



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 Modelling of Stochastic Systems

Course Code	XB_0027
Credits	6
Period	P3
Course Level	200
Language Of Tuition	English
Faculty	Faculty of Science
Course Coordinator	prof. dr. R.W.J. Meester
Examiner	prof. dr. R.W.J. Meester
Teaching Staff	prof. dr. R.W.J. Meester
Teaching method(s)	Practical

Course Objective

1. The student can understand and interpret a stochastic mathematical model for a concrete problem.
2. She can perform (literature) research in order to find appropriate parameters that make the model realistic.
3. She can recognize the mathematical challenges of the model, has learned how to analyse the model, and how to translate her mathematical findings back to the concrete context.
4. She has learned how to work on a project together with other students.
5. She can use the LaTeX package, and knows how to present the project, in English writing, detailed enough to be understandable for her fellow students.
6. She has gained new insights in the application of mathematical tools, in particular probability theory and mathematical statistics, to real-world problems.

Course Content

This course is part of the modelling line of the bachelor's programme in mathematics, and builds on the course Introduction to Mathematical Modelling. The course focuses on the application of mathematics (to be precise: probability theory and mathematical statistics) to concrete practical problems. It involves a guided project in which the student is to understand a mathematical model for a concrete situation, and to analyse different aspects of it. The mathematical solutions are interpreted in a concrete context. English writing skills are trained as well.

Additional Information Teaching Methods

The students work in groups of 2-3 students. The teacher and TA's are available to help the students if they get stuck. There are 6 different projects the students can choose from.

Method of Assessment

A written report in English, including full mathematical details, as well as an adequate context of the problem.

Additional Information Target Audience

Bachelor Mathematics Year 2.

Recommended background knowledge

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Necessary background: Probability Theory X_400622