a faculty member. The thesis is submitted in the form of an academic paper. The following aspects shall receive due consideration:

**Tools:** The student must be able to select and apply the appropriate research method for answering the research question. The research activities should adhere to high academic and ethical standards. Tools of analysis include applied statistical and econometric methods for work using economic data, and/or tools of theoretical economic modeling.

**Interpretation:** the student should be able to put findings into a theoretical, practical and ethical perspective. He or she should also be able to frankly reveal the limitations of own work and formulate critically constructive questions about the work of others.

**Independence:** the student must be able to work independently under supervision, and possess the intellectual capabilities required for self-directed learning to broach new if related areas of scientific inquiry.

**Presentation:** the student must be proficient in academic writing and expository presentation of results.

**Domain:** any area of economics, preferably where sufficient faculty expertise for supervision is available.

### **Form of tuition**

Individual supervision by faculty member.

### **Type of assessment**

Paper and presentation in public (single grade); subcriteria apply.

### **Course reading**

n.a.

### **Entry requirements**

None.

### **Recommended background knowledge**

Advanced Microeconomics; Advanced Methods for Applied Economic Research; Advanced Macroeconomics; Research Project in Economics

### **Remarks**

Students opting for a specialization need to choose a suitable thesis topic commensurate with that specialization

## **Time Series Econometrics**

<b>Course code</b>	E_EORM_TSE (64432000)
<b>Period</b>	Period 4
<b>Credits</b>	6.0
<b>Language of tuition</b>	English
<b>Faculty</b>	Fac. der Economische Wet. en Bedrijfsk.

<b>Coordinator</b>	prof. dr. S.J. Koopman
<b>Examinator</b>	prof. dr. S.J. Koopman
<b>Teaching method(s)</b>	Lecture
<b>Level</b>	400

### Course objective

To gain insights in economic time series modelling with a focus on theory, methods and computations.

### Course content

This course focuses on the advances of theory and computational methods for time series econometrics. A methodology of econometric programming is explored for a number of selected topics in time series analysis. In particular, time series properties in time and frequency domains, different modeling strategies, likelihood evaluations, filtering methods and Monte Carlo simulation methods are studied. Theory and methods are studied thoroughly while some computer programs need to be developed for the implementation of the methods.

### Form of tuition

lecture  
tutorial

### Type of assessment

written interim examination  
50 percent  
written assignments  
50 percent

### Course reading

Selection of literature:

- Brockwell, P.J. & R.A. Davis, Time Series: Theory and Methods. Springer-Verlag, 1991, 2nd edition.
- Durbin, J. & S.J. Koopman, Time Series Analysis by State Space Methods. Oxford University Press, 2001.
- Kim, C-J & C.R. Nelson, State-Space Models with Regime Switching. The MIT Press, 1999.

## Transport Economics

<b>Course code</b>	E_STR_TREC (60432050)
<b>Period</b>	Period 4
<b>Credits</b>	6.0
<b>Language of tuition</b>	English
<b>Faculty</b>	Fac. der Economische Wet. en Bedrijfsk.
<b>Coordinator</b>	dr. A.J.H. Pels
<b>Examinator</b>	dr. A.J.H. Pels
<b>Teaching staff</b>	dr. A.J.H. Pels
<b>Teaching method(s)</b>	Lecture
<b>Level</b>	400

### Course objective

The aim of this course is to provide students with an advanced knowledge of contemporary transport economics, considering both intra-city transport (e.g. congested road traffic, urban transit) and inter-city transport (notably aviation). Students

- learn theoretical and empirical methods applied in the field of transport economics and in related fields, such as transport planning.
  - get a good understanding of the fundamental policy questions that are addressed in the field, and the methods with which these are addressed.
  - learn the current state of affairs in the literature.
- are trained to critically read and properly understand contributions in the leading journals in the field.

**Course content**

This course covers advanced topics in theoretical and empirical research on urban transport economics. Key issues are demand analysis; cost functions and scale economies for various modes; congestion analysis in static and dynamic formulations; network equilibrium and optimum for deterministic and stochastic network models; first-best and second-best pricing in static and dynamic networks; investment analysis under first-best and second-best pricing; and industrial organization aspects of intra-city (e.g. roads and transit) and inter-city (e.g. airports and airlines) transport. The topics are addressed from a theoretical as well as an empirical perspective.

**Type of assessment**

written interim examination: 70 percent  
 assignments: 30 percent (paper review tutorial 10 percent, network optimization tutorial 10 percent, methods tutorial 10 percent)

**Course reading**

- Small, K.A. and E.T. Verhoef, The Economics of Urban Transportation. Routledge, 2007.
- Additional literature for more specialized topics will be announced at the start of the course.

**Recommended background knowledge**

Microeconomics for spatial policy or a similar course

**Workshop Introduction to STATA**

<b>Course code</b>	E_EC_STATA ()
<b>Credits</b>	0.0
<b>Language of tuition</b>	English
<b>Faculty</b>	Fac. der Economische Wet. en Bedrijfsk.
<b>Coordinator</b>	Z. Tanovic MSc
<b>Examinator</b>	Z. Tanovic MSc
<b>Teaching method(s)</b>	Lecture

**Course content**

In the courses Advanced Methods for Applied Economic Research and Advanced Methods for Applied Spatial Economic Research you will work on homework assignments using the software package STATA. The Workshop Introduction to STATA is aimed at students that are not familiar with this software.

Students will be introduced to the main features of Stata, straddling basics of data management, data description and data analysis. Teaching will (partly) be conducted hands-on in a computerlab.

**Form of tuition**

instruction

hands-on session in computerlab

**Type of assessment**

There is no assessment

**Course reading**

This preparatory course uses the Introduction to STATA guide that can be downloaded from blackboard.

**Remarks**

This course will take place in the last week of August. See blackboard for more information and course materials.