

# General course information

ENM140, Game theory and rationality 2017

Welcome to the course in game theory and rationality!

This document contains general information about the course. Make sure to read it carefully. The course has a number of other compulsory tasks which are all summarized in this document.

To stay updated on course news and to find further instructions relating to assignments, seminars, and the project work, please see the course homepage:

<http://studycas.com/c/courses/gtr>.

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# 1 Course webpage and Dropbox folder

All course information is found at <http://studycas.com/c/courses/gtr>. Please check the website regularly during the course, as we will post news and instructions there.

A Dropbox folder will be used to distribute some documents, including:

- Some reading materials
- Slides/lecture notes
- Preparation materials for the student-led seminars
- Results of Assignment 1 and Assignment 2

If you are registered for the course, you will receive an email with a link to the Dropbox folder. If you are not registered, please send an email to Rasmus and ask for the link.

## 2 Teachers

Kristian Lindgren (Examiner, lecturer, project supervisor)  
[kristian.lindgren@chalmers.se](mailto:kristian.lindgren@chalmers.se)

Rasmus Einarsson (Teaching assistant, project supervisor)  
[rasmus.einarsson@chalmers.se](mailto:rasmus.einarsson@chalmers.se)

## 3 Lectures and seminars

The schedule is in [TimeEdit](#).

Lectures and seminars are held each week on

- Monday at 10:00–11:45
- Wednesday at 10:00–11:45
- Wednesday at 13:15–15:00

All lectures and seminars are held in room FL51 in the Physics building. On a few special occasions (presentations, exam) we split into two rooms. See [TimeEdit](#) for details on these occasions.

## 4 Literature and video lectures

The main course book is Kevin Leyton-Brown and Yoav Shoham, *Essentials of Game Theory: A Concise, Multidisciplinary Introduction* (2008).

The book can be downloaded free of charge through Chalmers' library: [direct link](#).

Selected chapters and examples may be distributed from Herbert Gintis, *Game Theory Evolving: A Problem-Centered Introduction to Modeling Strategic Interaction* (Second Edition, 2009)". The book is available as ebook at Chalmers' library ([direct link here](#)). A few pages from each chapter are also available on [Gintis' own web page](#).

The following video lectures in game theory may be worth checking out:  
<https://www.youtube.com/user/gametheoryonline/featured>

Other course materials, preparations for seminars, etc., are provided through the Dropbox folder.

## 5 Individual assignments

There are two individual assignments in the course:

1. Formulate a game idea as possible basis for a project
2. Design and implement strategies for a game tournament

Instructions for these are given in separate documents on the [course homepage](#). The deadlines are listed in Section 8.2 below.

## 6 Mandatory midterm exam

There will a midterm exam on Monday 20 November at 10.00–11.45. The exam is mandatory and it contributes to your grade in the course. There is a minimum passing score that you have to reach to pass the course. Please see the [course homepage](#) for a separate document with further instructions, a study guide, and example questions.

## 7 Group work

All students will be part of a group. Each group will do the following things: (1) prepare and lead a seminar for the whole class, (2) work on a modeling and simulation project, and (3) provide peer-review feedback on another group's draft project report.

### 7.1 How to form a group

All students must sign up in a group no later than Wednesday 15 November, 18:00. To sign up, form a group of **three students** and send an email to Rasmus with your names, CIDs and email addresses. Groups may in exceptional cases consist of **two or four students**. If you want or need to be two or four in a group, discuss this with Rasmus or Kristian in person or by sending an email.

If your group for some reason cannot participate in a specific time slot (see the lecture plan for seminars and the 15-minute project presentations), please notify Rasmus as soon as possible, and we will try to work out a schedule that works for everyone.

You need to actively engage in the group formation task during or after lectures and discussions. One such occasion is the brain storming around game ideas, following the first assignment, that can serve as inspiration for the projects. If you still have trouble finding or forming a group, please let us know and we will try to help out.

## 7.2 Student-led seminars

Each group will prepare and lead a 45-minute seminar. All group members must take active part in the work. Detailed instructions are given in a separate document on the [course homepage](#). For deadlines, see Section 8.2 below.

## 7.3 Projects

A major part of the course (40-50%; 80-100 hours) is a game theory project, involving modeling, simulation and analysis of a model selected by the project group. As a part of the project work, your group will also provide peer-review comments on one other group's preliminary project report. Detailed instructions are given in a separate document on the [course homepage](#). The deadlines are listed in Section 8.2 below.

# 8 Grading and compulsory attendance

To get a passing grade you need to complete the compulsory course components:

- Attendance on at least 6 of the following 9 occasions, including your own seminar:
  - Monday 13 November 10:00–11:45 (guest lecture, Vilhelm Verendel)
  - Wednesday 22 November 13:15–15:00 (guest lecture, Erik Sterner)
  - Monday 27 November 10:00–11:45 (student-led seminars)
  - Wednesday 29 November 10:00–11:45 (student-led seminars)
  - Wednesday 29 November 13:15–15:00 (student-led seminars)
  - Monday 4 December 10:00–11:45 (student-led seminars)
  - Wednesday 6 December 10:00–11:45 (student-led seminars)
  - Wednesday 6 December 13:15–15:00 (guest lecture, Ove Granstrand)
  - Monday 11 December 10:00–11:45 (guest lecture, Rasmus Einarsson)

- The two individual assignments.
- Passing grade on the midterm exam.
- Oral presentation of preliminary project results, and attendance on 50% of the other groups' presentations.
- Submission of a draft report and peer review of one other group's draft.
- Submission of a final project report, including the contribution report.

All assignments, peer-review, presentations and other duties must be done in time. If there are very special reasons a separate examination may be possible to arrange. If you have such a need, please let us know as soon as possible.

## 8.1 Grading criteria

The following course components contribute to your grade: the midterm exam, the seminar your group prepares and leads, and the project work. Your final grade is decided depending on the sum of your scores on these three components. The three components can maximum add up to 50 points and the grade limits are as follows:

- Grade 3: At least 20 points.
- Grade 4: At least 30 points.
- Grade 5: At least 40 points.

The different components contribute to your total score as follows:

**The exam** gives up to 18 points. See separate exam instructions to know how your score is determined.

**The seminars** give up to 8 points. We consider the following dimensions:

- The relevance of your seminar topic is graded with 0–2 points. Your seminar topic may be relevant primarily in two ways: (1) for the field of game theory as such, e.g., if it is a major contribution (old or new) to the field of game theory, or (2) because it speaks to a societal issue. Your preparation materials and the seminar itself should help to demonstrate or explain the relevance of the topic. If you are in doubt about your topic, please discuss with Kristian or Rasmus before making your final decision.
- Your preparation materials are graded with 0–3 points. The preparation materials should be comprehensible and relevant for the audience (your classmates) and should prepare them well for an interesting seminar. It must present an opportunity for your classmates to learn something new, and thus it must not be too difficult or too easy.
- The actual seminar is graded with 0–3 points. We try to give an overall score

reflecting, among other things, the following: Is your seminar comprehensible? Is the level and the pace of the seminar right for the audience? Are there significant learning opportunities?

**The final project reports** give up to 24 points, based **exclusively on our reading of your report**. In grading your project, we do not consider what you have written in the draft report, what you have said in discussions or what you have shown or said in oral presentations.

Since the projects may be quite different, we are necessarily a little vague in the grading criteria, but we will always consider and grade the following dimensions:

- Your project idea and the context you present for it are graded with 0–8 points. The context includes things such as: Why is your problem or model an interesting one to study? What are some examples of similar work that has been done on the problem or model? What are some examples of theoretical or simulation tools that can be or have been applied to it? We also consider whether your project proposes an interesting question or an interesting extension/variant of the problem or model.
- The quality of your simulation, analysis and discussion is graded with 0–8 points. We will use guiding questions such as: Is your analysis correct, comprehensible and relevant to the problem? Did you use suitable simulations/theory/models for your problem? Did you have to make extensive and/or difficult simulations or calculations, and in that case, were they well made? Is your discussion comprehensible, relevant, convincing, and does it put your work in context?
- The project report itself is graded with 0–8 points. We will consider at least the following dimensions: Does the report conform to all the guidelines given in the project report instructions? Are your descriptions of method and results so clear that we could reproduce your work and compare our results to yours? Are all figures and tables labeled with correct units, axis labels, descriptive captions and other things that are necessary to understand?

Late hand-in of the report can not give more than the lowest passing grade. Insufficient reports are given one more chance for revision (to be handed in no later than 16 February 2018, 18.00), but only to get the chance for the lowest passing grade.

Projects are graded individually based on the above points and the information provided in your contribution report.

## 8.2 Summary of activities and deadlines

### Assignment 1: Game idea

Submit no later than Monday 6 November, 18:00.

## **Assignment 2: Strategy competition**

Submit no later than Monday 13 November, 18:00.

## **Midterm exam**

The exam is held Monday 20 November 10:00–11:45.

## **Student-led seminars**

Submit the literature and reading guide for your seminar **no later than five days before the seminar** at 18:00. This means:

- If your seminar is on a Monday, submit the materials the Wednesday before, no later than 18:00.
- If your seminar is on a Wednesday, submit the materials the Friday before, no later than 18:00.

## **Project work**

- Join a project group by sending an email with your names and email addresses to Rasmus no later than Wednesday 15 November, 18:00.
- Submit your group's 1-page project idea Wednesday 22 November, 23:59.
- Give oral presentation of your project and preliminary results on Wednesday 13 December.
- Submit a draft version of the report (send it to your peer reviewers, with copy to Rasmus) no later than Wednesday 3 January 2017, 18:00.
- Submit feedback to another group (copy to Rasmus) no later than Monday 8 January 2018, 18:00.
- Submit your final project report no later than Friday 12 January 2018, 18:00.