

**ECON 485 A: Game Theory with Applications to Economics
Winter 2016**

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Textbooks. The text for the course is:

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

Another text is available if you wish additional reading:

Games, Strategies, and Decision Making, Joseph E. Harrington, Jr., Worth Publishing.

Gibbons' book is more theoretical with a formal presentation of game theory. It is a good preparation for students who plan to go to grad school in economics. Harrington's text is at a more introductory level (despite the title) with lots of examples. These two complement each other. Both books are on reserve in the Foster Library.

Assignments and Exams. The course will have four problem sets, and two closed-book exams. Each problem set covers a significant amount of material (especially the first one), and so leaving it until the night before it is due is not a good idea. Late problem sets are not accepted without prior permission and a *valid reason* (being busy does not count). Consulting with other students on problem sets is permitted, but every student must write up his or her own solutions. For all assignments and exams, the UW Student Conduct Code (WAC 478-120) and Economic Department Policy on Academic Conduct (http://econ.washington.edu/undergrad/academic_conduct/) applies.

Students with special needs (disabled students, students athletes and etc.) should send me your documents asap. More information is available online (<http://depts.washington.edu/uwdrs/>). If you cannot make the exams, the same course will be offered again in the Fall quarter.

Grade. The final grade in this course will break down as follows: problem sets (20%), exam one (30%), and exam two (50%).

Discussion. General questions about the course, the slides and the homework go to the discussion board in Canvas. You are encouraged to answer

each other's questions on Canvas, and I will check the site once a week. Posting the full solutions to questions in the problem sets is **NOT** allowed on Canvas. You can also ask these questions in class break or in my office hour. These math-related questions are much easier to explain face to face, and please don't ask them through email. You may contact me through email for other personal question, and I will respond to my email within 48 hours.

Economics Department's Policy on Academic Conduct 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.

Syllabus

- January 4: *Introduction to Nash Equilibrium*
- January 6: *Best Responses, Nash Equilibrium Continued*
- January 11: *Dominance and Iterative Dominance*
- January 13: *Mixed Strategies, Existence of equilibrium*
- January 18: **No class – holidays**
- January 20: **Problem Set 1 Due**
- January 20: *Applying Nash Equilibrium*
- January 25: *Extensive Form Games and Backward Induction*
- January 27: *Subgame Perfection, Extensive Form Games Continued*
- February 1: **Problem Set 2 Due**
- February 1: *Introduction to Repeated Games*

- February 3: *Repeated Games and Folk Theorems*
- February 8: **Exam One**
- February 10: *Games of Incomplete Information*
- February 15: **No class – holidays**
- February 17: *Bayesian Equilibrium and Auctions*
- February 22: *Bayesian Equilibrium Continued*
- February 24: **Problem Set 3 Due**
- February 24: *Incomplete Information in the Extensive Form*
- February 29: *Perfect Bayesian Equilibrium and Signaling*
- March 2: *Perfect Bayesian Equilibrium*
- March 7: **Problem Set 4 Due**,
- March 7: *Review Session*
- March 9: **Exam Two**