



Course and Examination Fact Sheet: Spring Semester 2020

8,250: Advanced Microeconomics III: Game Theory

ECTS credits: 4

Overview examination/s

(binding regulations see below)

Decentral - Written examination (70%, 90 mins.)

Decentral - examination paper written at home (individual) (30%)

Attached courses

Timetable -- Language -- Lecturer

[8,250,1.00 Advanced Microeconomics III: Game Theory](#) -- Englisch -- [Bühler Stefan](#)

Course information

Course prerequisites

Students should have a firm background in microeconomic analysis. Basic knowledge of game theory is expected.

Learning objectives

In this course, students

1. learn how to describe strategic interaction,
2. familiarize themselves with the most important solution concepts,
3. gain practice in solving game-theoretic problems,
4. learn how to think strategically within and beyond the classroom.

Course content

Game theory is the lingua franca of modern behavioral and social sciences. In particular, game theory is an indispensable tool for the analysis of strategic interaction between economic agents in all subfields of economics. This course builds on material that students have learned in their bachelor studies. The goals of this course are to introduce students to various examples and applications of game theory, to train them to apply advanced, game theoretic concepts, and to convey the theoretical fundamentals of the field. The course aims to enable students to independently describe and analyze settings with strategic interaction using the tools of modern game theory.

Course structure

Lectures take place weekly - there is no separate tutorial session. In each class, we discuss the key concepts, solve exercises, or conduct classroom experiments to immerse ourselves in the material.

A thorough understanding of the contents of the "Brush Up" about normal-form games and solution concepts (Lecture 0) is a prerequisite for this course. Students are therefore asked to familiarize themselves with the contents of the "Brush Up" before the beginning of the course.

Tentative Structure (subject to change):

Static Games of Complete Information

1. Mixed Strategies and Nash's Existence Theorem

Dynamic Games of Complete Information

2. Brush Up



3. Multistage Games
4. Repeated Games I
5. Repeated Games II

Static Games of Incomplete Information

6. Brush Up
7. Exercise Session I

Dynamic Games of Incomplete Information

8. Brush Up
9. Cheap Talk
10. Exercise Session II
11. Exam

Course literature

Main text:

Tadelis, S. (2013), *Game Theory: An Introduction*, Princeton University Press.

Other useful texts:

Brams, S.J., (2011), *Game Theory and the Humanities: Bridging Two Worlds*, MIT Press.

Fudenberg, D., Tirole, J. (1993), *Game Theory*, MIT Press.

Gibbons, R. (1992), *Game Theory for Applied Economists*, Princeton University Press.

Mailath, G.J., Samuelson, L. (2006), *Repeated Games and Reputations*, Oxford University Press

Mas-Colell, A., Whinston, M.D., Green, J.R. (1995), *Microeconomic Theory*, Oxford University Press; Chapters 7-9.

Osborne, M.J., Rubinstein, R. (1994), *A Course in Game Theory*, MIT Press.

Tirole, J. (1988), *Theory of Industrial Organization*, MIT Press; Chapter 11.

Vega-Redondo, R. (2003), *Economics and the Theory of Games*, Cambridge University Press.

Additional course information

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Examination information

Examination sub part/s

1. Examination sub part (1/2)

Examination time and form

Decentral - Written examination (70%, 90 mins.)

Remark

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Examination-aid rule

Extended Closed Book

The use of aids is limited; any additional aids permitted are exhaustively listed under "Supplementary aids". Basically, the following is applicable:

- At such examinations, all the pocket calculators of the Texas Instruments TI-30 series and mono- or bilingual dictionaries



(no subject-specific dictionaries) without hand-written notes are admissible. Any other pocket calculator models and any electronic dictionaries are inadmissible.

- In addition, any type of communication, as well as any electronic devices that can be programmed and are capable of communication such as notebooks, tablets, PDAs, mobile telephones and others, are inadmissible.
- Students are themselves responsible for the procurement of examination aids.

Supplementary aids

No additional aids allowed

Examination languages

Question language: English

Answer language: English

2. Examination sub part (2/2)

Examination time and form

Decentral - examination paper written at home (individual) (30%)

Remark

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Examination-aid rule

Term papers

- Term papers must be written without anyone else's help and in accordance with the known quotation standards, and they must contain a declaration of authorship.
- The documentation of sources (quotations, bibliography) has to be done throughout and consistently in accordance with the APA or MLA standards. The indications of the sources of information taken over verbatim or in paraphrase (quotations) must be integrated into the text in accordance with the precepts of the applicable quotation standard, while informative and bibliographical notes must be added as footnotes (recommendations and standards can be found, for example, in METZGER, C. (2017), *Lern- und Arbeitsstrategien* (12th ed., Cornelsen Schweiz).
- For any work written at the HSG, the indication of the page numbers both according to the MLA and the APA standard is never optional.
- Where there are no page numbers in sources, precise references must be provided in a different way: titles of chapters or sections, section numbers, acts, scenes, verses, etc.
- For papers in law, the legal standard is recommended (by way of example, cf. FORSTMOSER, P., OGOREK R. et SCHINDLER B. (2018, *Juristisches Arbeiten: Eine Anleitung für Studierende* (6. Auflage), Zürich: Schulthess, or the recommendations of the Law School).

Supplementary aids

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Examination languages

Question language: English

Answer language: English

Examination content

Students will have to submit one problem set that is graded (accounting for 30% of the total grade) during the semester. At the end of the semester there is a final written exam (accounting for 70% of the total grade).

Examination relevant literature

The following content is covered in the examination:

- Chapters 3-6, 7-9, 10, 12, 15, 18 of Tadelis, S. (2013), *Game Theory: An Introduction*, Princeton University Press.
- The graded problem set (made available on Canvas before May 12, 2020)
- Lectures 0-10 incl. the exercises from Exercise Session I and II (made available on Canvas before May 12, 2020)



Please note

Please note that this fact sheet alone is binding and has priority over any other information such as StudyNet (Canvas), personal databases or faculty members' websites and information provided in their lectures, etc.

Any possible references and links within the fact sheet to information provided by third parties are merely supplementary and informative in nature and are outside the University of St.Gallen's scope of responsibility and guarantee.

Documents and materials that have been submitted no later than the end of term time (CW21) are relevant to central examinations.

Binding nature of the fact sheet:

- Information about courses and examination time (central/decentral) and examination type starting from the beginning of the bidding on 23 January 2020
- Information about examinations (examination aid regulations, examination content, examination-relevant literature) for decentral examinations after the 4th semester week on 16 March 2020
- Information about examinations (examination aid regulations, examination content, examination-relevant literature) for central examinations as from the starting date for examination registration on 6 April 2020

Please consult the fact sheet again after these deadlines have expired.