

Strategy and Politics
PSCI 3225
TTh 9:30 AM - 11:00 AM, CLRE 207

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Hours: M 3:00–4:00 PM, or by appt.



Few political decisions are made in a vacuum. Most of the choices that political actors make involve strategic interaction, meaning that the consequences of those choices depend upon what other actors might do in response. When Congress passes a bill, they must consider whether the president is likely to sign or veto it. When one state threatens another in hopes of achieving some concession, it must consider how likely its opponent is to retaliate.

This course introduces students to the tools and concepts of game theory, a powerful and highly general approach to understanding how people make decisions in strategic settings. Game theory has applications to many fields of inquiry, including economics, sociology, biology, and, of course, political science. In this course, students will be introduced to the fundamentals of game-theoretic reasoning. We will focus particularly on those aspects of game theory that are most useful for understanding politics, and consider how game theory can guide and inform our understanding of real-world political phenomena.

Grading and Assignments:

Problem Sets	30%
Exam 1	20%
Exam 2	20%
Final	20%
Paper	10%

Students will be responsible for three forms of graded assignments: short take-home problem sets, three exams, and a short final paper.

Problem Sets: Problem sets will consist of two main types of questions. ‘Solving’ problems, where you identify the correct solutions to various game theory problems, and open-ended discussion questions, which ask you to think about how various game theory problems apply to real world political situations. Problem sets will be turned in through Canvas; this will require you to have the capacity to either type up your answers in a digital format or to take a high-quality scan or photo of your handwritten problem set. Please be prepared for this.

You may work on the problem sets together in small groups (3–5 people), and compare your work, but *only* after attempting them alone. Please note that the material in this class is a

little technical and you will benefit enormously from repetition and practice. This is a class where you will learn by doing. As such, I *strongly, strongly* recommend that you take this requirement very seriously, and attempt the problem sets on your own before seeking help from others. Simply copying someone else's answers is not allowed, and will be considered academic dishonesty. In addition, note that if you simply copy someone else's answers, you will not learn anything from puzzling over the problems and will probably do very poorly on the exams.

Because I don't want you to worry too much about doing poorly on any particular problem set, I will drop your lowest problem set grade from your final average.

Exams: The exam questions will look very much like the solving problems from the problem sets, and you should think of the problem sets as opportunities to practice so that you will do well on the exams. Exams will be non-cumulative.

The exams are closed book, and you are not permitted to work with other students or use outside help.

Final Paper: You will be required to write a short paper (roughly 4–6 pages) in which you apply the game theory skills you have learned this semester to analyze some political situation of interest to you. Your paper should provide some brief background on some political interaction, and, centrally, describe a fully-specified game that you believe provides a reasonable representation of that interaction. You should also identify all equilibria of your game, and discuss what insights you think the game and its solution generate for understanding actors' incentives.

Grading Scheme: I use the following grade categories for calculating final letter grades, and do not round up, with the one exception noted below. Grades exactly on a threshold will be assigned the higher letter grade.

A: 93 and above, A-: 90–93, B+: 87–90, B: 83–87, B-: 80–83, C+: 77–80, C: 73–77, C-: 69.5–73, D+: 67–69.5, D: 63–67, D-: 60–63, F: 60 and below.

A Note on Math: Though the advanced study of game theory does require some knowledge of higher math, in this introductory class we will mostly be using fairly basic math, and most of what you will need I will teach as we go. The class will require deductive reasoning, but not advanced math. That said, if you are not comfortable with high-school level algebra (such as how to solve for x given a simple equation) you may struggle in this class. If you have concerns, come meet with me and we can talk about them.

Important Dates:

Thursday, September 29	Exam 1
Thursday, November 3	Exam 2
Thursday, December 8	Paper due
Saturday, December 10	Final

Exams 1 and 2 will take place during our normal class time. The final exam will be held at the university's scheduled final exam time, Saturday, Dec. 10, from 1:30–4:00pm.

Late Work Policy: Problem sets are expected to be completed by the beginning of class on the scheduled due date. We will go over answers to each problem set the class period they are due, so any problem sets turned in after that date will receive a grade of zero. To repeat: *late problem sets will not be accepted*. In the event of a documented serious illness or emergency that prevents you from completing a problem set on time, come see me and we will discuss a resolution. Final papers will be penalized 10 points per day late.

Classroom Behavior: Both students and faculty are responsible for maintaining an appropriate learning environment in all instructional settings, whether in person, remote or online. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. For more information, see the policies on classroom behavior and the Student Conduct & Conflict Resolution policies.

Requirements for COVID-19: As a matter of public health and safety, all members of the CU Boulder community and all visitors to campus must follow university, department and building requirements and all public health orders in place to reduce the risk of spreading infectious disease. CU Boulder currently requires COVID-19 vaccination and boosters for all faculty, staff and students. Students, faculty and staff must upload proof of vaccination and boosters or file for an exemption based on medical, ethical or moral grounds through the MyCUHealth portal.

The CU Boulder campus is currently mask-optional. However, if public health conditions change and masks are again required in classrooms, students who fail to adhere to masking requirements will be asked to leave class, and students who do not leave class when asked or who refuse to comply with these requirements will be referred to Student Conduct and Conflict Resolution. For more information, see the policy on classroom behavior and the Student Code of Conduct. If you require accommodation because a disability prevents you from fulfilling these safety measures, please follow the steps in the “Accommodation for Disabilities” statement on this syllabus.

If you feel ill and think you might have COVID-19, if you have tested positive for COVID-19, or if you are unvaccinated or partially vaccinated and have been in close contact with someone who has COVID-19, you should stay home and follow the further guidance of the Public Health Office (contacttracing@colorado.edu). If you are fully vaccinated and have been in close contact with someone who has COVID-19, you do not need to stay home; rather, you should self-monitor for symptoms and follow the further guidance of the Public Health Office (contacttracing@colorado.edu).

Accommodation for Disabilities: If you qualify for accommodations because of a disabil-

ity, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the Disability Services website. Contact Disability Services at 303-492-8671 or dsinfo@colorado.edu for further assistance. If you have a temporary medical condition, see Temporary Medical Conditions on the Disability Services website.

Preferred Student Names and Pronouns: CU Boulder recognizes that students' legal information doesn't always align with how they identify. Students may update their preferred names and pronouns via the student portal; those preferred names and pronouns are listed on instructors' class rosters. In the absence of such updates, the name that appears on the class roster is the student's legal name.

Honor Code: All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code academic integrity policy. Violations of the Honor Code may include, but are not limited to: plagiarism, cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without permission from all course instructors involved, and aiding academic dishonesty. All incidents of academic misconduct will be reported to the Honor Code (honor@colorado.edu); 303-492-5550). Students found responsible for violating the academic integrity policy will be subject to nonacademic sanctions from the Honor Code as well as academic sanctions from the faculty member. Additional information regarding the Honor Code academic integrity policy can be found on the Honor Code website.

Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation: CU Boulder is committed to fostering an inclusive and welcoming learning, working, and living environment. The university will not tolerate acts of sexual misconduct (harassment, exploitation, and assault), intimate partner violence (dating or domestic violence), stalking, or protected-class discrimination or harassment by or against members of our community. Individuals who believe they have been subject to misconduct or retaliatory actions for reporting a concern should contact the Office of Institutional Equity and Compliance (OIEC) at 303-492-2127 or email cureport@colorado.edu. Information about university policies, reporting options, and the support resources can be found on the OIEC website.

Please know that faculty and graduate instructors have a responsibility to inform OIEC when they are made aware of incidents of sexual misconduct, dating and domestic violence, stalking, discrimination, harassment and/or related retaliation, to ensure that individuals impacted receive information about their rights, support resources, and reporting options. To learn more about reporting and support options for a variety of concerns, visit Don't Ignore It.

Religious Holidays: Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. Please let me know about any conflicts with exam dates with at least two weeks notice, and I will make every effort to provide an alternative exam time.

See the campus policy regarding religious observances for full details.

Syllabus Changes: This syllabus represents a general plan for the course; I reserve the right to deviate from it if necessary. Students will be given advance notification of any changes to the syllabus.

Course Schedule and Required Readings:

A loose schedule of topics to be covered, and the required readings for each topic, are listed below. All readings will be uploaded to Canvas. The following is organized by topic, rather than by specific dates, to allow for some flexibility. Rough estimates of when problem sets will be handed out are also included, but the exact dates will depend on the pace at which we cover various topics. Readings are not necessarily best approached on the first day we begin a new unit. I will announce due dates for required readings and problem sets in class and on Canvas.

Week 1 Game Theory in Political Science

Week 2 Expected Utility and Decision Theory

Problem set 1 handed out around Week 2

Required: Clarke and Primo

Week 3 Preference Aggregation and its Problems

Required: Riker (skim)

Week 4 Normal-Form Games and the Nash Equilibrium

Problem set 2 handed out around Week 4

Weeks 5–6 Mixed Strategies and Various Applications

Problem set 3 handed out around Week 5

Required: Poundstone, Ostrom

EXAM 1 Thursday, 9/29

Weeks 7–9 Extensive Form Games and Subgame Perfection

Problem set 4 handed out around Week 8

Required: Shepsle, Camerer and Thaler

Weeks 10–11 Repeated Games and Reputation

Problem set 5 handed out around Week 10
Required: Axelrod

EXAM 2 Thursday, 11/3

Week 13 More Advanced Applications of Extensive Form
Problem set 6 handed out around Week 13

Weeks 14–15 Incomplete/ Asymmetric Information
Problem set 7 handed out around Week 15

FINAL EXAM Saturday, December 10, 1:30–4:00p