

# ECON 505: Introduction to Game Theory

University of Illinois at Urbana-Champaign  
College of Liberal Arts & Sciences  
Department of Economics

Jorge Lemus  
1000 Lincoln Hall

Fall 2021

Tuesday and Thursday: 2:00 PM - 3:20 PM

- The course will be in person. Students must adhere to Covid-19 University policies: <https://covid19.illinois.edu/guides/students/>

## **Communication:**

**Office:** 213 David Kinley Hall

**Office Phone:** (217) 244 7468

**E-mail:** [jalemus@illinois.edu](mailto:jalemus@illinois.edu)

**Office Hours:** Friday 2:00pm, by appointment.

## **Course Description:**

Applications of game theory are ubiquitous in the real world. The following are just some examples: A firm bargains with its workers; two firms compete with each other in a market; a group of countries decide how much resources to spend for defense against a common enemy; candidates for political office decide which political platforms to propose; oil companies decide how much to bid for an offshore oil tract of uncertain value in a sealed-bid auction. In situations such as these, the actions of an agent have consequences for other agents. For this reason, agents need to think strategically: What will my opponents do, and how does this influence my actions? Game theory is a framework to analyze strategic interaction between economic agents. In this course, we introduce game-theoretic concepts and apply them to a variety of topics.

## **References:**

The course is primarily based on the content presented during classes. Two good optional references are:

*Game Theory: An Introduction*. Steven Tadelis. Princeton University Press (2013)

*Game Theory for Applied Economists*. Robert Gibbons. Princeton University Press (1992)

## **Evaluations:**

Game Theory is a class that requires a lot of practice. During the class, we will cover a lot of material and many different concepts. Quizzes and homework are a good way to learn these new concepts and to stay up-to-date with all the material.

(30%) Homework

(20%) Quizzes

(15%) Midterm Exam 1: 2:00-3:20 p.m., Tuesday, September 28.

(15%) Midterm Exam 2: 2:00-3:20 p.m., Tuesday, November 9.

(20%) Final Exam: To be announced.

## **Topics covered in the Course:**

- (1) Introduction, Single Agent Decision Theory, Expected Utility.**
- (2) Static Games of Complete Information**
- (3) Dynamic Games of Complete Information**
- (4) Static Games of Incomplete Information**
- (5) Dynamic Games of Incomplete Information**
- (6) Information Economics and Selected Topics**

## **Assessment Policies**

### *Assignment Policy:*

All assignments are to be turned in at the beginning of the class in which they are due. Late assignments receive no credit. The assignment portion of your grade will be the average of all your assignment scores.

## **Academic Integrity:**

“The University has the responsibility for maintaining academic integrity so as to protect the quality of education and research on our campus and to protect those who depend upon our integrity.

*Expectations of Students.* It is the responsibility of each student to refrain from infractions of academic integrity, from conduct that may lead to suspicion of such infractions, and from conduct that aids others in such infractions. Students have been given notice of this Part by

virtue of its publication. Regardless of whether a student has actually read this Part, a student is charged with knowledge of it. Ignorance is not a defense.”

The University’s full academic integrity policy is available at:  
[http://studentcode.illinois.edu/article1\\_part4\\_1-401.html](http://studentcode.illinois.edu/article1_part4_1-401.html)

**Drop without a grade:**

Deadline to Drop without a grade of W:

<https://registrar.illinois.edu/academic-calendars/fall-2021-academic-calendar/>

**Final Exam Conflict Policy:**

From the University’s final exam policy:

- Any student having more than two consecutive final examinations is entitled to rescheduling as follows if he or she takes the following action no later than the last day of classes:
  - The student must investigate whether a conflict examination is being held at another time for any of the examinations involved.
  - If a conflict examination has been scheduled for any of the courses, the student must take one or more of these conflict examinations. If conflict examinations are offered for more than one course, the student must take the conflict for the course that has the largest number of students.
  - If no conflict examinations have been scheduled, the student must contact the instructor of the course having the largest number of students. The contact must be made no later than the last day of classes, and that instructor must provide a makeup examination.
  - Normally in a semester several combined-sections, conflict, and noncombined examinations are given at the same time. As a guide to resolving conflicts, an order of priority has been established within each examination period, and a student should resolve a conflict using the published examination schedules and the following priority guidelines.
    - National and state professional examinations (e.g., CPA, actuarial science, Architecture Registration Examination) take priority over campus final examinations. An instructor must offer a conflict examination to a student scheduled to take a national or state professional examination and a campus final examination at the same time.
    - A noncombined course examination has precedence over any combined-sections or conflict examination.
    - A department offering a combined-sections final examination must provide a conflict examination if required to accommodate student conflicts.

The University’s final exam policy is available at:  
[http://studentcode.illinois.edu/article3\\_part2\\_3-201.html](http://studentcode.illinois.edu/article3_part2_3-201.html)

**Emergency Response Recommendations:**

The university maintains guidelines for emergency responses. A list of recommendations when to evacuate and when to find shelter are available at:

[http://illinois.edu/cms/2251/general\\_emergency\\_response\\_recommendations\\_8\\_16\\_13\\_final.docx](http://illinois.edu/cms/2251/general_emergency_response_recommendations_8_16_13_final.docx)

Floor plans for specific buildings are available at:

<http://police.illinois.edu/emergencyplanning/floorplans/>

**Statement on Accommodations:**

To obtain disability-related academic adjustments and/or auxiliary aids, students with disabilities must contact the course instructor and the Disability Resources Educational Services (DRES) as soon as possible. To contact **DRES** you may visit 1207 S. Oak Street, Champaign, call 333-4603 (V/TTY), or email a message to [disability@uiuc.edu](mailto:disability@uiuc.edu).