

# ECON 420/520: Game Theory

Oregon State University

Winter 2021

## Instructor

Michael Jerman

- Remote office hours: By appointment
- Email: michael.jerman@oregonstate.edu
- Zoom Personal Meeting ID: 297-626-2177

## Course Structure

Due to current quarantine restrictions, this course will be 100% online. The scheduled meeting time (Tu/Th 8:00am–9:50am) will be used for live-streamed lectures and online group activities.

## Technology Requirements

To access Canvas, the library, and communicate via email, you will need a way to access the web/apps on a phone, tablet, or computer using cell or internet access. For office hours, you are welcome to connect via Zoom with any device, or call in with a landline phone (it can be helpful to screen share in Zoom, but is not necessary). Live-streamed lectures will utilize Zoom. The links to the Zoom lectures will be provided on Canvas. To participate in Zoom classes, you will benefit from a computer with a camera and microphone. You can also participate with a cell phone with the Zoom app, or even just with a landline phone.

## Course Description

Throughout much of the history of economics the discipline focused on matters of decision theory. What goods and services should consumers buy to maximize their utility subject to their budget constraints? What products should firms make, how should they make them, and how many should they make?

In the mid-twentieth century it became clear that many economic decisions had strategic dimensions: That is, outcomes depended not only on the choices of agents, but on the choices of other agents as well. This requires all of the involved agents (or players) to think about what their counterparts care about, predict what they are going to do, and respond accordingly. Game theory is the study of these interactions

## Learning Outcomes

Upon completion of the course, students will:

- Gain knowledge of the fundamental principles of game theory
- Become familiar with basic classes of games
- Apply mathematical skills to solve for equilibrium
- Recognize real-world applications and limitations of game theory

Additional learning outcome for Econ 520:

- Apply game theory analysis to novel, real-world situations

## Prerequisites

The prerequisite for this course is ECON 311 or ECON 411 (intermediate micro).

## Textbook

The textbook for this course is *Games of Strategy* by Avinash Dixit, Susan Skeath (some editions have other coauthors). Editions 3, 4, and 5 are acceptable, and can be found online at low cost. I strongly recommend that you do *not* pay full price for this textbook!

## Canvas

All assignments and grades will be posted on Canvas ([canvas.oregonstate.edu](https://canvas.oregonstate.edu)). This is the official website for the course, and you will be responsible for any and all information that is posted there. Therefore if you have any difficulties accessing Canvas it is imperative that you resolve them as quickly as possible by contacting the Canvas support at [canvas@oregonstate.edu](mailto:canvas@oregonstate.edu).

## Attendance

Participation in periodic in-class exercises will be recorded and may account for up to 10% extra credit.

## Homework

There will be weekly homework assignments throughout the term, assigned and submitted on Canvas. No late assignments will be accepted. You are encouraged to work together in groups, but each person must submit their own assignment.

## Exams

There will be one midterm examination and one comprehensive final examination, both assigned and submitted on Canvas. There will be no time limit on the exams, but they will need to be submitted before the due date and time. No makeup exams will be given. If the midterm is not submitted due to a *documented* emergency, the weight of the exam will be placed on final. An documented emergency that causes the final to not be submitted will result in an incomplete for the course. Failure to submit any exam for a reason other than a documented emergency will result in a score of zero.

## Additional Assignment for Econ 520 Students

In addition to the above requirements, students enrolled in Econ 520 must submit a case study on a topic of your choosing, to be approved by me. The final case study will consist of a written paper, not to exceed 12 pages, double-spaced (including tables and figures). Details of the case study assignment will be provided on Canvas.

## Grades

Your grade will be calculated based on the following weights:

- Econ 420:
  - Homework: 50%
  - Midterm: 20%
  - Final: 30%
- Econ 520:
  - Homework: 40%
  - Midterm: 15%
  - Final: 25%
  - Case Study: 20%

The *minimum* letter grade that you will receive based on your weighted total of points earned is given below:

A	A-	B+	B	B-	C+	C	C-	D+	D	D-
93	90	87	83	80	77	73	70	67	63	60

## Diversity Commitment

The School of Public Policy in the College of Liberal Arts is a community that includes and values the voices of all people. As such, we recognize the social barriers that have systematically marginalized and excluded people and communities based on race, ethnicity, gender, sexual identity, socioeconomic background, age, disability, national origin and religion. We are committed to the equity of opportunities, and strive to promote and advance diverse communities. We value and proactively seek genuine participation from these historically under-represented and underserved groups, and recognize them as an essential component of creating a welcoming and rich academic, intellectual, and cultural environment for everyone.

## Statement Regarding Students with Disabilities

Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval, please contact DAS immediately at 541-737-4098 or at <http://ds.oregonstate.edu>. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

## Religious Holiday Statement

Oregon State University strives to respect all religious practices. If you have religious holidays that are in conflict with any of the requirements of this class, please see me immediately so that we can make alternative arrangements.

## Academic Integrity and Expectations for Student Conduct

The Student Conduct Code establishes community standards and procedures necessary to maintain and protect an environment conducive to learning, in keeping with the educational objectives of Oregon State University. Academic or Scholarly Dishonesty is prohibited and considered a serious violation of the Student Conduct Code. It is defined as an act of deception in which a Student seeks to claim credit for the work or effort of another person, or uses unauthorized materials or fabricated information in any academic work or research, either through the Student's own efforts or the efforts of another. See the following link for additional information: <https://beav.es/codeofconduct>.

## Academic Integrity

Students are expected to comply with all regulations pertaining to academic honesty. For further information, visit Student Conduct and Community Standards, or contact the office of Student Conduct and Mediation at 541-737-3656.

## Reach Out for Success

University students encounter setbacks from time to time. If you encounter difficulties and need assistance, it's important to reach out. Consider discussing the situation with an instructor or academic advisor. Learn about resources that assist with wellness and academic success at [oregonstate.edu/ReachOut](http://oregonstate.edu/ReachOut). If you are in immediate crisis, please contact the Crisis Text Line by texting OREGON to 741-741 or call the National Suicide Prevention Lifeline at 1-800-273-TALK (8255)