

**Faculty of Liberal Arts and Professional Studies  
Department of Economics**

**Course:** AP/ECON 4130 3.0 A – Game Theory

**Course\_Webpage:** [https://moodle.info.yorku.ca/student\\_resources/](https://moodle.info.yorku.ca/student_resources/)

**Term:** Fall 2024

**Prerequisite / Co-requisite:** Prerequisite: AP/ECON 1530 3.00 and AP/ECON 1540 3.00 or equivalents.

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**Course Instructor/TA**

Instructor: Kin Chung Lo  
E-mail: [kclo@yorku.ca](mailto:kclo@yorku.ca)

TA: TBA

**Time and Location**

Lectures            Wednesday 11:30pm – 2:30pm, HNE 037

Office hours        by appointment

**Course Description and Objectives:**

This course is an undergraduate level introduction to game theory and strategic thinking. It introduces the theory of non-cooperative games with emphasis on economic applications. Game theory is the study of multi-person decision problems where action of each decision maker (player) influences payoffs of others. In such environments, optimal decision may require strategic thinking; how one's action will influence the incentives of other players and whether others are aware of this interconnection. Success in this course requires strong analytical and logical thinking and the habit of drawing conclusions based on qualitative information. The course requires a working knowledge of calculus (for example, functions of one or several variables, derivatives), probability (for example, random variables, probability distributions, conditional probabilities, expectations) and optimization. At the end of the course, students should be able to formulate any strategic interaction as a game form, understand solution concepts in normal and extensive form games, and develop analytical and problem-solving skills to analyze games.

## Required Textbook

Robert Gibbons (1992): *Game Theory for Applied Economists*. Princeton University Press

## Supplementary Textbooks

Giacomo Bonanno (2018): *Game Theory*. Kindle Direct Publishing

Martin Osborne (2004): *An Introduction to Game Theory*. Oxford University Press

## Organization of the Course (Topics):

The main structure of the course follows the textbook *Game Theory for Applied Economists* by Robert Gibbons. We will cover static games of complete information, dynamic games of complete information, static games of incomplete information, and dynamic games of incomplete information.

## Evaluation

There will be a midterm exam and a final exam. The midterm exam will be held on Wednesday, October 23. The final exam will be scheduled by the registrar's office during the official exam period, December 5-20. The final exam will cover the material from the whole course. The midterm exam counts for 30% and the final exam counts for 70% if the mark on the midterm exam is higher than the mark on the final exam. Otherwise, the final exam counts for 100%. There will be no makeup for missed midterm exam. A missed midterm will automatically make the final exam worth 100%. Final course grades could be further adjusted to conform to program or faculty grades distribution profiles.

## Important Course Information for Students

All students are expected to familiarize themselves with the following information, available on the Senate Committee on Academic Standards, Curriculum & Pedagogy webpage (see Reports, Initiatives, Documents) - <https://www.yorku.ca/secretariat/policies/>

- Senate Policy on Academic Honesty and the Academic Integrity Website
- Ethics Review Process for research involving human participants
- Course requirement accommodation for students with disabilities, including physical, medical, systemic, learning and psychiatric disabilities
- Student Conduct Standards
- Religious Observance Accommodation

## Course ADD/Drop Deadlines

<https://registrar.yorku.ca/enrol/dates>