Game Theory

0. Organizational Matters

Albert-Ludwigs-Universität Freiburg

Bernhard Nebel and Robert Mattmüller
Summer semester 2019

1. About the Course

Lecturers

Prof. Dr. Bernhard Nebel
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Dr. Robert Mattmüller
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Exercises

Tim Schulte
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- office: room 052-00-044

Davif Speck
- email: speckd@informatik.uni-freiburg.de
- office: room 052-00-030
### Time & Place

**Lectures**
- **time:** Tuesday 16:15-17:45, Thursday 15:00-15:45
- **place:** building 101, seminar room 00-026

**Exercises**
- **time:** Thursday 14:15-15:00
- **place:** building 101, seminar room 00-026

### Website

**Course website**
http://gki.informatik.uni-freiburg.de/teaching/ss19/gametheory/
- **main page:** course description
- **lecture page:** slides, lecture notes
- **exercise page:** assignments, software

### Teaching Materials: Books

- Osborne & Rubinstein. *A Course in Game Theory.*
  Main source for the first half of this course. Quite formal.
- Osborne. *An Introduction to Game Theory.*
  Similar content as Osborne & Rubinstein, but less formal.
- Nisan, Roughgarden, Tardos, & Vazirani. *Algorithmic Game Theory.*
  Main source for the second half of this course

### Teaching Materials: Lecture Notes and Slides

- lecture notes in English and German:
  - **en:** http://gki.informatik.uni-freiburg.de/teaching/ss18/gametheory/gametheory_en.pdf
  - **de:** http://gki.informatik.uni-freiburg.de/teaching/ss18/gametheory/gametheory_de.pdf
  (PDFs updated regularly)
- open LaTeX sources (read-only):
  https://gkigit.informatik.uni-freiburg.de/teaching.gametheory/gametheory-lecturenotes/tree/master
  You may use and modify them. If you improve them, we are happy to include and acknowledge your contributions.
- slides available on course website
- additional resources: literature list on course website + ask us!
Target Audience

Students of Computer Science:
- Master of Science, any year
- Bachelor of Science, ∼3rd year

Other students:
- advanced study period (∼4th year)

Prerequisites

Course prerequisites:
- no formal required prerequisites
- some familiarity with mathematical notation and theoretical computer science is helpful, familiarity with Python 3 is assumed for the exercises.

Credit Points & Exam

- 6 ECTS points
- special lecture in specialization field Cognitive Technical Systems
- oral exam of about 30 minutes for B.Sc. students
- written or oral exam for M.Sc. students (likely written)
Exercises

Written assignments:
- handed out once a week
- due one week later, before the lecture
- discussed in the next exercise session
- may be solved in groups of up to three students
- 8 points per exercise sheet

Didactic web-based experiments in game theory:
- See http://gametheory.tau.ac.il/.
- course number and class password will be sent by email
- experiments conducted intermittently (three to five times throughout course)
- about one week time to complete
- discussed in the next exercise session
- must be solved alone (not in groups)
- 4 points per set of experiments

Admission to Exam

You can take the exam without any prerequisite!
However, you also have to acquire a Studienleistung:
- Points can be earned for “reasonable” solutions to exercises and for participation in web-based experiments.
- At least 50% of points prerequisite for acquiring the Studienleistung.

Plagiarism

What is plagiarism?
- Passing off solutions as your own that are not based on your ideas (work of other students, Internet, books, ...)
- http://en.wikipedia.org/wiki/Plagiarism is a good intro

Consequence: no Studienleistung!
- We may (!) be generous on first offense.
- Don’t tell us “We did the work together.”
- Don’t tell us “I did not know this was not allowed.”