Course content for International Master program „Mathematical modeling, computation and optimization"

Course name	Stochastic processes
Contents and Objectives	Content: • Definition of stochastic processes • Mathematical model for random evolutions in time, • properties, • convergence • Extensions to random fields. Objectives of the course: The course aims at explaining essential and characteristic properties of stochastic processes. We address Markovian, as well as non-Markovian processes. The participants will be able to classify stochastic processes in continuous and discrete time. They will understand time correlations, various types of parametric and non-parametric stochastic processes as well.
Teaching	This course consists of lectures and exercise classes. • Lecture: Stochastic processes (4h/week) • Exercise class: Stochastic processes (2h/week)
Prerequisites	Stochastics
Examination	Oral exam (30 minutes)
Credits	8 ECTS points
Frequency	This course is given at least once in 2 years.
Workload	The estimated total working time for this course is 240 hours.
Duration	This course is given during one semester.