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

Course name	Fourier-Analysis
Contents and Objectives	Content: • Fourier series (properties, convergence, discrete Fourier transformation, fast Fourier transformation) • Fourier transformation (definition, properties, Poisson's formula) • windowed Fourier transform • Applications in digital signal processing and the solution of partial differential equations Objectives oft he course: The lecture deals in particular with a basic introduction to Fourier Analysis.
Teaching	This course consists of lectures and exercise classes. • Lecture: Fourier Analysis (4h/week) • Exercise class: Fourier Analysis (2h/week)
Prerequisites	Basic notions of Analysis, Linear Algebra and Higher Algebra
Examination	Oral exam (30 minutes)
Credits	8 ECTS points
Frequency	This course is given at least every second year.
Workload	The estimated total working time for this course is 240 hours.
Duration	This course is given during one semester.