

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

Course name	Optimization under Uncertainty
Contents and Objectives	<p><u>Content:</u></p> <ul style="list-style-type: none"> • classification of stochastic programs • risk measures • stochastic approximation • sample average approximations • chance constraints <p><u>Objectives of the course:</u> The overall objective of this lecture is to understand optimization under uncertainty. These problems appear naturally in economic environments and models. We classify the problems and solve them with reasonable accuracy. The tools required derive from stochastics, from optimization and from functional analysis.</p>
Teaching	<p>This course consists of lectures and exercise classes.</p> <ul style="list-style-type: none"> • Lecture Optimization under Uncertainty (2h/week) • Exercise class Optimization under Uncertainty (2h/week)
Prerequisites	Probability theory, statistics and optimization
Examination	Oral exam (30 minutes)
Credits	6 ECTS points
Frequency	This course is given at least once in 3 years.
Workload	The estimated total working time for this course is 180 hours.
Duration	This course is given during one semester.