Game Theory

0. Organizational Matters

Albert-Ludwigs-Universität Freiburg

Bernhard Nebel and Robert Mattmüller

Summer semester 2017

1 About the Course

People

Lecturers

Prof. Dr. Bernhard Nebel

- email: nebel@informatik.uni-freiburg.de
- office: room 052-00-029

Dr. Robert Mattmüller

- email: mattmuel@informatik.uni-freiburg.de
- office: room 052-00-030

People

Exercises

Tim Schulte

- email: schultet@informatik.uni-freiburg.de
- office: room 052-00-044

Grigoris Mouratidis

- email: Grmouras@hotmail.com

Time & Place

Lectures

- time: Monday 16:15-17:00, Wednesday 14:15-16:00
- place: building 101, seminar room 01-016
- alternative time with more seats: Monday 18:15-19:00, Wednesday 14:15-16:00, building 101, 00-036
- alternative place: Monday: Kinohörsaal, Wednesday: 00-036.

Exercises

- time: Monday 17:15-18:00
- place: building 101, seminar room 01-016
- perhaps alternative time or place

Website

Course website

`http://gki.informatik.uni-freiburg.de/teaching/ss17/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

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- lecture notes in English and German:
  - en: `http://gki.informatik.uni-freiburg.de/teaching/ss17/gametheory/gametheory_en.pdf`
  - de: `http://gki.informatik.uni-freiburg.de/teaching/ss17/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!

2 Rules

Target Audience

Students of Computer Science:

- Master of Science, any year
- Bachelor of Science, $\sim$3rd year

Other students:

- advanced study period ($\sim$4th year)

Prerequisites

Course prerequisites:

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

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

Successful participation (50% of points) prerequisite for exam admission.

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 two students ($2 \neq 3$)
- 8 points per exercise sheet

Exercises

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

- points can be earned for “reasonable” solutions to exercises and for participation in web-based experiments.
- at least 50% of points prerequisite for admission to final exam.

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 admission to the final exam.

- 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."