



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 I

Course Code	E_EOR2_ME1
Credits	6
Period	P1+2
Course Level	200
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	dr. H.E.D. Houba, prof. dr. J.R. van den Brink
Teaching method(s)	Study Group, Lecture, Written partial exam

Course Objective

In this course, you will

- Dive into the world of economic decision-making with a selection of classic and behavioral economic models, focusing on individual, collective, and strategic decision making.
- Master the mathematical properties of each model, and learn to calculate elementary models.
- Understand the difference between descriptive and normative theories, and how they apply to real-world economics.

In summary, you will gain a comprehensive understanding of key economic models, their practical implementation, and their potential application in real-world scenarios.

Course Content

Making Better Decisions in Economics and Business

- Learn how to evaluate decisions using economic concepts such as preference relations and utility functions. Apply these concepts from both a normative perspective (making better decisions) and a descriptive perspective (modeling observed behavior).
- Understand group decision-making through concepts like welfare and Pareto efficiency. Learn about the mathematical derivation of group preferences from individual preferences and the welfare properties of competitive markets, ranking methods, and real-world voting procedures.
- Explore classical economic theories of individual and market behavior, discrete choice (used in A/B testing in Econometrics and Data Analytics), and decision-making under risk.
- Delve into strategic decision-making with game theory. Get introduced to classic equilibrium concepts and contemporary behavioral economics concepts designed to analyze experimental data.

This course offers a comprehensive understanding of decision-making in economics and business, providing you with the tools to make better decisions and understand the decisions of others. Join us and enhance your decision-making skills!

Additional Information Teaching Methods

Classes. One two hour lecture, and one hour practical per week. Active participation and being well prepared before the practical is key to success. Participants may be partitioned to groups for the practical.

Method of Assessment

Partial exams in October (covering period 1) and December (covering period 2) – individual assessment
A (re)exam in March (covering period 1 and 2) – individual assessment
Individual Assignment (to be announced) – individual assessment

Literature

A syllabus that contains exercises and that is supplemented by some videos from Massive Open Online Courses (MOOCs). All compulsory literature and links will be provided through Canvas.

Additional Information Target Audience

This course is an obligatory second-year course in the bachelor Econometrics and Operations Research. Students EDS and Mathematics are welcome. Also exchange students and other students from other bachelors, such as Economics, are welcome but should be motivated to follow a course with an emphasize on mathematics. Preferably, you have a sufficient mathematical background and can reason logically. For more information, or in doubt, contact the course coordinator.

Additional Information

Please note that this course is part of an entry requirement for Integrative Practical (part of BSc Econometrics and Operations Research).

Recommended background knowledge

Knowledge of elementary mathematics and elementary probability theory. This includes differentiation, the Lagrange method, expectation, Bayes Rule.

For EOR students this translates in knowledge from Analysis I and II, Linear Algebra and Probability Theory, and to a much lesser extent Finance, Statistics and Programming.