

University of Pennsylvania Department of Economics
Econ 212: Game Theory
Fall 2016

Lectures	Monday & Wednesday 10:30-12:00 (GLAB 101).
Instructor	Deniz Selman (denizs@econ.upenn.edu) <i>Office Hours:</i> Tuesday 5:00-6:00 and by appointment (McNeil 554).
TA	Ömer Faruk Koru (okoru@sas.upenn.edu). <i>Office Hours:</i> Tuesday 2:00-3:30 (McNeil 472).
Prerequisites	Econ 101 (Intermediate Micro) <i>and</i> Math 114, 115 or 116 (Multivariate Calculus) in a <i>previous</i> semester. For Wharton students, the (calculus-based) honors version of BEPP 250 can be used to fulfill the Econ 101 prerequisite. The regular BEPP 250 course does not count as a substitute for Econ 101. This policy does not apply to students who do not have a Wharton affiliation.
Textbook	Watson, J., <i>Strategy: An Introduction to Game Theory</i> , Norton, 3rd edition, 2013.
Other Texts	Dixit, A. and S. Skeath, <i>Games Of Strategy</i> , Norton, 3rd edition, 2009. Gibbons, R., <i>Game Theory for Applied Economists</i> , Princeton University Press, 1992. The course will roughly follow the sequence in Watson, though portions of the material will be treated differently in lectures. Dixit and Skeath provides a more user-friendly, conversational explanation of most concepts. For a slightly more advanced treatment and economic applications, you can consult Gibbons.
Lectures	I will primarily teach by writing on the blackboard. Please make arrangements to borrow a friend's notes if you miss a lecture. The course is quite self-contained and we will cover some topics in class that are not covered in Watson. Also, regardless of whether it appears in Watson, you are responsible for all material covered in lectures and problem sets. <i>The use of laptops and other electronic devices is not permitted during lectures.</i>
Problem Sets	There will be approximately eight problem sets assigned and collected for grading during the semester. Problem sets will be posted on Canvas and due at the beginning of lecture (no later than 10:35 am) on the day they are due (almost always on Wednesdays). <i>No late problem sets will be accepted.</i> Your lowest problem set grade will be dropped and the average of the others will constitute the problem set portion of your grade. NOTE: Working on problem sets diligently is the most effective way to prepare you for both exams and quizzes. I recommend you first work on your own and then meet to discuss the problems in groups. However, each student must turn in his or her own answers. Please write legibly and state which classmates you worked with on your submitted copy.
Quizzes	There will be four announced quizzes during the semester. Quizzes will be announced at least one week prior to the quiz date. There will be no quizzes on dates included in the university's list of religious holidays. NO MAKE-UP QUIZZES: <i>You will receive a zero for any quiz that you miss for any reason.</i> To accommodate students who must miss a quiz, your lowest quiz grade will be dropped and the average of the other three quizzes will constitute the quiz portion of your grade.
Exams	<i>First Midterm Exam: Wednesday 5 October (in class, beginning at 10:35 am sharp).</i> <i>Second Midterm Exam: Wednesday 2 November (in class, beginning at 10:35 am sharp).</i> <i>Final Exam: Thursday 22 December (9:00-11:00).</i> MAKE-UP POLICY FOR EXAMS: Only students who contact me <i>before</i> an exam <i>and</i> provide a written excuse will be eligible to take a make-up exam. Students who miss an exam and are not eligible to take a make-up exam will receive a grade of zero on that exam. OTHER POLICIES & PROCEDURES: Apart from these stated specifics regarding quizzes and the make-up policy for exams, this course complies with all departmental policies as posted on the departmental website at: http://economics.sas.upenn.edu/undergraduate-program/course-information/guidelines/policies .
Scheduling misc.	There will be <i>no lecture</i> on <i>Monday 7 November</i> and <i>Wednesday 23 November</i> .
Grading	Problem Sets (10%), Quizzes (18%), Midterm Exams (21% each), Final Exam (30%)

Course Outline **1) Static Games with Complete Information**

Normal Form Representation of a Game
Dominant and Dominated Strategies
Rationalizability
Nash Equilibrium
Nash Equilibrium in Mixed Strategies

2) Dynamic Games with Complete Information

Extensive Form Representation of a Game
Backward Induction
Subgame Perfect Equilibrium
Repeated Games

3) Static Games with Incomplete Information

Bayesian Nash Equilibrium
Application: Auctions

4) Dynamic Games with Incomplete Information

Perfect Bayesian Equilibrium
Application: Job Market Signaling

5) Social Choice and Welfare

Gibbard-Satterthwaite Impossibility Theorem