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

Course name	Game theory
Contents and Objectives	Contents: • Core, nucleolus, Shapley value, Weber set • Zero-sum games • Nash equilibrium • Bargaining • Social Choice • Matching Problems • Voting • Oligopoly Objectives of the course: This lecture introduces basic concepts from cooperative and noncooperative game theory. The strategic interaction of players is modelled and analysed by mathematical tools. The focus lies on the application of game-theoretic results in the economic context
Teaching	This course consists of lectures and exercise classes. • Lecture: Game theory (2h/week) • Exercise class: Game theory (2h/week)
Prerequisites	Basic notions of Analysis and Linear Algebra
Examination	Oral exam (30 minutes)
Credits	6 ECTS points
Frequency	This course is given at least every third year.
Workload	The estimated total working time for this course is 180 hours.
Duration	This course is given during one semester.