

# Game Theory

## Syllabus

**Purpose of course.** This course covers the standard content of a first-year graduate-level course in noncooperative game theory.

**Prerequisites.** You are expected to be familiar with standard material in analysis and probability at the level of the mathematical appendix in Jehle and Reny (2001) or somewhere below the level of the mathematical appendix in Mas-Colell et al. (1995). No previous formal knowledge of game theory is required, although familiarity with simple examples such as the Prisoners' Dilemma or the Battle of Sexes is assumed.

**Contents.**

Normal Form Games.

- Nash Equilibrium.
- Iterated Dominance.
- Incomplete Information.
- Trembling-Hand Perfection.

Extensive Form Games.

- Backward Induction.
- Subgame Perfection.
- Sequential Equilibrium and Extensive Form Perfection.
- Beliefs-based Refinements.
- Signaling Games.
- Repeated Games.

**Examination policy** The grading is based on a final written exam.

**Reading List.** The core of the course will be based on chapters 7—9 from Mas-Colell et al. (1995). A somehow simpler exposition of most of the concepts can be found in Jehle and Reny (2001).

G.A. Jehle and P.J. Reny (2001), *Advanced Microeconomic Theory*, second edition, Addison-Wesley.

A. Mas-Colell, M.D. Whinston and J.R. Green (1995), *Microeconomic Theory*, Oxford University Press.