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

Course name	Stochastic Analysis
Contents and Objectives	Content: • Properties of the Wiener process (Brownian motion), • Stochastic integrals, • Ito-integral, • applications of stochastic integrals Objectives of the course: The course introduces integration with respect to stochastic processes and discusses its properties and characteristics. Further, typical applications from physics and finance are discussed.
Teaching	This course consists of lectures. • Lecture: (Stochastic Analysis) 2h/week
Prerequisites	Stochastics, stochastic processes
Examination	Oral exam (30 minutes)
Credits	4 ECTS points
Frequency	This course is given at least once in 2 years.
Workload	The estimated total working time for this course is 120 hours.
Duration	This course is given during one semester.