

M.Sc. Economics

Code:		Type:	M.Sc. 2 nd semester lecture series
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Title:	Game Theory
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Lecturer:	Klaus Ritzberger
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ECTS:	7	Contact hours (per semester):	24 à 90 min.
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Semester:	Summer 2010	Frequency of the lecture:	Twice a week 90 min.
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Dates:	March 10 th , 2010 until June 17 th , 2010
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Prerequisites:	Knowledge of microeconomics incl. of general equilibrium
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Learning objectives (What are the intended learning outcomes? Which skills will be acquired?):

The goal is to introduce the basic concepts from game theory, both intuitively and at a formal level. Furthermore, important applications of game theory to economic problems will be discussed.

Content (Which professional competence and which contents will be imparted?):

- **Introduction:** What is a game? Simple examples, basic assumptions.
- **Games in Extensive Form:** Perfect and imperfect Information, the tree, strategies (pure, mixed, and behavioral strategies), perfect recall (Kuhn's theorem), Bayesian games (incomplete information).
- **Games in Normal Form:** Normal form games, Thompson transformation, the space of games.
- **Solving Games:** Dominance (weak and strict dominance), rationalizable strategies, Nash equilibrium, zero-sum games, correlated equilibrium.
- **Applications:** Oligopoly (Cournot, Bertrand, differentiated commodities), repeated games, mechanism design, principal-agent problems, signaling, adverse selection and moral hazard, auctions.

Teaching approach (Description of the learning and teaching methods):

Lecture and homework assignments to be discussed in class.

Workload (Optional: definition of workload (ECTS), divided in pre-modules (e.g. pre-readings), core-modules (contact hours), post-modules (e.g. case studies)):

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Language of instruction (Information on the language of teaching):

English

Obligatory literature (E.g. scripts, books, articles, cases, papers):

- Ritzberger, K. (2002), Foundations of Non-Cooperative Game Theory, Oxford University Press.
- Osborne, M. J., and A. Rubinstein (1994), A Course in Game Theory, chp. 10, MIT Press.
- Friedman, J. W. (1986), Game Theory with Applications to Economics, chp. 3, Oxford University Press.
- Kreps, D. M. (1990), A Course in Microeconomic Theory, chp. 10, 16, 17, Harvester-Wheatsheaf.

Additional literature (E.g. books, articles, cases, papers):

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Mode of examination (Mode of the examinations and tests (e.g. oral or written examination, lecture, homework, papers, class participation)):

In each lecture problem sets are distributed. Problems will be discussed in class and the student's performance in handling the problems will be graded. In addition, there will be two written classroom exams, a midterm and a final. Each written exam covers the material that has been discussed up to the exam date. Written exams consist of 3-4 problems that students have to solve in writing.

Grading:

- Problem sets: 20%
- Midterm exam: 35%
- Final exam: 45%

Special features (E.g. excursion, guest speaker):

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