

Economics 451: Game Theory

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Office Hours: Wed 4-5 PM, Thurs 10-11am, and by appointment
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Course Description and Goals

- This course will introduce upper-level undergraduates to game theory, which is now a vital methodology in many disciplines, including economics, political science, biology, computer science, and engineering.
- You will learn to analyze decision making in situations in which the outcome depends on the actions of multiple decision makers (people, firms, governments, etc.).
- The class will include a number of experiments. The goal of the experiments is to encourage you to actively participate in your learning, and to provide hands-on experience.

Textbook

- *Strategy: An Introduction to Game Theory* by Joel Watson (2013, W. W. Norton & Company, ISBN 9780393918380).

Course Materials

- Announcements, updated schedules, assignments, class slides, etc. will be posted on **Blackboard**.
- *Students are responsible to get information from the web site in a timely manner.*
- We will use **MobLab** (<https://www.moblab.com/>) for the in-class experiments. Krannert has a school-wide license, so you do not need to purchase an individual account. However, you do need to create an account.

Attendance and class participation

- Participation in classroom discussions is strongly encouraged!
- Use of cell phones and computers is **limited to class-related activities**.
- Students are expected to arrive to class on time. Late arrival to class may result in lower participation grade.
- Students anticipating an excused absence due to illness must provide a physician's certification of illness and notify the instructor by emails in advance.

Assessments

Exams	60%
Homework and Quizzes	30%
Participation and experiments	10%

- **Midterm exams** will be held in the **evenings on 9/27 at 6.30-7.30pm in LILY 1105 and 11/2 at 6.30-7.30pm in EE 129**
- All three exams are equally weighted. No “make-up” exams will be given.

- **Quizzes** will be given randomly throughout the semester.
- **HWs** are due at 11.59pm the night before class through Blackboard. Late submission of HWs will not be accepted. No “make-up” HWs will be assigned or accepted except for cases of a severe documented illness or bereavement as noted above.
- Reading assignments do not require submission. However, students should finish the assignments before due time.

Class Attendance Statement:

Purdue University policy states that all students are expected to be present for every meeting of classes in which they are enrolled. All matters relative to attendance, including the make-up of missed work, are to be arranged between the student and the instructor. Only the instructor can excuse a student from classes or course responsibilities. In the case of an illness, accident, or an emergency, the student should make direct contact with the instructor as soon as possible, preferably before the class. If a student will be absent for more than five days, the student or his/her representative should notify the Office of the Dean of Students (765-494-1254) as soon as possible. Be advised, the student may be asked to provide documentation from an authorized professional or agency that supports an explanation for the absence.

Purdue University Code of Honor

The purpose of the Purdue University academic community is to search for truth and to endeavor to communicate with each other. Self-discipline and a sense of social obligation within each individual are necessary for the fulfillment of these goals. It is the responsibility of all Purdue students to live by this code, not out of fear of the consequences of its violation, but out of personal self-respect. As human beings we are obliged to conduct ourselves with high integrity. As members of the civil community we have to conduct ourselves as responsible citizens in accordance with the rules and regulations governing all residents of the state of Indiana and of the local community. As members of the Purdue University community, we have the responsibility to observe all University regulations.

To foster a climate of trust and high standards of academic achievement, Purdue University is committed to cultivating academic integrity and expects students to exhibit the highest standards of honor in their scholastic endeavors. Academic integrity is essential to the success of Purdue University's mission. As members of the academic community, our foremost interest is toward achieving noble educational goals and our foremost responsibility is to ensure that academic honesty prevails. *For additional information on academic integrity, see* http://www.purdue.edu/cie/teachingtips/academic_integrity/index.html. In this course, if you are caught cheating, or knowingly helping someone else to cheat, you will receive zero on that particular assignment. If you are caught cheating more than once you will fail the course. If you do not know what cheating is please see http://www.purdue.edu/cie/teachingtips/academic_integrity/index.html.

Remember the Purdue Honors Pledge: <https://www.purdue.edu/provost/teachinglearning/honor-pledge.html>

Emergency Statement:

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances.

Adverse Weather Conditions

The University takes into consideration local and regional weather conditions, travel conditions and decisions by local school districts when deciding whether to delay, dismiss or cancel classes and/or routine operations for an entire campus due to Adverse Weather Conditions. When conditions warrant, a decision to delay, dismiss, or cancel classes and/or routine operations is coordinated with appropriate local city, county or state officials and communicated to faculty, staff and students of the affected campus. The decision to delay, dismiss or cancel classes and/or routine operations for the West Lafayette campus is made by the President and for each of the Regional Campuses it is made by the Chancellor. The President and the Chancellors will each assign a designee for such purposes to act in his or her absence.

Adaptive Programs Statement:

Students with disabilities must be registered with Adaptive Programs in the Office of the Dean of Students before classroom accommodations can be provided. If a student is eligible for academic accommodations because the student has a documented disability that will impact the student's work in this class, please schedule an appointment with the instructor to discuss the needs.

CAPS Information:

Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, such individuals should contact Counseling and Psychological Services (CAPS) at (765)494-6995 and <http://www.purdue.edu/caps/> during and after hours, on weekends and holidays, or through its counselors physically located in the Purdue University Student Health Center (PUSH) during business hours.

Tentative Schedule

Date	#	Class Contents	Reading (Ch.)
8/22/2017	1	Introduction to Game Theory	1
8/24/2017	2	The Extensive Form; The Normal Form	2, 3
8/29/2017	3	Beliefs; Expected Payoffs; Assumptions	4, 5
9/31/2017	4	Dominance and Best Response	6, 7
9/5/2017	5	Location Game; Strategic Complementarities	8
9/7/2017	6	Nash Equilibrium	9
9/12/2017	7	Oligopoly and Voting	10
9/14/2017	8	Mixed-strategy Nash Equilibrium	11, 12
9/19/2017	9	Contracting	13
9/21/2017	10	Extensive Form	14
9/26/2017	11	Review	
9/27/2017		Evening Exam 1	
9/28/2017	13	Sequential Rationality	15
10/3/2017	14	Subgame Perfection	15
10/5/2017	15	Topics in Industrial Organization	16
10/10/2017		NO CLASS: OCTOBER BREAK	
10/12/2017	16	Parlor Games	17
10/17/2017	17	Bargaining	18
10/19/2017	18	Bargaining Games	19
10/24/2017	19	Negotiation Equilibrium	20
10/26/2017	20	Hold-up Problem	21
10/31/2017	21	Review	
11/2/2017	22	NO CLASS: MAKE-UP FOR EVENING EXAM	
11/2/2017		Evening Exam 2	
11/7/2017	23	Repeated Games	22
11/9/2017	24	Collusion	23
11/14/2017	25	Random Events and Incomplete Information	24
11/16/2017	26	Bayesian Nash Equilibrium and Rationalizability	26
11/21/2017		NO CLASS: MAKE-UP FOR EVENING EXAM	
11/23/2017		NO CLASS: THANKSGIVING BREAK	
11/28/2017	27	Market for Lemons	27
11/30/2017	28	First-price and Second-price Auctions	27
12/5/2017	29	All-pay Auctions	27
12/7/2017	30	Review	
TBD		Exam 3	