ECO316H1 F
Applied Game Theory
Summer 2024 Syllabus

Course Meetings

ECO316H1 F

Section	Day & Time	Delivery Mode & Location
LEC0101	Tuesday, 10:00 AM - 1:00 PM	In Person: MP 134
	Thursday, 10:00 AM - 1:00 PM	In Person: MP 134

Refer to ACORN for the most up-to-date information about the location of the course meetings.

Course Contacts

Instructor: Professor Itai Arieli
Email: itaiarieli173@gmail.com
Phone: 4376625243
Office Hours and Location: Thursdays 13:30-14:30 Max Gluskin House, room 209.

Course Overview

Focuses on the core ideas and concepts of game theory and on applications of them in economics and other social sciences. Topics may include: oligopoly, electoral competition, the theory of public goods, voting theory, the free rider problem, repeated interaction, bargaining, evolutionary equilibrium, matching and auctions.

Note: This course cannot be taken as a substitute in programs that require ECO326H1.

Focuses on the core ideas and concepts of game theory and on applications of them in economics and other social sciences. Topics include:

- Two-player games and strategic games
  - Pure Nash equilibrium
  - Cournot's model and Bertrand's model of duopoly
  - Mixed Nash equilibrium
  - Iterated deletion of dominated strategies
  - Zero-sum games and the value of a game
  - Extensive form games with perfect information
  - Games with incomplete information
  - Nash bargaining solution

Note: This course cannot be taken as a substitute in programs that require ECO326H1.

Course Learning Outcomes

By the end of the course, students will be able to analyze strategic interactions in two-player games, compute Pure and Mixed Nash Equilibria, apply iterative strategies like the Iterated Deletion of Dominated Strategies, evaluate zero-sum games, model extensive form games with perfect and incomplete information, and utilize the Nash Bargaining Solution to negotiate outcomes, equipping them with a comprehensive understanding of applied game theory for various real-world contexts.

Prerequisites: ECO200Y1/ECO204Y1/ECO206Y1
Corequisites: None
Exclusions: ECO326H1, ECO326H5
Recommended Preparation: None
Credit Value: 0.5

Course Materials

- Osborne, M. J. (2004). An introduction to game theory. New York: Oxford University Press.
- Tadelis, Steven. (2013). Game theory: an introduction. Princeton University Press.
- Dixit, Avinash K., and Susan Skeath. (2015). Games of strategy: Fourth international student edition. WW Norton & Company.
- Maschler, Michael, Shmuel Zamir, and Eilon Solan. (2020). Game theory. Cambridge University Press.
- Osborne, Martin J., and Ariel Rubinstein. (1990). Bargaining and markets. Academic Press Limited.

Marking Scheme

Assessment	Percent	Details	Due Date
Problem sets	10%	5 out of six problem sets need to be submitted. The problem set will be posted on Quercus by 10am on Tuesday and have to be submitted by the same time the following week..	2024-06-07

Assessment	Percent	Details	Due Date
In Person Midterm Exam 1.5-2 hours	20%	You are required to attend the midterm. You can miss the midterm only by self-declare through the Absence Dec- laration tool on ACORN. You need to send me the receipt of this declaration at least two hours BEFORE THE START OF THE MIDTERM - otherwise, I will not accept it. The midterm is scheduled in-person for Tuesday, May 28, 10-12am. Students who self-declare missing will have an exam whose weight is 90% of course marks. I encourage students in this situation to make an appointment with an academic advisor at their College Registrar for support around academic planning. Should you miss the midterm, without self-declaring absent you will automatically get 0 points for the midterm on the final grade. There will be no exceptions. Any absence during the final exams is dealt with according to the standard university procedures.	2024-05-28
In-Person Final Exam	70%		Final Exam Period

Late Assessment Submissions Policy

Late submission means a grade of 0.

Policies & Statements

Late/Missed Assignments

This item is listed here to remind you to include your late/missed assignment policy; if you have late penalties, you are required to publish them in your syllabus. Please see the A&S Academic Handbook (https://www.artsci.utoronto.ca/faculty-staff/teaching/academic-handbook) sections

on missed term work (Section 4.7), late term work and extensions (section 4.8), and missed term tests (Section 5.3) for more information.