
ECON 4930: INTRODUCTION TO GAME THEORY (SPECIAL TOPICS)

TERM:	Fall 2026
COURSE MEETINGS:	MWF 1:10–2:00 (Section 1)
CLASSROOM:	Davis-Shaughnessy Hall 373
INSTRUCTOR:	Dr. Anne Schaller
INSTRUCTOR E-MAIL:	anne.schaller@slu.edu
INSTRUCTOR OFFICE:	Davis-Shaughnessy Hall 369A
OFFICE HOURS:	M 2:00–3:30 & W 9:30–11:00 (or by appointment)
APPOINTMENTS:	Click here or email me to schedule

COURSE DESCRIPTION

This course provides an introduction to game theory, which uses mathematical frameworks to study strategic interaction, as well as its applications. Concepts from game theory are used extensively in biology, business, economics, international relations, law, politics, sociology, and a number of other fields.

PREREQUISITES

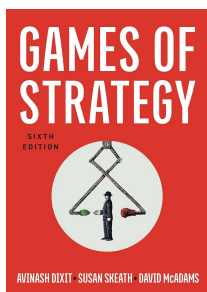
The prerequisite for this course is Principles of Economics (ECON 1900). Students should also be comfortable with basic mathematical reasoning. No calculus is required for this course, but elementary algebra and probability theory will be used regularly. No previous knowledge of game theory is required.

LEARNING OBJECTIVES

At the end of this course, students should be able to:

- Explain fundamental concepts in game theory.
- Represent strategic situations using game tables and game trees.
- Identify and interpret Nash, rollback, subgame-perfect, mixed-strategy, Bayesian Nash, and perfect Bayesian equilibria.
- Use game theory to analyze behavior in economic, political, and social settings.
- Explain key applications of game theory to repeated interactions, collective-action problems, auctions, and voting.

TEXTBOOK (OPTIONAL)



Title: *Games of Strategy*

Authors: Avinash Dixit, Susan Skeath, and David McAdams

Publisher: W.W. Norton & Company

Publication Date: 2025

Edition: Sixth (Prior editions are also fine)

ISBN-13: 978-1-324-08713-7

Available at: The Billiken Shop, [Amazon](#), or elsewhere online

TOPICS

Topic	Textbook Chapter(s)
Introduction	1, 2
Simultaneous Games	4
Sequential Games	3
Subgame-Perfect Equilibrium	6
Mixed Strategies	7
Incomplete-Information Games	8, 9
Repeated Games	10
Collective Action Games	11
Auctions	15
Elections and Voting	16

ASSIGNMENTS AND GRADING

- **In-Class Questions (5%):** Once every week to two weeks, I will ask you to answer a practice problem in class. You will pair up with another student and work through the problem(s) together. You will turn in one answer sheet as a pair and will both receive the same grade. I will drop your two lowest scores. No makeups will be given.
- **Participation (10%):** Regular participation is expected and rewarded. Attendance is important, but your participation grade depends on more than simply showing up to class. Being engaged (e.g., not on your phone) and volunteering substantive comments also matter a great deal. Preparing for class by doing the readings and participating in discussions on Perusall also affect your participation grade. A small number of excused absences will not negatively affect your participation grade.
- **Problem Sets (10%):** There will be several problem sets over the course of the semester, which I will distribute via Canvas on an approximately weekly basis. I strongly encourage you to form study groups and work together with classmates on problem sets. However, *each student must submit their own assignment*.
- **Mini Lesson (15%):** You will give a short lesson to teach your classmates how game theory can illuminate a real-world scenario of your choosing. Detailed guidelines will be discussed in class. You must email me your proposed topic no later than Friday, October 2. I encourage you to start early and discuss your topic with me.
- **Exams (60%):** There will be two in-person exams, a midterm in class on Wednesday, October 14 (worth 25% of your grade), and a final on Wednesday, December 9, at 12:00 PM (worth 35% of your grade). The final exam will be cumulative. These exam dates are not flexible. Please do not schedule interviews or travel when we have an exam. If you miss the midterm exam due to an officially excused reason, I will compute your midterm grade using your percentile rank from the final exam. Calculators are neither permitted nor necessary to complete the exams.

GRADING SCALE

A	[93%, 100%]	A-	[90%, 93%]	B+	[87%, 90%]	B	[83%, 87%]	B-	[80%, 83%]
C+	[77%, 80%]	C	[73%, 77%]	C-	[70%, 73%]	D	[65%, 70%]	F	[0%, 65%]

CLASS POLICIES, RESOURCES, AND MISCELLANEOUS INFORMATION

- **Attendance:** Attendance is mandatory and essential for success in this course. However, you may occasionally need to miss class, in which case I ask that you email me to let me know and ask a classmate for the notes from the day you missed.
- **Office Hours:** I will hold regular office hours in person. If you need to attend office hours virtually, email me to arrange it. If you cannot attend at the scheduled time, please email me or visit my [Calendly page](#) to set up a separate meeting. You are also welcome to stop by my office for a drop-in meeting if you see I'm available.
- **Readings:** About once per week, I will assign an article for you to read, which you should engage with on Perusall (accessible via Canvas). Perusall is an online platform where you can comment on the readings, as well as reply to your classmates' comments. No credit will be given for late Perusall assignments.
- **What to Call Me:** Feel free to call me by my first name, Anne, or by my last name, e.g., Dr. Schaller or Professor Schaller. My last name rhymes with "Taylor."
- **Late Submissions and Extensions:** Because assignments are open for an extended period, extensions are rarely granted. However, if extenuating circumstances arise, please reach out as soon as you are able and we will discuss your options.
- **Email:** Please feel free to email me any questions that I can answer relatively quickly in writing. More complex concerns are usually better addressed during office hours or by appointment. I generally respond within 24 hours, though replies may be slower in the evenings and on weekends. Please plan ahead and avoid sending last-minute emails immediately before exams or assignment deadlines.
- **Technology:** Laptops and tablets are permitted in class, though I may disallow them if they become distracting. Please keep cell phones silenced and put away.
- **Mental Health:** I place the highest importance on your mental health and overall well-being. Please feel free to reach out to me about any difficulties that impact your performance in this course. You do not need to disclose any personal information, though you are always welcome to talk to me about anything you are experiencing. (That being said, please be aware that I am subject to some mandatory reporting requirements concerning allegations of sexual misconduct, as discussed on the last page of the syllabus.) I also encourage you to utilize the other resources SLU provides to students, such as those available through the [University Counseling Center](#).

TIPS FOR SUCCESS

- **Pay attention in class and take thorough, handwritten notes.** Much of the learning in this course happens during lectures, so you should make every effort to be both physically and mentally present in class. To this end, I strongly encourage you to take handwritten notes. Research shows that writing notes by hand improves retention, and many lectures will involve drawing graphs, which can be difficult to do on a laptop. Taking notes by hand also reduces distractions to yourself and those around you. In terms of what to write down, be exhaustive. At a minimum, you should copy everything I write on the board and anything that will help future you decipher the meaning of what you wrote down.
- **Study actively, not passively.** Economics is not a subject that can be learned by rereading notes the night before an exam. To prepare effectively, work through problems (e.g., from problem sets or in-class exercises) without looking at the solutions. You would not prepare for an algebra exam by memorizing the definition of a polynomial; you would solve problems. You should study economics the same way.
- **Ask questions!** If something confuses you, chances are you are not the only one wondering about it. Questions are not only welcome, but encouraged.
- **Keep up with the material.** Economic concepts build on one another, so falling behind can make the course much more difficult. Start the problem sets well before they are due and seek help early with anything you do not understand. Frequent homework is intended to help you avoid the temptation to cram before exams.
- **Use AI responsibly.** AI tools (e.g., ChatGPT) can be valuable when used responsibly. You are welcome to use AI to support your learning, but not to replace it. If you rely on AI to complete the homework for you, you are unlikely to develop the understanding needed to succeed on exams, where you will have to solve problems independently. The following examples illustrate appropriate and inappropriate uses of AI. Keep in mind that AI can sometimes provide incorrect information. To use AI effectively, you **MUST** be able to identify when the AI is wrong. If you are unsure whether an AI explanation is accurate, please feel free to ask me.

Do	Don't
✓ Ask AI to explain an economic concept in a different way.	✗ Turn to AI before you've attempted a problem yourself.
✓ Ask AI to identify and explain mistakes in your work.	✗ Ask AI to complete homework problems for you.
✓ Ask AI to quiz you on course topics.	✗ Send me emails written by AI.
✓ Use AI to make flashcards, study guides, or additional practice problems from your notes.	✗ Use AI in any way that violates SLU's academic integrity policy.

SYLLABUS STATEMENTS REQUIRED BY THE UNIVERSITY

- **Academic Integrity:** Academic integrity is the commitment to and demonstration of honest and moral behavior in an academic setting. Since the mission of the University is “the pursuit of truth for the greater glory of God and for the service of humanity,” acts of integrity are essential to its very reason for existence. Thus, the University regards academic integrity as a matter of serious importance. Academic integrity is the foundation of the academic assessment process, which in turn sustains the ability of the University to certify to the outside world the skills and attainments of its graduates. Adhering to the standards of academic integrity allows all members of the University to contribute to a just and equitable learning environment that cultivates moral character and self-respect. The full University-level Academic Integrity Policy can be found on the [Provost’s website](#).
- **Disability Accommodations:** Students with a documented disability who wish to request academic accommodations must formally register their disability with the University. Once successfully registered, students also must notify their course instructor that they wish to use their approved accommodations in the course. Please contact the Center for Accessibility and Disability Resources (CADR) to schedule an appointment to discuss accommodation requests and eligibility requirements. Most students on the St. Louis campus will contact CADR, located in the Student Success Center and available by email at accessibility_disability@slu.edu or by phone at 314-977-3484. Once approved, information about a student’s eligibility for academic accommodations will be shared with course instructors by email from CADR and within Banner. Students who do not have a documented disability but who think they may have one also are encouraged to contact CADR. Confidentiality will be observed in all inquiries.
- **Title IX:** Saint Louis University and its faculty are committed to supporting our students and seeking an environment that is free of bias, discrimination, and harassment. If you have encountered any form of discrimination on the basis of sex, including sexual harassment, sexual assault, stalking, domestic or dating violence, we encourage you to report this to the University. If you speak with a faculty member about an incident that involves a Title IX matter, that faculty member must notify SLU’s Title IX Coordinator that you shared an experience relating to Title IX. This is true even if you ask the faculty member not to disclose the incident. The Title IX Coordinator will then be available to assist you in understanding all of your options and in connecting you with all possible resources on and off campus. If you are pregnant or experiencing a pregnancy related condition, the Title IX Coordinator can assist you in understanding your rights and options as well as provide supportive measures. Anna Kratky is the Title IX Coordinator at Saint Louis University (DuBourg Hall, Room 36; anna.kratky@slu.edu; 314-977-3886). If you wish to speak with a confidential source, you may contact the counselors at the University Counseling Center at 314-977-TALK or make an anonymous report through SLU’s Integrity Hotline by calling 1-877-525-5669 or [online](#). To view SLU’s policies, and for resources, please visit [this web address](#).

TENTATIVE COURSE CALENDAR

Week	Deadlines and Other Important Dates
1	-
2	WE 8/26: Read/discuss chs. 1-2 of Chwe (2013) on Perusall WE 8/26: Last day to drop a course
3	MO 8/31: Read/discuss Schelling (1963) on Perusall WE 9/02: Problem set 1 due at start of class
4	MO 9/07: No class (Labor Day) WE 9/09: Problem set 2 due at start of class FR 9/11: Read/discuss Levitt et al. (2011) on Perusall
5	WE 9/16: Problem set 3 due at start of class FR 9/18: Read/discuss Binmore et al. (1985) on Perusall
6	WE 9/23: No class (Wellness Day)
7	MO 9/28: Read/discuss Niou and Ordeshook (1994) on Perusall WE 9/30: Problem set 4 due at start of class FR 10/02: Mini lesson topic due via email by 11:59 PM
8	WE 10/07: Problem set 5 due at start of class FR 10/09: Read/discuss Farrell and Rabin (1996) on Perusall FR 10/09: Sign up for a mini lesson time slot by 11:59 PM
9	WE 10/14: Midterm exam
10	MO 10/19: Read/discuss McKissack (1986) and ch. 4 of Chwe (2013) on Perusall WE 10/21: Problem set 6 due at start of class FR 10/23: No class (Fall break)
11	MO 10/26: Read/discuss Gibbons (1997) on Perusall WE 10/28: Last day to withdraw from a course
12	MO 11/02: Read/discuss Axelrod and Hamilton (1981) on Perusall WE 11/04: Problem set 7 due at start of class
13	MO 11/09: Read/discuss Chong (1991) on Perusall WE 11/11: Problem set 8 due at start of class
14	WE 11/18: Problem set 9 due at start of class FR 11/20: Read/discuss Roth and Ockenfels (2002) on Perusall
15	WE 11/25: No class (Thanksgiving break) FR 11/27: No class (Thanksgiving break)
16	MO 11/30: Read/discuss Dixit and Nalebuff (1991) on Perusall FR 12/04: Problem set 10 due at start of class
-	WE 12/09: Final exam at 12:00 PM

REFERENCES

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