



Course and Examination Fact Sheet: Spring Semester 2022

8,398: Game Theory and Applications (MIA)

ECTS credits: 4

Overview examination/s

(binding regulations see below)

Decentral - examination paper written at home (individual) (40%)

Examination time: term time

Decentral - examination paper written at home (individual) (45%)

Examination time: term time

Decentral - Active participation (15%)

Examination time: term time

Attached courses

Timetable -- Language -- Lecturer

[8,398.1.00 Game Theory and Applications \(MIA\)](#) -- Englisch -- [Westerwinter Oliver](#)

Course information

Course prerequisites

A willingness to work through possibly unfamiliar material. A basic understanding of calculus and probability theory are helpful, but not required.

Learning objectives

The emphasis of the course is on the theoretical aspects of strategic behavior and the application of game theoretic concepts and models to questions of interest for social scientists. The primary objective is to enable students to understand research that uses game theoretic models. In addition, the course provides students with the skills required to start analyzing strategic situations and build simple game theoretic models on their own. Students will also engage in their own analyses and start developing their own game theoretic models in order to answer substantive questions of interest.

Course content

Strategic interdependence is ubiquitous in socio-political life. Individuals exchange goods, firms compete for market access, and states bargain over territory, voting shares in international organizations, and other goods they care about. In these and numerous other situations, actors must anticipate others' behavior to reach optimal decisions and maximize their utility. Noncooperative game theory is a framework and set of techniques for understanding and analyzing such strategic interaction. Conflict, cooperation, coordination, bargaining, and communication are topics that can be investigated within this framework.

This course provides students with a systematic introduction to the fundamentals of non-cooperative game theory and their application to social science problems. It develops the basic concepts and results of non-cooperative game theory. Topics covered include decision theory, simultaneous and sequential move games, complete and incomplete information games, repeated games, bargaining models, and signaling models. Substantive applications will be drawn from inter-firm competition, legislative bargaining, agenda manipulation, electoral competition, international conflict, and other areas.

Course structure and indications of the learning and teaching design

The course will take place in the spring semester 2022. The course will take place in-person as blocked seminar during the semester break. A virtual kick-off meeting will be held at the beginning of the semester. The participation in the kick-off meeting is essential. The format of the course will be handled according to the global and local circumstances. If safe presence teaching is not



consistently feasible, the course will be taught in an online format using Canvas and Zoom. The exam requirements will not be affected by the format of the course.

Course literature

The syllabus will provide a full list of mandatory and optional readings for the class. Relevant readings include, but are not limited to:

McCarty, Nolan and Adam Meirowitz. 2007. *Political Game Theory: An Introduction*. Cambridge: Cambridge University Press.

Morrow, James D. 1994. *Game Theory for Political Scientists*. Princeton: Princeton University Press.

Additional course information

In the case of the President's Board having to implement new directives due to the SARS-CoV-2 pandemic in SpS2022, the course information listed above will be changed as follows:

- The course is conducted online via the platform zoom;
- The recordings of the course are available for 30 day;
- The lecturer informs via StudyNet on the changed implementation modalities of the course;
- There are no changes necessary to the course information.

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

Decentral - examination paper written at home (individual) (40%)

Examination time: term time

Remark

Term paper

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

none

Examination languages

Question language: English

Answer language: English

2. Examination sub part (2/3)

Examination time and form

Decentral - examination paper written at home (individual) (45%)

Examination time: term time

Remark

Problem set

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

none

Examination languages

Question language: English

Answer language: English

3. Examination sub part (3/3)

Examination time and form

Decentral - Active participation (15%)

Examination time: term time

Remark

Active participation in class discussions

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

none

Examination languages

Question language: English

Answer language: English

Examination content

There will be three homework assignments, each of which will contribute 15% to your final grade (45% in total). The homework assignments will consist of analytical problems. The solutions of the assignments have to be submitted either via Canvas or via email directly to the course instructor. The assignments will be available one week prior to the class at which they are due. No late submissions will be accepted. All submitted homework will be graded. Solutions will be available electronically in due course after the submission of the assignments.

The homework assignments are solo exams. Thus, you always need to write and submit your own solutions. Please always make sure that you write your name on every page of your submission. Please note that the homework assignments are designed to support and deepen your understanding of the material discussed in class. They will help you to self-assess your level of accomplishment and plan your term paper project.

The term paper will contribute 40% to your final grade. It has to be submitted either as hard copy or electronically (per email to: oliver.westerwinter@unisg.ch) by June 12. Late submissions will not be accepted. The term paper is expected to present a short research project that uses non-cooperative game theory. In the term paper, you develop your own game-theoretic model in light of a research question of your interest. The maximum length of the paper is 5,000 words (including footnotes, references, etc.). The term paper is a solo exam. You are therefore expected to work on and submit your term paper project individually.

Active participation contributes 15% to your final grade. Active participation means that you come to class, work through all the required readings prior to class, and take part in the discussions and exercises.

Examination relevant literature

The syllabus will provide a full list of mandatory and optional readings for the class.



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 (CW21) at the latest. In the case of centrally organised mid-term examinations, the documents and materials up to CW 12 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 04 (Thursday, 27 January 2022);
- Examination information (regulations on aids, examination contents, examination literature) for decentralised examinations: in CW 12 (Monday, 21 March 2022);
- Examination information (regulations on aids, examination contents, examination literature) for centrally organised mid-term examinations: in CW 12 (Monday, 21 March 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 15 (Monday, 11 April 2022).