ECON 485 A: Game Theory with Applications to Economics
Fall 2017

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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 future quarters.

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

- September 28: *Introduction to Nash Equilibrium*
- October 3: *Best Responses, Nash Equilibrium Continued*
- October 5: *Dominance and Iterative Dominance*
- October 10: *Mixed Strategies, Existence of equilibrium*
- October 12: *Applying Nash Equilibrium*
- October 17: **Problem Set 1 Due**
- October 17: *Applying Nash Equilibrium II*
- October 19: *Extensive Form Games and Backward Induction*
- October 24: *Subgame Perfection, Extensive Form Games Continued*
- October 26: *Introduction to Repeated Games*
- October 31: **Problem Set 2 Due**

- October 31: *Repeated Games and Folk Theorems*
- November 2: *Repeated Games, Learning, and Imperfect Observation*
- November 7: **Exam One**
- November 9: *Games of Incomplete Information*
- November 14: *Bayesian Equilibrium and Auctions*
- November 16: *Bayesian Equilibrium Continued*
- November 21: *Incomplete Information in the Extensive Form*
- November 23: **No class – holidays**
- November 28: **Problem Set 3 Due**
- November 28: *Perfect Bayesian Equilibrium and Signaling*
- November 30: *Perfect Bayesian Equilibrium*
- December 5: **Problem Set 4 Due**,
- December 5: *Review Session*
- December 7: **Exam Two**