Dauphine | PSL★
UNIVERSITÉ PARIS

0IECOX05 – Introduction to Game Theory

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Department: International affairs
Semester: 1

Course level: L3 Undergraduate
Domain: Economics
Teaching language: English
Number of in-class hours: 33
Number of course sessions: 10 + Exam
ECTS: 6

Course description and objectives

We will cover the fundamental concepts of strategic games, extensive games with perfect information, Bayesian games and extensive games with imperfect information. We will provide illustrations from the social and behavioral sciences and examples that demonstrate how the theory may be used.
Main Topics:
- Building a model of interactions
- Dominant/dominated strategies and iterated elimination of dominated strategies
- Nash equilibrium in discrete games
- Mixed strategies
- Subgame perfect equilibrium
- Imperfect information
- Private information

Prerequisites

Basic knowledge of microeconomics, mathematics and probabilities

Learning outcomes

Game theory is a mode of reasoning that applies to all encounters between humans and deserves a place in a general liberal arts education. We provide a general presentation of the main concepts of game theoretical concepts and many applications of these concepts (with a slight bias towards economic applications).

Assignments and grading

The final grade is the average of the grades of the mid-term exam and the final exam. The passing grade for a course is 10/20.

Class participation: Active class participation – this is what makes classes lively and instructive. Come on time and prepared. Class participation is based on quality of comments, not quantity.
Exam policy: In the exam, students will not be allowed to bring any document (except if allowed by the lecturer). Unexcused absences from exams or failure to submit cases will result in zero grades in the calculation of numerical averages. Exams are collected at the end of examination periods.

Course structure

Session	Topic
1	Introduction to strategic reasoning
2	Building a model of strategic interaction
3	Solving a game when rationality is common knowledge

4	Nash equilibria in discrete game with 2 or 3 players
5	Nash equilibria with n players
6	Nash equilibria with n players
7	Randomized strategie
8	Sequential games with perfect information
9	Sequential games with imperfect information
10	Games with private information
11	**Final Exam**

Bibliography

An Introduction to Game Theory, Joseph Harrington
An Introduction to Game Theory, Martin Osborne

Moodle

This course is on Moodle: N**o**

Academic integrity

Be aware of the rules in Université Paris Dauphine about plagiarism and cheating during exams. All work turned in for this course must be your own work, or that of your own group. Working as part of a group implies that you are an active participant and fully contributed to the output produced by that group.