



Course and Examination Fact Sheet: Autumn Semester 2021

5,240: Game Theory and Applications

ECTS credits: 6

Overview examination/s

(binding regulations see below)

Central - Written examination (60%, 90 mins.)

Examination time: inter-term break

Decentral - examination paper written at home (in groups - all given the same grades) (30%)

Examination time: term time

Decentral - Active participation (10%)

Examination time: term time

Attached courses

Timetable -- Language -- Lecturer

[5,240.1.00 Game Theory and Applications](#) -- Englisch -- [Gizatullina Alia](#)

Course information

Course prerequisites

The target audience of this course is 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

At the end of the course, the students will be able to solve a game and articulate formally what is the optimal strategic behaviour in a given business or economic situation. The 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 the key concept of the 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. Among the applications that we will cover are the models from business, digital economics, politics and financial markets.

Course structure and indications of the learning and teaching design

The course is held weekly and consists of a mixture between lectures and tutorials focused on problem-set solving.

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

Course literature



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

Additional course information

In the case of the President's Board having to implement new directives due to the SARS-CoV-2 pandemic in AS2021, the course information listed above will be changed as follows:

The course is conducted online via the platform Zoom;

The lecturer informs via StudyNet on the changed implementation modalities of the course;

The examination information listed below would be changed as follows:

There are no changes necessary to the examination information.

Examination information

Examination sub part/s

1. Examination sub part (1/3)

Examination time and form

Central - Written examination (60%, 90 mins.)

Examination time: inter-term break

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 (2/3)

Examination time and form

Decentral - examination paper written at home (in groups - all given the same grades) (30%)



Examination time: term time

Remark

Group of max 2 persons

Examination-aid rule

Term papers

Written work must be written without outside help according to the known citation standards, and a declaration of authorship must be attached, which is available as a template on the StudentWeb.

Documentation (quotations, bibliography, etc.) must be carried out universally and consistently according to the requirements of the chosen/specified citation standard such as e.g. APA or MLA.

The legal standard is recommended for legal work (cf. by way of example: FORSTMOSER, P., OGOREK R., SCHINDLER B., Juristisches Arbeiten: Eine Anleitung für Studierende (the latest edition in each case), or according to the recommendations of the Law School).

The reference sources of information (paraphrases, quotations, etc.) that has been taken over literally or in the sense of the original text must be integrated into the text in accordance with the requirements of the citation standard used. Informative and bibliographical notes must be included as footnotes (recommendations and standards e.g. in METZGER, C., Lern- und Arbeitsstrategien (latest edition)).

For all written work at the University of St.Gallen, the indication of page numbers is mandatory, regardless of the standard chosen. Where page numbers are missing in sources, the precise designation must be made differently: chapter or section title, section number, article, etc.

Supplementary aids

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Examination languages

Question language: English

Answer language: English

3. Examination sub part (3/3)

Examination time and form

Decentral - Active participation (10%)

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

Central written exam: solving problems

Term paper: based on a published academic paper

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

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, 26 August 2021);
- Examination information (regulations on aids, examination contents, examination literature) for decentralised examinations: in CW 42 (Monday, 18 October 2021);
- Examination information (regulations on aids, examination contents, examination literature) for centrally organised mid-term examinations: in CW 42 (Monday, 18 October 2021);

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, 8 November 2021).