

# **Econ 485 A: Game Theory**

## **Autumn 2019**

Instructor: Justin Downs

Lecture: Tuesdays and Thursday, 8:30am-10:20am, Smith 105

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Office Hours: TBD

### **Prerequisites**

Econ 300, grade of 2.0 or higher.

### **Required Materials**

Game Theory for Applied Economists, Robert Gibbons

### **Optional Materials**

Game Theory: An Introduction, Steve Tadelis

Games of Strategy, A. Dixit and S. Skeath

Game Theory, D. Fudenberg and J. Tirole

Playing for Real, Ken Binmore

Games, Strategies, and Decision Making, Joseph Harrington

### **Topics**

1. Static Games of Complete Information
2. Dynamic Games of Complete Information
3. Repeated Games
4. Static Games of Incomplete Information
5. Dynamic Games of Incomplete Information

### **Learning Goals**

By the end of the course, students should be able to:

1. Understand the logic and intuition of standard game-theoretic models
2. Build games that represent common real world and economic situations.
3. Apply the tools and concepts of game theory to these models to obtain and critique its predictions

### **Reading** (dates are approximate)

1. Static Games of Complete Information: Gibbons Chapter 1 (9/26-10/10)
2. Dynamic Games of Complete Information: Gibbons Chapter 2 Sections 2.1, 2.2, and 2.4 (10/10-10/24)
3. Repeated Games: Gibbons Chapter 2 Section 2.3 (10/24-11/5)
4. Static Games of Incomplete Information: Gibbons Chapter 3 (11/12-11/21)
5. Dynamic Games of Incomplete Information: Gibbons Chapter 4 (11/21-12/5)

### **Grading**

*Problem Sets - 30%* - There will be **6** problem sets due on 10/10, 10/17, 10/24, 10/31, 11/21, 12/5. Among those **6**, the highest **5** scores will be counted at 6% each.

Problem Sets are to be turned in at the beginning of the class they are due. Answers are to be written on *plain white paper*, one side only, with each new question started on a new page, numbered, and the pages stapled. Problem Sets that are turned in without meeting these requirements are subject to deductions.

*Quiz - 10%* - There will be a short quiz on Thursday, 10/15 in class. It will last about half the class period and cover all material covered from the start of the course.

*Midterm Exam - 30%* - There will be a midterm exam on Thursday, 11/7 in class. This exam will cover all material covered from the start of the course.

*Final Exam - 30%* - There will be a final exam on Tuesday, 12/10, from 10:30am-12:20pm in Smith 105. This exam will cover all material since the midterm exam.

### **Student Athletes**

Student athletes who have conflicts with attending any lecture or submitting any assignment should submit a list of such conflicts along with a letter from the athletics department by **Tuesday, October 1**. I will reasonably accommodate any student athlete who follows this guideline.

### **Academic Accommodations**

The University of Washington is committed to providing access and reasonable accommodation in its services, programs, activities, education and employment for individuals with disabilities. For information or to request disability accommodation contact: Disability Resources for Students (Seattle campus, matriculated students) at (206) 543-8924/V, (206) 543-8925/TTY, (206) 616-8379 (FAX), or e-mail at [uwdss@uw.edu](mailto:uwdss@uw.edu)

### **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, and plagiarism.

### **Miscellaneous**

Lecture notes will NOT be distributed. If you miss class, it is your responsibility to contact a classmate and get lecture notes from them.

The text and lectures are complementary goods. Some material in the text will not be covered in lecture, and some material from lecture is not available in the text.

No laptops will be allowed for note-taking in class. This rule is to prevent students from distracting themselves and others with "non-class-related" uses, as well as to encourage detailed note-taking.

No calculators will be needed for exams *unless otherwise specified by me*. Questions will usually be written in such a way that all calculations can reasonably be completed by hand in the allotted time.

Students are **strongly** encouraged to ask questions and foster discussion in class. These questions and discussions are useful in helping us all understand economics better.