

Syllabus

ECON 0200 Game Theory Principles

Summer 2025

Logistics

Instructor	Jun Hyun Ji (<i>Jun Hyun is my first name. You can also call me Jun, read as 'June'.</i>)
Instructor Email	juj25@pitt.edu
Office Hours	2:00 – 4:00pm Tuesday & Thursday (location to-be-announced)
Lectures	6:00 – 9:15pm Tuesday & Thursday —(First day of class: 6/26, Thu)
Classroom	Hybrid★ – (In-person) 4940 Wesley W Posvar Hall – (Online) a link to Zoom to-be-announced
Midterm Exam	7/15 (Tue) 6:00 – 7:00pm
Final Exam	8/5 (Tue) 8:00 – 9:15pm

- ★ This is a hybrid course. Participation is required each week during the scheduled class times. Students may attend either in person or via Zoom. Students who choose to attend via Zoom must have reliable internet access and sufficient bandwidth to participate via Zoom with sound and audio. Zoom attendance must take place in an academic environment—for example, attending while riding a bus or walking outside does not count as valid participation. To help foster an interactive class atmosphere, students attending via Zoom are expected to keep their cameras on during class.

Course Description

In economics, a *game* refers to a situation where intelligent rational decision-makers influence each other's welfare. In a game, each decision-maker is aware that their choices not only determine their own welfare but also affect the welfare of others, and vice versa. The essence of a game lies in the common knowledge of this interdependence among participants. Hence, the choices made in a game are referred to as *strategies*. Game theory is the study of how people make decisions in games where interdependence exists and strategic thinking is necessary. Countless real-world situations require strategic thinking: auctions, bargaining over the price of a used car, competition between smartphone brands, design of insurance policies, and even playing rock-paper-scissors.

This introductory course to Game theory is designed for students without prior experience in the field, requiring no advanced mathematical knowledge beyond algebra. The curriculum focuses on introducing foundational concepts and learning through specific examples to understand and

predict the outcomes of various strategic interactions, rather than deriving general analytical results. Students will develop the skills to describe real-world problems as games, using the tools and concepts taught in class. While a solid mathematical background provides an advantage (since Game theory *is* the study of mathematical models), it is neither necessary nor sufficient for success in this course.

Class Communications

The course website is available in **Canvas**¹: <https://canvas.pitt.edu/>. All course materials including the lecture notes and announcements will be posted here. It is the students' responsibility to monitor **Canvas** regularly.

Textbook

There is no single textbook that perfectly matches the course content. Your evaluation will be based on your understanding and application of the material presented in the lecture material on slides, homework problem sets, and handouts (e.g., solutions to HW problem sets). You may consult the following textbooks whenever you find them helpful. A classical undergraduate reference is *Strategy: An Introduction to Game Theory* by Joel Watson (3rd edition, W.W. Norton & Company, 2013), which is widely used and well-regarded. I occasionally use exercise questions in *Games of Strategy* by Dixit, Skeath, and Reiley (4th edition, W.W. Norton & Company, 2015).² For students seeking more technical guidance, see *Game Theory for Applied Economists* by Robert Gibbons (Princeton University Press, 1992).

Evaluation

Midterm Exam	25 points
Final Exam	25 points
Homework Problem Sets	25 points
In-class Quizzes & Exercises + Games	25 points
100 points	

Exams. All exams are closed books.* Exams will be applications of the concepts learned in class to particular games designed to test your understanding of the material. Exams can be re-graded as long as the appeal is submitted within one week after the grades were posted. Make-up exams will not be offered. However, students who inform the instructor of a *verifiable* scheduling conflict in advance may, at the instructor's discretion, be allowed to forgo a midterm and have the final

¹ The **Canvas** LMS platform was built using the most modern HTML and CSS technologies, and is committed to W3C's Web Accessibility Initiative and [Section 508](#) guidelines. Specific details regarding individual [feature compliance](#) are documented and updated regularly.

² The fourth and fifth editions are largely similar, but the fourth is typically more affordable. You can buy the textbook/eBook new or used, or rent it.

exam count as 50 points. In this case, such students may be given extra questions on the final exam covering the material from the midterm.

* The exams will be administered in a hybrid format. Students may take the exam either in person in the classroom or virtually over Zoom. Those taking the exam virtually must have their cameras turned on for the entire duration of the exam. Cheating of any kind will result in a failing grade for the course. This includes, but is not limited to: communicating with others during the exam, consulting notes or online resources, or accessing any material beyond the exam itself. A basic calculator is allowed.

Homework. Five homework problem sets will be assigned via **Gradescope**. Each assignment is due by noon on Tuesday. The first assignment is due on July 8. Late assignments will not be accepted. While group work is encouraged, it is crucial that each student submits their own, independently crafted answers. Note that homework assignments are heavily weighted in your overall grade to emphasize the importance of in-depth reasoning and continuous engagement over time. They are designed to reward the development of thoughtful, strategic thinking skills, rather than the speed at which you perform mathematical operations under time pressure.

For **Gradescope** (<https://www.gradescope.com>), download its app: **Android** or **iOS**. Your **Gradescope** login ID is your university email, and your password can be changed [here](#). The same link can be used if you need to set your password for the first time. For help with **Gradescope**, click [here](#) for the help page.

In-class Quizzes, Exercises, and Games. In-class quizzes and exercises make up 20% of your total grade. Exercises may be done individually or in groups, while quizzes are individual tasks. We will also play games against each other. Each student wins extra points associated with the outcome of the game, contributing up to an additional 5% to your total grade. Note that significant points will be awarded purely for participation in in-class exercises (e.g., 50% participation and 50% accuracy). Quizzes are graded solely on accuracy.

***Submitting Handwritten Work** Students are expected to submit handwritten answers digitally by scanning their work and uploading it to either **Canvas** or **Gradescope**; physical copies will not be accepted, even if attending class in person. There is no requirement to use any scanning app—as long as the image clearly shows your work, a simple photo will suffice. In any class session, students should have access to blank paper or a tablet ready for writing, in case handwritten responses are needed for exercises, quizzes, etc. Submissions that are blurry, incomplete, or poorly formatted may not receive full credit. Illegible handwriting will not be graded.

***Grading.** We will use either **Canvas** or **Gradescope** (<https://www.gradescope.com>) for homework, quizzes, and exams. Grades and your overall progress will be available on **Canvas** throughout the term. When exams or homework assignments are graded on **Gradescope**, comments and feedback will be provided directly on that platform. Please review the feedback carefully on **Gradescope** before reaching out with questions about your grade or specific answers.

***Attendance.** Game theory is highly path-dependent: each class builds on the material from previous sessions. Regular attendance is essential to keep up with the course content. Please note that unexcused absences or excessive absences (even if excused) may result in a failing course grade or letter grade reduction.

Tentative Outline of the Course

The course outline provided is tentative and subject to change based on how the class progresses.

- **Week 1 (6/26)**
Introduction to Game theory.
- **Week 2 (7/1, 7/3)**
Normal form games and Nash equilibrium.
Pure vs. Mixed strategies and mixed strategy Nash equilibrium.
- **Week 3 (7/8, 7/10)** *HW Problem Set 1 due on 7/8 (Tue) 12:00 PM (Noon)
Extensive-form games with perfect information.
Extensive-form games with imperfect information.
- **Week 4 (7/15, 7/17)** *HW Problem Set 2 due on 7/15 (Tue) 12:00 PM (Noon)
**Midterm exam: 7/15 (Tue) 6:00 – 7:00pm.*
Extensive form games with imperfect information (continued).
Midterm review session.
- **Week 5 (7/22, 7/24)** *HW Problem Set 3 due on 7/22 (Tue) 12:00 PM (Noon)
Repeated games and applications.
- **Week 6 (7/29, 7/31)** *HW Problem Set 4 due on 7/29 (Tue) 12:00 PM (Noon)
Games with incomplete information I.
Games with incomplete information II.
- **Week 7 (8/5)** *HW Problem Set 5 due on 8/5 (Tue) 12:00 PM (Noon)
Games with incomplete information and applications.
**Final exam: 8/5 (Tue) 8:00 – 9:15pm.*

Academic Integrity

Students in this course will be expected to comply with the University of Pittsburgh's [Policy on Academic Integrity](#). Any student suspected of violating this obligation for any reason during the semester will be required to participate in the procedural process, initiated at the instructor

level, as outlined in the University Guidelines on Academic Integrity. This may include, but is not limited to, the confiscation of the examination of any individual suspected of violating University Policy. Furthermore, no student may bring any unauthorized materials to an exam, including dictionaries and programmable calculators.

To learn more about Academic Integrity, visit the [Academic Integrity Guide](#) for an overview of the topic. For hands-on practice, complete the [Academic Integrity Modules](#).

Disability Services

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and [Disability Resources and Services](#) (DRS), 140 William Pitt Union, (412) 648-7890, drsrecep@pitt.edu, (412) 228-5347 for P3 ASL users, as early as possible in the term. DRS will verify your disability and determine reasonable accommodations for this course.

Statement on Classroom Recording

To ensure the free and open discussion of ideas, students may not record classroom lectures, discussion and/or activities without the advance written permission of the instructor, and any such recording properly approved in advance can be used solely for the student's own private use.