Spatial, Transport and Environmental Economics (MSc)

Vrije Universiteit Amsterdam - Fac. der Economische Wet. en Bedrijfsk. - M Spatial, Trans and Environmental Ec - 2016-2017

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The Master's programme in Spatial, Transport and Environmental Economics is a high-quality one-year programme designed for the economist with an interest in spatial, transport or environmental economics. The Master is firmly grounded in economics, but allows the students to have a relatively strong multidisciplinary orientation. It addresses highly relevant and strongly interrelated policy issues in today's modern societies, such as regional development, urban problems, transport policies and environmental degradation. As such, it is concerned with virtually every aspect of our society in which factors such as space, distance and networks are critical issues.

The master's programme takes one year. The programme's study load is 60 credits.

- Course programme 2016-2017 Master Spatial, Transport and Environmental Economics
- Academic calendar 2016-2017
- Teaching and Examination Regulations 2016-2017 Bachelor programmes FEWEB
- Rules and Regulations 2016-2017 FEWEB

Inhoudsopgave

Vrije Universiteit Amsterdam - Fac. der Economische Wet. en Bedrijfsk. - M Spatial, Trans and Environmental Ec - 2016-2017

III

Master Spatial, Transport and Environmental Economics - Obligatory courses

Below are the obligatory courses.

Vakken:

Naam	Periode	Credits	Code
Advanced Methods for Applied Spatial Economic Research	Periode 1	6.0	E_STR_AMASER
Microeconomics for Spatial Policy	Periode 1	6.0	E_STR_MESP
Research Project Spatial Economics	Periode 3	6.0	E_STR_RPSEC
Thesis	Ac. Jaar (september)	18.0	E_STR_THS

Master Spatial, Transport and Environmental Economics - Optional courses

Choose 4 courses of 6 EC each. Choose at least 2 of 3 core courses, and
in addition 1 or 2 optional courses.

Opleidingsdelen:

- Master Spatial, Transport and Environmental Economics - Optional courses from Master Businesess Administration
- Master Spatial, Transport and Environmental Economics - Optional core courses
- Master Spatial, Transport and Environmental Economics - Optional courses (free choice)

Master Spatial, Transport and Environmental Economics - Optional courses from Master Businesess Administration

Choose a maximum of 1 course from the list of MSc BA-courses.

Vakken:

Naam	Periode	Credits	Code
Airline Business	Periode 4	6.0	E_BA_AIRB
Network Analysis	Periode 2	6.0	E_BA_NA
Real Estate Management	Periode 5	6.0	E_BA_REM

Master Spatial, Transport and Environmental Economics - Optional core courses

Choose at least 2 courses from the list.

Vakken:

Naam	Periode	Credits	Code
Environmental Economics	Periode 2	6.0	E_STR_EEC

| Regional and Urban Economics | Periode 2 | 6.0 | E_STR_RUE |
| Transport Economics | Periode 4 | 6.0 | E_STR_TREC |

Master Spatial, Transport and Environmental Economics - Optional courses (free choice)

Choose 1 or 2 courses from the list below.

Vakken:

Naam	Periode	Credits	Code
Applied Spatial Economics	Periode 4	6.0	E_STR_ASE
Applied Transport Economics	Periode 2	6.0	E_STR_ATE
Economics of Climate Change	Periode 4	6.0	E_STR_ECC
Geographic Information Systems	Periode 2	6.0	E_STR_GIS

Master Spatial, Transport and Environmental Economics - General information

Opleidingsdelen:

- Learning outcomes
- Teaching
- Enrolment for courses and exams

Learning outcomes

After completing the programme the student has:
- An academic level of thinking (logical, reflective, critical,
creative, ethical and independent).
- Theoretical, methodological and empirical knowledge of the relevant
aspects of spatial economics, especially about policy aspects connected
to location decisions, urban and regional development, the functioning
of the land market and spatial planning policy; the functioning of
markets and the associated failures in traffic and transport and the
policy implications; and the economics of environmental problems and
policy.
- Knowledge of and insight into the various relationships between
economics, space, transport, environment and policy.
- Skills to independently set up, prepare, carry out and report on
scientific research; ability to adequately analyse, interpret and
critically examine his/her own research results and those of others and
to clearly present the results of such analyses verbally as well as on
paper.
- Insight into the importance of the field of spatial economics in its
broad historical, philosophical and social context.
- Methodological knowledge required to independently carry out policy-
related or other research in the domain of the programme.
- Professional skills required to apply this knowledge adequately,

efficiently and productively in actual practice. Moreover, he/she has
developed the ability to creatively and systematically handle problems
occurring in professional practice, by using the relevant theoretical
and methodological knowledge and skills to clarify and solve them.
- Insight into the policy aspects and challenges present in the domain
of the programme, and knowledge and skills to adequately reflect on them
and give appropriate advice from an economic perspective.
- Academic attitude, independence, communicative abilities (verbally and
on paper), a collaborative attitude and a critical awareness of the
moral and ethical dimensions of scientific knowledge and its
application.
- Academic skills in accessing new literature, judging its relevance,
absorbing and applying it in his/her daily professional practice.

Teaching

Tuition is carried out in plenary lectures and small groups. Much
attention is paid to an active method of studying. This includes writing
study papers, working out cases and preparing practical assignments. In
this way students become familiar with the application of advanced
theory to practical work. It also serves to integrate the theory studied
in the individual courses into a comprehensive body of knowledge. Papers
are written both individually and in groups of two or three students,
thus furthering the students' ability to work in teams.

Much time is also devoted to presentation and discussion of one's work
to fellow-students and staff and group discussion of e.g. research
papers. The small-scale tuition environment provides an excellent
opportunity for guidance and feedback by staff and other students. Apart
from developing the student's communicative skills in oral and written
presentation, much attention is paid to the development of critical
judgement in assessing research work of others.

Enrolment for courses and exams

For all courses and all examinations you wish to take you are required
to register through VUnet in advance in order to be admitted.

Advanced Methods for Applied Spatial Economic Research

Vakcode	E_STR_AMASER (60412080)
Periode	Periode 1
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Economische Wet. en Bedrijfsk.
Coördinator	dr. H.R.A. Koster
Examinator	dr. H.R.A. Koster
Docent(en)	dr. T. de Graaff, dr. S. Dobbelaere, dr. H.R.A. Koster
Lesmethode(n)	Hoorcollege, Werkgroep
Niveau	400

Inhoud vak

Public policies need to be evaluated in order to understand their effectiveness and correct validation of economic theory can only be achieved with empirical research. The main objective of this course is to provide an overview of econometric research methods in spatial economics and to teach you how to apply these methods to real-world data. After following this course, you will:
• have an advanced understanding of the mathematical and statistical concepts underlying regression analysis;
• understand the importance of and difficulties in estimating causal effects as opposed to correlations in spatial economics problems;
• know how to appropriately interpret regression results of various estimators and know which one to apply in particular situations, depending on (i) the nature of the data (cross-sectional / panel / qualitative data) and (ii) the task at hand (i.e., evaluation of public policies, testing of economic theories or
estimating parameters as derived from theory);
• understand and know how to apply techniques that are commonly in use in urban, regional, environmental and transport economics and policy: spatial econometrics; spatial interaction models, discrete choice models and quasi-experimental set-ups;
• be able to apply these methods independently to typical datasets in spatial economics and other domains (including labour economics and public economics) using the software package STATA.

Onderwijsvorm
Lectures (12) and tutorial (6)

Toetsvorm
Written examination (75 percent): some questions on the theoretical prerequisites but mainly interpretation of regression outputs and sketches of solution strategies for the estimation of particular parameters in well-defined situations.

Assignment (25 percent) in small groups: Assignments are to be handed in before the tutorials and discussed there. Some assignments relate to the derivation of theoretical propositions of the estimators and their properties, but the main focus is hands-on computer exercises applying the theoretical concepts to real-world data using the software package STATA and correct subsequent interpretation of the results.

Literatuur
Papers and syllabi (will be made available on blackboard)

Overige informatie
Students are strongly(!) advised to follow the Math Refresher and Introduction to STATA courses that are given from August 26 to 30, during the last week before the courses start officially

Airline Business

Vakcode	E_BA_AIRB (61452050)
Periode	Periode 4
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Economische Wet. en Bedrijfsk.
Coördinator	dr. A.J.H. Pels

Examinator	dr. A.J.H. Pels
Docent(en)	dr. A.J.H. Pels, dr. M.G. Lijesen
Lesmethode(n)	Hoorcollege, Werkcollege
Niveau	400

Doel vak

The aviation sector is a popular topic in the media. Airport noise, airport expansion, airport privatization, airline alliances, airline bankruptcies, new aircraft design etc. etc. frequently are the topic of heated debate. This course looks at recent developments in the airline industry from a scientific perspective. The deregulation of the aviation markets in 1978 (in the U. S.) and in the 1980s and 1990s (E. U.) led to some drastic changes in airline strategies and management styles. The origins and consequences of these changes are considered in this course.

Inhoud vak

Why did you pay more (or less) for your ticket than the person sitting next to you in the aircraft. Why do KLM and easyJet have different network types? Why was it so important for KLM to enter an alliance agreement? By the end of this course, the student can answer such questions, and explain recent developments in the airline industry using basic economic knowledge on pricing, cost structures, and network design. Furthermore, the insights can be used to explain developments in other transportation sectors as well. Airline pricing, airline cost and network design are three important aspects that will be discussed throughout the course each of these aspects will return in a number of lectures. The lectures specifically deal with the following topics:

- Airline markets
- Airline pricing
- Airline output and market structure
- Airline cost
- Network design
- Network competition
- Airport systems
- Network management
- Revenue management
- Emissions trading

Onderwijsvorm

lecture
paper
A short paper is written based on a current topic in the media. The student will also critically review the paper of another student.

Toetsvorm

Paper, written examination

Literatuur

Holloway, S., 2008, Straight and Level, Practical Airline Economics, Ashgate (later edition allowed);
a selection of articles will be announced in the study guide; lecture slides.

Vereiste voorkennis

The course 'Transport Economics and Management' is highly recommended. Students that did not follow this course have to contact the

coordinators in advance.

Applied Spatial Economics

Vakcode	E_STR_ASE (60422130)
Periode	Periode 4
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Economische Wet. en Bedrijfsk.
Coördinator	prof. dr. J. Rouwendal
Examinator	prof. dr. J. Rouwendal
Docent(en)	prof. dr. J. Rouwendal, dr. H.R.A. Koster
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak

The aim of this course is to introduce the students to applications of
spatial economics in the context of policy implementation and
evaluation. After following
this course, students should be able to judge the
strengths and weaknesses of using various economic evaluation procedures
in concrete policy situations.

Inhoud vak

The course starts with a discussion of the welfare economic foundations
of economic policy evaluation. Subsequently, we provide in-depth
analyses of topics that are relevant in spatial economic policies. The
list is partly determined in a brainstorm session in which students are
asked to suggest relevant topics.
Subjects discussed include the current state-of-the art practice of
hedonic price method for non-market goods, the application of sorting
models to urban policy questions, the study of social interactions in an
urban context, clustering of firms within cities and the spatial
structure of contemporary cities. Special attention is paid to state-of-
the-art econometric methods, such as sorting models and semi-parametric
regressions, which are applied in two assignments. Several guest
lecturers will illustrate the relevance of the economic approach to
spatial problems. Towards the and of the course students have to write a
short essay in which they propose appropriate policy measures to deal
wit a relevant spatial economic issue.

Onderwijsvorm

Lectures, guest lectures and tutorials

Toetsvorm

Written exam (75%) and 3 assignments (3×10%)

Literatuur

Scientific papers and lecture notes

Applied Transport Economics

Vakcode	E_STR_ATE (60422140)
Periode	Periode 2

Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Economische Wet. en Bedrijfsk.
Coördinator	prof. dr. J.N. van Ommeren
Examinator	prof. dr. J.N. van Ommeren
Docent(en)	prof. dr. J.N. van Ommeren, dr. V.A.C. van den Berg
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak

This course aims to familiarize students with applied empirical
transport research and how to interpret recent applied work to evaluate
important transport policies. The course consists of lectures,
interesting home assignments and tutorials where assignments will be
discussed. In the lectures, we explain recent developments in empirical
strategies in transport research that are theoretically founded and
which help you to examine transport policies from a welfare perspective.
The lectures are based on a book and recently published articles. Active
participation of the students is vital and class discussions will be an
important part of all lectures. Home assignments induce you to engage in
econometric analysis of (real) transport data, and to interpret the
policy implications of data analysed. During the tutorials we will
discuss the results.

After the course, you will be able to:
- Perform applied/empirical research in transport economics in a wide
range of settings
- Critically evaluate research done by others
- Evaluate the effect of policies and understand the theoretical
underpinning behind this

Inhoud vak

This course covers key topics in contemporary empirical transport
research and policies. Key topics discussed (and applied in the
assignments) include:

- applied discrete choice demand analysis (e.g. to estimate value of
time)
- applied panel data analyses (e.g. to estimate variation in travel time
as a function of congestion)
- applied instrumental variables approach (to estimate demand functions
for inland shipping in order to determine the welfare effects of low
water in the river Rhine)
- analysis of (car/airport) congestion, global warming and other
externalities
- analyse several empirical studies of parking policy (e.g., cruising;
taxation of employer parking)
- understand company car tax policy (within the OECD) and the effect on
welfare
- competition and market power (of several types of transport companies)
- regulation and deregulation (of transport companies)
- transport investment and pricing
- improve your understanding of location decisions of households and the
relationship with commuting
-competitive tendering in transport: for example, we discuss tendering
policies that determine which companies will build or operate our (road)

infrastructure and show recent evidence how competitive tendering of public transport reduces costs.

Onderwijsvorm
There will be two lectures each week in which the emphasis is on the teachers' explanation of essential material in order improve understanding of empirical research on transport. Active participation of the students is expected in all lectures: class discussions will be part of all lectures.

The weekly tutorial will be devoted to econometric analyses of transport data which will be provided (e.g. commuting, shipping).

Toetsvorm
Assignments 30%,
Written examination 70%

Literatuur
- McCarthy, Patrick, Transportation Economics: Theory and Practice
- A Case Study Approach. Oxford: Blackwell
- About 6 empirical articles

Economics of Climate Change

Vakcode	E_STR_ECC ()
Periode	Periode 4
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Economische Wet. en Bedrijfsk.
Coördinator	dr. S. Poelhekke
Examinator	dr. S. Poelhekke
Docent(en)	prof. dr. R.S.J. Tol, dr. S. Poelhekke
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak
This course focuses on climate change: one of the greatest challenges of our time. What can the science of economics teach us about its causes and potential solutions? What are the costs and benefits of climate change? Should we tax carbon, cap-and-trade emission rights, or subsidize solar and wind power? Why is it so difficult to sign environmental agreements such as 'Kyoto' and 'Paris' despite the high stakes? Does trade harm the environment? Will our industry move abroad if we take a leading role and 'go it alone'?

After having completed this course, you will know the answers to the above questions and be able to enter into the economic policy debate well informed.

Moreover, you will:
- 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.

Inhoud vak
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
- Economic impacts of climate change
- Climate change policy making: instruments and costs
- The economics of acidification and ozone depletion
- Trade the environment: pollution havens versus factor endowments
- International environmental agreements

The first 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?

The last 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_2) 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_2 or SO_2 is easy (see for example the Kyoto Protocol), but what are the incentives for countries to actually join
the coalition? And what is the role of trade sanctions therein?

Toetsvorm
essay
presentations
take home exam

Literatuur
Books:
- Perman et al., Natural Resource and Environmetal 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.

Vereiste voorkennis
Microeconomics.

Environmental Economics

Vakcode	E_STR_EEC (60442040)
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Economische Wet. en Bedrijfsk.
Coördinator	prof. dr. C.A.A.M. Withagen
Examinator	prof. dr. C.A.A.M. Withagen
Docent(en)	dr. G.C. van der Meijden, prof. dr. C.A.A.M. Withagen
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak
The course aims to learn students that natural resource management should not be left to the free market. After following this course, students are able to characterize several types of market failure and to explain how each of these causes environmental problems, such as air pollution and overexploitation of natural resources. Moreover, students will be capable of explaining which policy instruments can be used by the government to tackle environmental problems that arise in a market economy. Finally, students will be taught how renewable resources (such as forestries and fisheries), and non-renewable resources (such as fossil fuels) should optimally be exploited from a social welfare perspective and how their socially optimal exploitation differs from the exploitation in a market equilibrium.

The course consists of lectures, homework assignments, tutorials, and presentation/discussion sessions. The lectures are aimed at developing a thorough understanding of key economic, environmental and ethical aspects of environmental problems, and of the link between theory, methods and empirical analysis. The goal of the homework assignments that will be discussed during the tutorials, is to practice modern economic methods to analyse and solve problems in the field of environmental economics. The presentation/discussion sessions are intended to improve the participants' economic reasoning and communication skills. In these sessions, students will present a journal article in class, and they are expected to participate in a group discussion afterwards.

After following this course, you:
• are able to describe the most important interactions between the economy and the environment, and their relationship with sustainable development.
• can explain why, and under which conditions, the free market does not result in an efficient outcome.
• are capable of showing how externalities can be 'internalized' by using market instruments, like Pigouvian taxes, quotas and tradable permits, etc.
• are able to advise environmental policy makers on which policy instruments to use under different circumstances in order to correct the market outcome
• can explain how non-renewable resources like fossil fuels, are exploited in a market economy and how the exploitation differs from the optimum
• can show how renewable resources, like fisheries and forestries, are exploited in a market economy and how the exploitation differs from the social optimum
• are able to describe and explain the optimal climate policy in the global economy
• can explain how sub-optimal climate policies can lead to a 'Green Paradox', in the sense that the problem of climate change is aggravated instead of diminished upon the introduction of those policies
• are able to explain why resource rich countries often suffer from low rates of economic growth, and what they can do to avoid this so-called Resource Curse.
• can explain the theoretic measures of 'willingness to pay' (WTP) and 'willingness to accept' (WTA) to obtain a monetary valuation of environmental changes
• are able to use stated preference methods (e.g., contingent valuation) and 'revealed preference' methods (e.g., travel cost model) to determine the WTA and WTP for environmental changes
• are able to work with simple mathematical models to analyse the effects of environmental policy and to determine the time profile of renewable and non-renewable resources, both in the optimum and in the market equilibrium
• have improved your presentation and discussion skills

Inhoud vak
The following topics will be dealt with in the course:
- interaction between the economy and the environment
- sustainable development
- welfare economics and market failures
- environmental policy: Pigouvian taxes, quotas, and tradable emission permits
- non-renewable resource use: scarcity and market structure

- renewable resource use: fishery and forestry
- non-renewable resource use and climate change
- climate policy and the 'Green Paradox'
- resource-rich economies and the 'Resource Curse'
- theory and methods for environmental valuation
The topics for the group discussions and student presentations can be chosen by the participants. They should be based on articles published in scientific journals.

Onderwijsvorm
Lectures, assignments, student presentations, and group discussions.

Toetsvorm
Written exam (60%), assignments (30%), and presentation/participation (10%). Passing the course is conditional on the exam grade being 5.0 or higher.

Literatuur
- Perman, R., Yue, M., Common, M., Maddison, D., and McGilvray, J., Natural Resource and Environmental Economics, 4th Edition, Addison Wesley, 2011.
- Additional articles from the economics literature, to be announced on Blackboard

Aanbevolen voorkennis
Advanced microeconomics.

Geographic Information Systems

Vakcode	E_STR_GIS (60452030)
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Economische Wet. en Bedrijfsk.
Coördinator	dr. J.E.C. Dekkers
Examinator	dr. J.E.C. Dekkers
Docent(en)	dr. J.E.C. Dekkers, prof. dr. H.J. Scholten
Lesmethode(n)	Hoorcollege, Computerpracticum
Niveau	400

Doel vak
For economists, the spatial-economic market model of Von Thünen (1780-1850) was a major breakthrough in their spatial thinking. During this course, we will see how this spatial thinking has evolved from Von Thünen's time to the world of today.

The aim of this course in Geographical Information Science is to make students understand the importance of space and distance as key factors in applied research, in particular in the fields of regional, urban, transport and environmental economics. The students will be introduced into the theoretical and methodological issues of GIScience and GISystems and they will be trained in how GIS can assist and extend research. At the end of the course students:

- can carry out a spatial-economic analysis in which they apply relevant

theories and concepts as discussed during the lectures
- know how to use GIS software and tools in their analysis
- will be able to explain what GIS is and how it can be used in business
processes, in government policy planning and in scientific analysis

Inhoud vak
This course introduces students to the role of location in (spatial)
economics. It focuses on the informational value of location and on how
to use the factor location when doing analysis.
The following list of core issues will be discussed during the lectures
and practiced with during the tutorial/practical hours and the GIS
assignment:
- Introduction to GIS
- Spatial data
- Setting up GIS research
- Types of spatial analysis
- Visualisation of results using GIS

Onderwijsvorm
There will be lectures each week in which the focal point is on the
teachers' explanation of the essential material. Active participation of
the students is expected in all lectures. The tutorials will
be devoted to empirical exercises, applying spatial concepts using GIS-
software and spatial data, discussion of problem sets and assignments.

Toetsvorm
Written interim examination: 70 percent
Assignments: 30 percent
(Each to be completed with a minimum score of 5.0)

Literatuur
Academic papers (a list of papers will be distributed via Blackboard
before the course)

Aanbevolen voorkennis
This course provides links with the core courses Regional and
Urban Economics (period 2), Transport Economics and Environmental
Economics (period 4), and with the course Advanced Methods (period 1),
for instance by discussing empirical research from these fields during
the lectures and using spatial data from these fields during the
tutorials.

Microeconomics for Spatial Policy

Vakcode	E_STR_MESP (60412090)
Periode	Periode 1
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Economische Wet. en Bedrijfsk.
Coördinator	dr. A.J.H. Pels
Examinator	dr. A.J.H. Pels
Docent(en)	dr. A.J.H. Pels, prof. dr. E.T. Verhoef
Lesmethode(n)	Hoorcollege, Werkgroep
Niveau	400

Doel vak

The aim of this course is to equip the student with the microeconomic toolbox that is required to be able to structure and analyze economic and policy questions in the fields of urban, regional, transport and environmental economics from the economic viewpoint. These tools are indispensible to successfully follow the remainder of the program.

By the end of the course the student will:
- be familiar with the main microeconomics principles, and know how to analyze microeconomic problems using mathematical tools
- be familiar with the theory of spatial competition
- be familiar with the theory of cost functions for network sectors
- know the main concepts of consumer choice and firm behavior, and their relevance for economic and welfare analysis
- be able to evaluate economic policy with regard to efficiency, and know of the limitations to economic policy
- know possibilities and limitations in applied policy fields, such as welfare analysis, regulation of industry, cost benefit analysis, and policy coordination and competition

Inhoud vak

The first three weeks the lectures coincide with the lectures of Microeconomics for policy, code E_EC_MEP. We refer to the description of that course for more information.
The last three weeks differ between the two courses. This course (microeconomics for spatial policy) will deal with topics that are of special
interest in urban, regional, environmental and transport economics and policy.

The following topics are addressed:
- Applied welfare analysis: Cost
- Benefit Analysis
- Cost functions: economies of scale, scope, density and networks
- Market structures in network sectors
- Product and price differentiation (including spatial competition)
- Market failures and public policy
- Government failures: Policy coordination and competition

Onderwijsvorm

There will be two lectures each week in which the emphasis is on the teacher's explanation of the essential material. Active participation of the students is, however, expected in all lectures: class discussions and making small exercises to better comprehend the material will be part of all lectures. The tutorials will be devoted to discussion of problem sets and exercises, where active participation of students is again required.

Toetsvorm

take- home interim examination and written interim examination

Vereiste voorkennis

Participants are expected to have a basic understanding of microeconomic theory (bachelor level, e. g. Varian's Intermediate Microeconomics).

Overige informatie

Students wishing to refresh their math skills are encouraged to attend the course "Math Refresher".

For more information about Math Refresher, see Blackboard.

Network Analysis

Vakcode	E_BA_NA (61422100)
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Economische Wet. en Bedrijfsk.
Coördinator	dr. T. de Graaff
Examinator	dr. T. de Graaff
Docent(en)	dr. T. de Graaff
Lesmethode(n)	Hoorcollege, Werkcollege
Niveau	400

Doel vak
Firms and consumers typically operate in various types of networks.
These can be both physical networks (such as transport and communication networks) and non-physical networks (such as information networks). The main objective of this course is to give you a basic understanding of economic network theory, which enables you to identify the relevance and consequences of networks for firms as well as for consumers.

After following this course, you:
- have a basic understanding of the fundamental economic principles underlying applied network theory;
- understand the role and behavior of various agents (government, consumers and firms) within network sectors;
- are able to understand the economic impacts that various forms of networks (i.e., transport networks, consumer networks, information networks, clustering of firms) have on the nature, size and behavior of firms;
- are able to determine optimal firm and consumer behavior conditional on the nature of the network;
- and have used applied network theory with (stylized) cases studies, in order to determine optimal firm or consumer behavior in combination with the nature of the network.

Inhoud vak
The economic principles behind networks and their consequences for both firms and consumers form the backbone of this course. The lectures specifically deal with the following topics:
- basic applied network theory;
- government interventions in network sectors;
- clustering and spill-over effects between firms; - network sectors (e.g. telecom, transportation, energy);
- information and communication goods;
- switching costs and lock-in effects;
- network externalities.

Onderwijsvorm

Lectures and working groups concentrate on the application of network theory on stylized case studies

Toetsvorm
- written interim examination
- assignments

Literatuur
- Syllabus
- Selected papers

Vereiste voorkennis
Transport Economics and Management (or knowledge of microeconomics at a bachelor level)

Real Estate Management

Vakcode	E_BA_REM (61452040)
Periode	Periode 5
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Economische Wet. en Bedrijfsk.
Coördinator	prof. dr. J. Rouwendal
Examinator	prof. dr. J. Rouwendal
Docent(en)	prof. dr. J. Rouwendal, dr. F. Hamelink
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak
The course provides an introduction to the understanding and the analysis of real estate markets and the investment alternatives available to both debt and equity investors. A large part of the focus will be on residential real estate. Students study both the owner occupied and rental markets and pay particular attention to financial aspects, in particular the mortgage market. The secondary market for mortgages, where institutional investors invest in pools of mortgages, is analysed in detail, in particular in light of the recent financial crisis. The last part of the course deals with other forms of real estate that institutional investors may invests in. This part will cover other property types (offices, commercial real estate, etc.) and investment vehicles, such as REITS. Although the course takes an international perspective, special attention is given to the Dutch situation.

Inhoud vak
Students study the characteristics of mortgage loans used by households to finance the purchase of a house, the functioning of the Dutch housing market including the role of policy interventions (notably mortgage interest deductibility and spatial planning), and the role of housing corporations. The secondary market for debt related to this financing is analysed with a focus on the various instruments (such as CDO's and CMO's) that have played on important role in the current financial crisis. Finally, students also look at the other side of the financing of real estate, namely, students take the perspective from an (institutional) investor, such as a pension fund, who considers real

estate as one of many available asset classes. Students will study the main characteristics in terms of risk and returns of the different forms of real estate available to the investor (such as investing in mortgage pools, investing in buildings, securitised real estate, etc.), as well as by property type (such as residential versus commercial real estate). After following this course, students should be able to understand:
• the main characteristics of the most popular types of mortgage loans;
• the pros and cons of fixed rate and adjustable rate mortgages;
• the impact of fiscal measures on mortgage payments;
• the role of the housing corporations on the Dutch rental housing market;
• the importance of the secondary market in mortgages, as well as the available instruments for institutional investors such as pension funds;
• the risk and returns characteristics of the main investments vehicles in real estate available to an institution investor.
Real Estate Management is a joint effort of the departments of Spatial Economics and Finance and Financial Sector Management.

Onderwijsvorm
Lectures, including a guest lecture by a real estate specialist.

Toetsvorm
Written examination. Duration 2 h and 45 min. Open questions. No interim results.

Literatuur
• Baum, A.E. & Hartzell, D. (2011). Global Property Investment: Strategies, Structures, Decisions. Wiley-Blackwell, ISBN: 978-1-4443-3528-6, Paperback, 576 pages;
• additional course material will be provided on Blackboard.

Overige informatie
This course is organised by the VU. For more information, please go to http://www.feweb.vu.nl/en/students/study-guide/msc-entrepreneurship/programme/index.asp

Regional and Urban Economics

Vakcode	E_STR_RUE (60442140)
Periode	Periode 2
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Economische Wet. en Bedrijfsk.
Coördinator	prof. dr. H.L.F. de Groot
Examinator	prof. dr. H.L.F. de Groot
Docent(en)	prof. dr. H.L.F. de Groot, prof. dr. J. Rouwendal
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak
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.

Inhoud vak
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.

Onderwijsvorm
Lectures and Tutorials

Toetsvorm
Written exam (70 percent; individual assessment) and Assignments (30 percent; group assessment). A minimum grade of 5.0 for the exam is required.

Literatuur
• 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 Spatial Economics

Vakcode	E_STR_RPSEC (60432070)
Periode	Periode 3
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Economische Wet. en Bedrijfsk.

Coördinator	dr. M.G. Lijesen
Examinator	dr. M.G. Lijesen
Docent(en)	prof. dr. H.L.F. de Groot
Lesmethode(n)	Werkgroep
Niveau	400

Doel vak

The ultimate goal of this course is to strengthen essential practical skills that characterize a good economist. One of the learning objectives of the Research Project is to provide you with hands- on experience on how to conduct a literature search and how to properly report on it. These are skills for which there are no standard recipes and can only be 'learned by doing'. At a lower, more pragmatic level, another goal is to allow you to make a head start with your Master's Thesis.

After following this course, you:

- are able to master a certain field of literature
- can identify the relative contributions of different articles to this field
- can identify remaining blind spots in the field that provide fertile soil for further research
- have the ability to present this knowledge in a structured way, both as a written report and in the form of an oral presentation

Inhoud vak

A critical attitude towards scientific papers is essential for a professional economist. During this research project, you are asked to identify a topic and review a coherent set of around 10 key scientific papers (approximately 250 pages) around this topic. You formulate a research question that allows you to reflect on the papers and put them into perspective. You write a critical and coherent evaluation (of around 10 pages in normal print) in which you present the essence of the papers studied, discuss the relatively strong and weak aspects of the different papers, where relevant compare and confront the different insights from the different papers with respect to the research question, and identify issues for possible further analysis. The evaluation should be written in a paper format, viz. it should contain an introduction with a clear problem statement, a proper structure, a clear and well- founded conclusion, list of references, etc.

Onderwijsvorm

Group meetings with presentations. Students will be assigned the role of discussant of one fellow student during the process of the research project. These group meetings are complementary to the daily supervision of each student.

Toetsvorm

report
written report + oral presentation

Literatuur

No required literature. Suggested literature:

- Hart, Chris, Doing a literature review: releasing the social science research imagination. Sage: LA, London 2008, ISBN 978 0 7619 5975 5.

- Brett Davies, Martin: Doing a succesful research project: using
qualitative or quantitative methods. Palgrave MacMillan: New York,
2007, ISBN 1 4039 9379 3.
- Hall, G.M. (ed.)How to Write a Paper. BMJ Books, London, 2003, ISBN
0 7279 1728 5.

Thesis

Vakcode	E_STR_THS ()
Periode	Ac. Jaar (september)
Credits	18.0
Voertaal	Engels
Faculteit	Fac. der Economische Wet. en Bedrijfsk.
Coördinator	dr. M.G. Lijesen
Examinator	dr. M.G. Lijesen
Lesmethode(n)	Werkgroep
Niveau	500

Inhoud vak
The MSc thesis finalizes your MSc program and provides you with an
opportunity to apply what you have learned. In the period after your
graduation, your thesis is also acts as a showcase of your abilities.

As you are graduating as a master of science, your thesis should show
your ability to set up and conduct research, as well as report about it.
Your thesis can either take the form of a report or a scientific paper.
The latter is more challenging, and would provide a good start for a
submission to a scientific journal. The choice between these forms is
yours, but it would be wise to discuss it with your supervisor

Transport Economics

Vakcode	E_STR_TREC (60432050)
Periode	Periode 4
Credits	6.0
Voertaal	Engels
Faculteit	Fac. der Economische Wet. en Bedrijfsk.
Coördinator	dr. A.J.H. Pels
Examinator	dr. A.J.H. Pels
Docent(en)	dr. A.J.H. Pels
Lesmethode(n)	Hoorcollege
Niveau	400

Doel vak
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.

Inhoud vak
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.

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

Literatuur
- 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.

Aanbevolen voorkennis
Microeconomics for spatial policy or a similar course