



Course and Examination Fact Sheet: Autumn Semester 2022

5,240: Game Theory and Applications

ECTS credits: 6

Overview examination/s

(binding regulations see below)

Decentral - Written examination (with defined exam duration) (80%, 120 mins.)

Examination time: term time

Decentral - Active participation (20%)

Examination time: term time

Attached courses

Timetable -- Language -- Lecturer

[5.240.1.00 Game Theory and Applications](#) -- Englisch -- [Gärtner Dennis](#)

Course information

Course prerequisites

This course's target audience are students in economics or business with a strong interest in learning how to solve strategic problems (encountered in economics and business) while reasoning formally, using the language of game theory. To learn effectively from this course, students must have already taken at least one formal course in Microeconomics. However, all relevant concepts will be reviewed during the course as well.

Learning objectives

By the end of the course, students will be able to formulate and solve game-theoretic (i.e. strategic) situations, and to formally articulate the optimal strategic behaviour in a given business or economic situation. Students will be able to apply the acquired skills to write an independent model of a strategic situation (that could be used, e.g., as one of building blocks of a Bachelor or Master thesis). Knowing key concepts of game theory will also simplify students' understanding of the material from other microeconomics-based classes and will provide the necessary preparation for Master-level microeconomics courses.

Course content

The key idea of the course is to teach students how to reason formally in game-theoretic terms and how to find optimal behaviour within any possible strategic situation, e.g., encountered in business, politics or even private interaction with friends. The introduction of the material will be gradual, starting with the simplest classical games and proceeding to build up the necessary skills to work with the most recently developed concepts in game theory. Applications will cover issues in business economics, public policy, digital economics, public policy, politics, and more.

Course structure and indications of the learning and teaching design

The course comprises two sessions per week, to be used for a mixture of lectures and tutorials focused on problem-set solving.

The course's main part is divided, roughly speaking, into four large blocks, each corresponding to a specific type of games: static games of complete information, dynamic games of complete information, static games of incomplete information, and dynamic games of incomplete information. Each block will in turn contain three main components: 1. theoretical concepts; 2. real-life applications; 3. problem sets and exercises.

The written exam presumably takes place in the last week of lectures on one of the lecture dates.



Course literature

Main textbook:

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

Extra literature, such as scientific papers relevant for applications, will be posted on Studynet in due course.

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 (with defined exam duration) (80%, 120 mins.)

Examination time: term time

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, mobile telephones and others, are inadmissible.
- Students are themselves responsible for the procurement of examination aids.

Supplementary aids

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Examination languages

Question language: English

Answer language: English

2. Examination sub part (2/2)

Examination time and form

Decentral - Active participation (20%)

Examination time: term time

Remark

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Examination-aid rule

Active classroom participation

In the "Active classroom participation" examination form, regular participation in class is assessed.



The assessment criteria can be as follows:

- Requests to speak enrich the discussion (productive) / requests to speak disturb the discussion (counterproductive);
- Requests to speak are correct/requests to speak are incorrect;
- Requests to speak are frequent/average/rare;
- No requests to speak, but students follow the lesson/no requests to speak and students do not noticeably follow the lessons.

Supplementary aids

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Examination languages

Question language: English

Answer language: English

Examination content

Written exam: solving problems

Topics covered: static games of complete information, dynamic games of complete information, static games of incomplete information, dynamic games of incomplete information.

Active participation: Participation in and contribution to discussions and problem solving in class.

Examination relevant literature

Mandatory Literature:

Lecture notes and the main textbook (Tadelis, Steve (2013), Game Theory: An Introduction, Princeton University Press).

Extra literature:

Scientific papers relevant for applications will be posted on Studynet in due course (before the end of the lecture period at the latest).



Please note

Please note that only this fact sheet and the examination schedule published at the time of bidding are binding and takes precedence over other information, such as information on StudyNet (Canvas), on lecturers' websites and information in lectures etc.

Any references and links to third-party content within the fact sheet are only of a supplementary, informative nature and lie outside the area of responsibility of the University of St.Gallen.

Documents and materials are only relevant for central examinations if they are available by the end of the lecture period (CW51) at the latest. In the case of centrally organised mid-term examinations, the documents and materials up to CW 42 are relevant for testing.

Binding nature of the fact sheets:

- Course information as well as examination date (organised centrally/decentrally) and form of examination: from bidding start in CW 34 (Thursday, 25 August 2022);
- Examination information (regulations on aids, examination contents, examination literature) for decentralised examinations: in CW 42 (Monday, 17 October 2022);
- Examination information (regulations on aids, examination contents, examination literature) for centrally organised mid-term examinations: in CW 42 (Monday, 17 October 2022);
- Examination information (regulations on aids, examination contents, examination literature) for centrally organised examinations: two weeks before the end of the registration period in CW 45 (Monday, 7 November 2022).