



Bachelor's courses School of Business and Economics

VU University Amsterdam - Student- & Onderwijszaken - Exchange programme Vrije Universiteit - 2019-2020

Operations Research II

Course code	E_EOR2_OR2 ()
Period	Period 4+5
Credits	6.0
Language of tuition	English
Faculty	School of Business and Economics
Coordinator	dr. A.A.N. Ridder
Examinator	dr. A.A.N. Ridder
Teaching staff	dr. A.A.N. Ridder, dr. D.A. van der Laan
Teaching method(s)	Lecture, Study Group
Level	200

Course objective

To be introduced to the theory of stochastic processes and models that are important in EOR practice. To learn modeling techniques for translating an EOR problem into an appropriate stochastic model. To learn how to apply optimization and simulation techniques for performance analysis of stochastic systems.

Course content

This is an introductory course in stochastic models. It builds upon the basic course in probability theory and extends the theory of static probability to dynamic stochastic processes. The course focuses on Poisson process, discrete-time and continuous-time Markov chains, with applications to queueing models, risk analysis, reliability problems, and option pricing. It also discusses dynamic optimization and stochastic simulation of these systems.

Form of tuition

Combined lectures and tutorials.

Type of assessment

1. Individual assignment. 2. Midterm exam. 3. Final exam.

Course reading

Hamdy A. Taha: Operations Research, An Introduction. Tenth Edition. Pearson 2017.

Recommended background knowledge

Introductory courses on Probability Theory and Statistics. Courses in Mathematical Analysis, Discrete Mathematics, Linear Algebra.

Target group

Junior/Senior undergraduates in Applied Mathematics (e.g. Econometrics and Operations Research)

Remarks

The course is suitable to be taken in an exchange program.