This course covers advanced noncooperative game theory with an emphasis on its use in political science. In order to get the most out of the material, you should have taken Game Theory I (offered in ICPSR Summer Session I), or its equivalent, prior to taking this class.

**Course Text.** The course text is *Game Theory: An Introduction*, by Steven Tadelis. It should be available online.

**Course TA.** Jessica Sun. Email: sunjs@umich.edu

**Contact Information.** My email is jwpatty@gmail.com

**Course Meetings.** The class will be held 10am-Noon, July 23-August 16th (no class on August 17th).

**Course Grading.** For those who wish to be assigned a grade, the course grade will be based on the following criteria:

1. **Three Problem Sets.** Combined, these are worth 60% of the final course grade. Each assignment is due at the beginning of the class for which it is listed below. The assignments should be turned in electronically by the beginning of class on the date listed below in the course schedule. Late assignments will be penalized by 25 points (out of 100) for each day late.

2. **Final Exam.** The final, comprehensive, and take-home exam is worth 40% of the final course grade.

The course is graded on the following scale:

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<th>Score</th>
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<tr>
<td>≥94</td>
<td>A</td>
<td>≥83</td>
<td>B</td>
<td>≥73</td>
<td>C</td>
<td>≥63</td>
<td>D</td>
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<tr>
<td>≥90</td>
<td>A-</td>
<td>≥80</td>
<td>B-</td>
<td>≥70</td>
<td>C-</td>
<td>≥60</td>
<td>D-</td>
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<tr>
<td>≥87</td>
<td>B+</td>
<td>≥77</td>
<td>C+</td>
<td>≥67</td>
<td>D+</td>
<td>&lt;60</td>
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I do not round grades so, for example, a final grade of 93.9 is an “A-.”

**Teaching Philosophy.** I hope you will meet with me during the session, especially if you have questions about the course material. I welcome questions during class: if you have a question or comment, please interrupt me!

**Workshops.** On Fridays, I will lead a workshop in class in which we “build a model from scratch.” The goal of these sessions is to show you a bit of how game theory models are developed for the purposes of analyzing real-world problems. I will discuss this process more on the first day of the course. Suggest your own research interests as possible topics!
Various Policies.

• You may work together on the problem sets, though you should each prepare your answers separately.
• All assignments and the take-home exam should be prepared in LaTeX and submitted electronically as a pdf.
• The problem sets are “open book and open notes.”
• You are to consult only with Professor Patty and the TA regarding the final exam.
• Though it is take-home, the final exam is “closed book and closed notes”: you should consult no materials while taking it.

Class Schedule. The class schedule is as follows:

1. (July 23rd) Introduction
2. (July 24th) Extensive Form Games & Subgame Perfect Nash Equilibrium
   • Tadelis, Chapters 7 & 8
3. (July 25th) Multistage & Repeated Games
   • Tadelis, Chapters 9 & 10
4. (July 26th) Bargaining
   • Tadelis, Chapter 11
5. (July 27th) Workshop
   • Homework 1 Due.
6. (July 30th) Static Bayesian Games
   • Tadelis, Chapter 12
7. (July 31st) Mechanism Design
   • Tadelis, Chapters 13 & 14
8. (Aug 1st) Perfect Bayesian Equilibrium & Sequential Equilibrium
   • Tadelis, Chapter 15
9. (Aug 2nd) Signaling Games
   • Tadelis, Chapter 16
10. (Aug 3rd) Workshop
    • Homework 2 Due.
11. (Aug 6th) Reputation
    • Tadelis, Chapter 17
12. (Aug 7th) Conflict & Deterrence
13. (Aug 8th) Cheap Talk Signaling
   - Tadelis, Chapter 18

14. (Aug 9th) Signaling Games: Belief Refinements

15. (Aug 10th) Workshop
   - Homework 3 Due.

16. (Aug 13th) Principal-Agent Theory: Moral Hazard & Adverse Selection

17. (Aug 14th) Delegation

18. (Aug 15th) Games with Large Numbers of Players

19. (Aug 16th) Bayesian Persuasion

   - Take-Home Exam Due at 10am.