

PSCI 3225-001 – Strategy and Politics  
Spring, 2023  
Monday, Wednesday, Friday: 2:30-3:20  
HUMN 250

Contact Information

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Ketchum 212

Office Hours: Tuesday, Thursday 3:30-5:00

Courtney Nava (

[Class Description](#)

This course teaches a specific analytical technique known either as game theory or formal modeling, that helps us understand how individuals and groups act strategically. In many areas of politics, people and groups make decisions based on how they expect other people or groups to react. For instance, politicians make certain campaign positions based on how they think voters will respond, and craft legislation based on how they think other legislators will vote.

## 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.

## Course Requirements and grades

Your grade will be determined by the following assignments:

- 6 problem sets (5 pts each)
- 3 application assignments (10 pts each)
- Midterm and Final (20 pts each)

You must turn in a paper copy of each assignment. You may also be required to upload an electronic copy of the application assignments and exams to Canvas.

There will be a problem set every couple weeks, allowing you to practice solving the models and develop your understanding of these techniques. These problem sets will be due on February 10, February 24, March 10, March 22, April 14, and April 28.

You will be required to write three short assignments a.014 Tw .Eng the moupst aayermgu2 (a)4 (y)-2

- Rationality
    - January 25  
Expected utility
    - January 27  
Continued
  - Week 3
    - Readings  
Recommended Morrow, pgs 104-111 (in ch. 4)
    - January 30  
Median voter theorem
    - February 1  
Agenda setting and the median voter theorem
    - February 3  
Continued
  - Week 4
    - Readings  
Recommended – Morrow pgs ~~65~~-(in ch. 3)  
Recommended – Morrow pgs. ~~70~~4 (in ch. 4)
    - February 6  
Introduction to simultaneous games
    - February 8  
Dominant and dominated strategies
    - February 10  
Problem set 1 due  
Nash equilibria
  - Week 5
    - February 13  
Mixed strategy Nash equilibria
    - February 15  
Multiple equilibria
    - February 17  
Common 2x2 games
  - Week 6
    - Readings  
Recommended – Morrow Ch. 3  
Recommended – Morrow Ch. 5
    - February 20  
Extensive form games
    - February 22  
Converting to strategic form, Nash equilibria
    - February 24  
Problem set 2 due  
Guess and check method without converting
  - Week 7
    - February 27  
Subgame perfect Nash equilibrium, backwards induction

- March 1  
Continued
- March 3  
Application assignment 1 due  
Risk and nature nodes
- Week 8
  - Readings  
Recommended – Morrow, pgs 1456 (in ch. 5)
  - March 6  
Basic bargaining games
  - March 8  
Bargaining with outside options
  - March 10  
Problem set 3 due  
Bargaining with counteroffers
- Week 9
  - Readings  
Recommended – Morrow, Ch. 9
  - March 13  
Review for midterm
  - March 15  
Introduction to repeated games
  - March 17  
Midterm

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- Readings
  - Recommended – Morrow, ch. 8
- April 10
  - Private information / screening games (continued)
- April 12
  - Bayes' rule
- April 14
  - Problem set 5 due
- Week 13
  - April 17
    - Signaling games
  - April 19
    - Continued
  - April 21
    - Continued
- Week 14
  - Readings
    - Required – Clark and Primo, 2007, “Modernizing Political Science: A Model Based Approach.”
    - Required – Beard and Strayhorn 2018, “When Will States Strike First.”
    - Recommended – Morrow Ch. 10
    - Others TBA
  - April 24
    - Game theory in political science
  - April 26
    - Example 1
  - April 28
    - Problem set 6 due
    - Example 2
- Week 15
  - May 1
    - Example 3
  - May 3
    - Application assignment 3 due
    - Review for final
  - May 5 – Reading day, no class
- Final
  - May 7 (1:30-4:00)
  - Final due

## Policies

To make the course accessible to students who may have to miss class, I intend to record all class sessions and post the recordings on Canvas. By attending class, you consent to the session being

recorded. By maintaining enrollment in this class, you ~~are~~ not to share the recordings with anyone outside of class.

All assignments are due at the beginning of class. Assignments turned in after this point will receive a single 15% late penalty. I am relatively willing to grant extensions as needed, provided you contact me.

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 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

My policy is that I will report all suspected violations to the honor code office. If the honor code office finds that you did violate the honor code, you will receive a zero on the affected assignment. Subsequent violations will result in automatically failing the course.

CU Boulder is committed to fostering an inclusive and welcoming learning, working, and living environment. University policy prohibits sexual misconduct (harassment, exploitation, and assault), intimate partner violence (dating or domestic violence), stalking, protected class discrimination and harassment, and related retaliation by or against members of our community on- and off-campus. These behaviors harm individuals and our community. The Office of Institutional Equity and Compliance (OIEC) addresses these concerns, and individuals who believe they have been subjected to misconduct can contact OIEC at 492-2327 or email [cureport@colorado.edu](mailto:cureport@colorado.edu). Information about university policies, reporting options, and support resources can be found on the OIEC website.