

## Economics 485B: Game Theory with Applications to Economics University of Washington, Winter 2022

**Instructor:** Victoria Ziqi Hang

**Lectures:** MW 8:30-10:20 am, SAV 138

Join URL: <https://washington.zoom.us/j/94750029557>

**Office Hours:**

MW after class,

M 3:30 – 4:30 pm, Join URL: <https://washington.zoom.us/j/99636562275>

**Email:** [zqih@uw.edu](mailto:zqih@uw.edu)

### ***Course Description***

We will introduce several models and tools to analyze rational and non-cooperative decision-making in static or dynamic game environments under either complete or incomplete information, review equilibrium concepts and their properties, and discuss some applications of non-cooperative game theory in economic analysis. We will mainly follow Gibbons' textbook.

At the end of the course, students should be able to build games that represent common economic situations, understand standard economic models based on simple game theory, and apply standard solution concepts to static games, dynamic games, repeated games, and games of incomplete information.

### ***Prerequisites***

Econ 300. Students are also expected to be comfortable with using elementary partial derivatives and solving systems of equations. Please reconsider this class if you are not.

### ***Course Page***

<https://canvas.uw.edu/courses/1554872>

You are responsible for regularly checking it and staying on top of the announcements, including the readings and homework schedules.

### ***Course Organization and Teaching Model:***

This is primarily a traditional lecture course, with problem sets and exams—Office hours will be offered online. Assignments must be submitted via Canvas.

Week 1: remote

Week 2 - : TBA

### ***Course Textbook***

Required:

- *Game Theory for Applied Economists*, by Robert Gibbons, Princeton University Press.

Recommended:

- *The Art of Strategy: A Game Theorist's Guide to Success in Business and Life*, by Avinash Dixit and Barry Nalebuff, Norton, 2010
- *Thinking Strategically*, by Avinash Dixit and Barry Nalebuff, Norton, 1993
- *An Introduction to Game Theory*, Osborne, Oxford 2004
- *A Course in Game Theory*, Osborne and Rubinstein, MIT 1994

### **Problem Sets and Tests**

These will be graded on clarity and accuracy. Please box your final answers and clearly show the steps.

5 Problem Sets			25%
Midterm 1	Jan. 24	8:30 – 10:00 am	15%
Midterm 2	Feb. 16	8:30 – 10:00 am	25%
Final Exam	Mar. 15	8:30 – 10:00 am	35%

All dates except for the final exam are subject to change. Please make sure to follow my updates closely.

#### Problem Sets:

They do not need to be typed but do need to be easy to read. You can choose to scan your handwritten answers and upload pdf files on Canvas.

#### Tests:

All tests are **cumulative**. Only non-graphing, non-programmable calculators will be allowed.

Washington state law requires that UW develop a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The UW's policy, including more information about how to request an accommodation, is available at Religious Accommodations Policy

(<https://registrar.washington.edu/staffandfaculty/religious-accommodations-policy/>).

Accommodations must be requested within the first two weeks of this course using the Religious Accommodations Request form

(<https://registrar.washington.edu/students/religious-accommodations-request/>).

### **Academic integrity**

Academic integrity is the cornerstone of the Department's rules for student conduct and evaluation of student learning. Students accused of academic misconduct will be referred directly to the Office of Community Standards and Student Conduct for disciplinary action pursuant to the Student Conduct Code and, if found guilty, will be subject to sanctions. Sanctions range from a disciplinary warning, to academic probation, to immediate dismissal for the Department and the University, depending on the seriousness of the misconduct. Dismissal can be, and has been, applied even for first offenses. Moreover, a grade of zero can be assigned by the instructor for the course.

Behavior that constitutes academic misconduct includes but is not limited to cheating on exams or quizzes (copying answers from others, using unauthorized materials, a student not taking their own quiz/exam, etc.), copying homework answers, plagiarism.

You may read more at <http://www.washington.edu/cssc/facultystaff/academic-misconduct/>.