

Syllabus for “Advanced Microeconomics” EKN 812

by Alex Zimper

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1 The Course

The students are going to learn how to use formal models from Game Theory and/or Information Economics to structure, to analyze, and ‘to solve’ economic situations or/and problems. The following theoretical concepts will be taught in some formal detail:

1. Strategic/normal form games and Nash equilibria (approx. 30% of the course)
2. Bayesian games and (Bayesian) Nash equilibria (approx. 20% of the course)
3. Extensive form games under perfect information and Subgame-perfect Nash equilibria (approx. 20% of the course)
4. Signaling games and Perfect Bayesian Nash equilibria (approx. 20% of the course)
5. Principal-agent problems with unobservable types: Monopolistic Screening (approx. 10% of the course)

We will apply these analytical tools to standard economic situations or/and problems such as, e.g., voting behavior, tragedy of the commons, oligopolistic competition, public good provision, auctions, etc. In addition,

I am open to address any current economic or political issues/stories that might be of interest.

I will (typically) develop the arguments and analysis in real-time at the white board. All students are encouraged to actively participate in this process and ask whatever questions come to their mind.

2 Exercises and Literature

Although the analytical level of this course is high, any specific mathematical tools and concepts that go beyond standard calculus will be dealt with in the lectures.

I will hand out several exercises that set the standard for the test and the final exam. Most of these exercises are taken from the following books (which may also serve as reference literature):

Ritzberger K. (2002) *Foundations of non-cooperative game theory*. Oxford University Press.

Fudenberg D. and J. Tirole (1991) *Game Theory*. MIT Press.

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

Although there is not ‘the one official text book’ for this course, selected chapters from the aforementioned books as well as additional articles will be relevant.