# Microeconomics III, Ex. Class 4

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# Outline

# Motivation

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From the course description:

1. This course furthers the introduction of game theory and its applications in economic models.

2. The student who successfully completes the course will learn the basics of game theory and will be enabled to work further with advanced game theory.

3. The student will also learn how economic problems involving strategic situations can be modeled using game theory, as well as how these models are solved.

4. The course intention is that the student becomes able to work with modern economic theory, for instance within the areas of industrial organization, macroeconomics, international economics, labor economics, public economics, political economics and financial economics.

# Overview

# Overview of the course

Course content

1. Static games with complete information,
2. Static games with incomplete information,
3. Dynamic games with complete information,
4. Dynamic games with incomplete information,

Form

- 13 lectures
- 13 sessions in exercise classes w. 12 problem sets
- 3 assignments

Check out the course description:
https://kurser.ku.dk/course/aØka08005u

# Learning outcome

**Knowledge:**

1. Formally state the definition of a game and explain the key differences between games of different types.

2. In detail account for the equilibrium (solution) concepts that are relevant for these games (Nash Equilibrium, Subgame Perfect Nash Equilibrium, Bayes-Nash Equilibrium, Perfect Bayesian Equilibrium).

3. Identify a number of special games and particular issues associated with them, such as repeated games (including infinitely repeated games), auctions and signaling games.

**Skills:**

1. Explicitly solve for the equilibria of these games.
2. Explain the relevant steps in the reasoning of the solution.
3. Interpret the outcomes of the analysis.
4. Apply equilibrium refinements and discuss the solution concepts

**Competencies:**

1. Analyze strategic situations by modeling them as formal games.
2. Set up, prove, analyze and apply the theories and methods used in the course in an independent manner.
3. Evaluate and discuss the crucial assumptions underlying the theory.

# Exam

Form and content

- Two hours without aids on Peter Bangs Vej.
- Cook-book approach as well as reflection

Example from solution guide for the exam Autumn 2018:

- *Missing due to the KU site being down*.

# Expectations

# Expectations to your preparation

Preparation for all exercise classes:

- Read in the curriculum and participate in the lecture:
- Bare minimum: Read through the lecture slides.
- *In all problem sets, there will be two types of exercises, A and B. When you show up for class, you are expected to have done all A-exercises and have read and understood all B-exercises. A-exercises will not be solved on the whiteboard. Instead, you will get the final answer, and have the opportunity to discuss the solution with your TA.*

Your own expectations to participation

*2 minute session where you discuss with your neighbor:*

***How do I prefer to learn?***

Consider what you can learn from

1. Trying to solve the *A* exercises the before ex. class.
2. Reflecting over approach to the *B* exercises before the ex. class.
3. Discussing a question with your neighbor/in plenum before the teaching assistant gives the answer?

# Problem Set 1