Exchange programme Vrije Universiteit Amsterdam

Vrije Universiteit Amsterdam - Exchange programme Vrije Universiteit Amsterdam - 2024-2025

Exchange

Vrije Universiteit Amsterdam offers many English-taught courses in a variety of subjects, ranging from arts & culture and social sciences, neurosciences and computer science, to economics and business administration.

The International Office is responsible for course approval and course registration for exchange students. For details about course registration, requirements, credits, semesters and so on, please visit the exchange programmes webpages.

Mathematical Economics III

Course Code	E_EOR3_ME3
Credits	6
Period	P4
Course Level	300
Language Of Tuition	English
Faculty	School of Business and Economics
Course Coordinator	prof. dr. J.R. van den Brink
Examiner	prof. dr. J.R. van den Brink
Teaching Staff	M.J. Witte, prof. dr. J.R. van den Brink
Teaching method(s)	Seminar, Lecture

Course Objective

Mathematical Economics 3: Network Games and Empirics

In this course, we discuss recent developments and applications of the decision tools that are discussed in Mathematical Economics 1 and 2 on network models. Besides learning new network tools, we focus on applications of network models in Economics and Business. This course is an excellent preparation for a quantitative masters education in a field related to Economics and Business.

Course Content

This course consists of two parts. Below we briefly describe the topics that we discuss in those parts.

Coalitional games and networks (Rene van den Brink): In a globalized world, (international) cooperation networks become increasingly important. Coalitional games are an extension of networks, and have many applications in economics, business and operations research. After a brief introduction to coalitional games and networks, we discuss applications such as assignment problems (economics), sequencing problems (operations research) and marketing attribution (business). In the applications, we will critically assess how to use the concepts we learned.

Empirical networks (Marc Witte): In this section of the course, we will learn how social and economic networks can be integrated into empirical economics research. First, we will (re-)establish some empirical background on networks and cover ways to measure and describe them. Then, we will study econometric methods on how to estimate effects on and changes in networks, as for example induced by economic behavior or policy interventions. In the last part of this section, we will examine various empirical applications of network theory in different markets and situations, using recent research papers as examples. Among other things, we will look at i) ways to measure diffusion through networks, ii) network formation in labor markets (for example among job-seekers or during the hiring process), and iii) how policy interventions can interact with and alter the structure of social networks (such as in credit or labor markets).

Additional Information Teaching Methods

Two lectures and one tutorial every week

Method of Assessment

Written exam, Home assignment

Literature

Will be announced in the Course Manual and on Canvas.

Additional Information Target Audience

Third year bachelor students Econometrics and OR, Econometrics and Data Science

International Exchange students with a quantitative interest (for information contact J.R. van den Brink, email: j.r.vanden.brink@vu.nl)

Recommended background knowledge

Mathematical Economics I and II (specifically Game Theory and Networks), and a sufficient background in Statistics and Econometrics