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.

Advanced Simulation for Finance, Economics and Business

Course Code	E_EOR3_ASFEB
Credits	6
Period	P4
Course Level	300
Language Of Tuition	English
Faculty	School of Business and Economics
Course Coordinator	dr. G. Xiao
Examiner	dr. G. Xiao
Teaching Staff	dr. G. Xiao
Teaching method(s)	Lecture, Study Group

Course Objective

Students learn how to analyse real-life problems by computer simulation models. After successful completion of this course, students will be able to conduct Monte Carlo simulation based analysis of a problem and provide an output analysis. Students learn how to apply simulation in optimization and learning, and to report on their findings.

Course Content

This course gives a treatment of the important aspects of advanced Monte Carlo simulation and its applications in areas such as inventory control, project planning, reliability, risk analysis, multi-agent models, and financial models. The emphasis is on modeling the stochastic dynamic system as a discrete event system, and analyzing and improving its performance by means of discrete event simulation. The topics covered include generating random numbers, output analysis, design of experiments, stochastic optimization, Markov chain modelling, opinion dynamics, stochastic diffusion models, and option pricing.

Additional Information Teaching Methods

Combined lectures and tutorials

Method of Assessment

Simulation projects (report and presentation), written exam.

Entry Requirements

For all students: Statistics, Introduction to Programming. Furthermore, EOR students should have passed "Probability Theory" ; EDS students should have passed "Introduction to Data Science"

Literature

TBA

Recommended background knowledge

Analysis I and Operations Research II