



ECO 4400

Game Theory and Application, Section 0140

Monday & Wednesday, 1:55 PM-3:50 PM, STZ 0104

Zachary Cohle

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Office: MAT 401

Office Hours: Tuesday, 1:50 PM-3:50 PM & additional hour offices as needed

Phone: 392-5805

Course Description:

This course provides a general overview of Game Theory. Throughout the course, we will examine both simultaneous and sequential types of games. Students will learn how to effectively model games and how to apply these models to real world scenarios. Topics of discussion include repeated games, strategic moves, uncertainty, mixed strategies, and both sequential and simultaneous games. By the completion of this class, each student should have the ability to identify and analyze all types of games as they relate to real world scenarios.

Prerequisites: ECO 2013 & ECO 2023.

Note: Much of the class will utilize graphical analysis and algebra. Although calculus is not required, a fundamental understanding of basic single variable calculus is extremely helpful.

Text: *Games of Strategy*, 4th Edition

Authors: Avinash Dixit, Susan Skeath and David Reiley **ISBN:** 978-0-393-12444-6

Grade Distribution:

Assignment 1	15%
Midterm Exam 1	30%
Assignment 2	15%
Assignment 3	10%
Midterm Exam 2	30%

Letter Grade Distribution:

≥ 93.00	A	73.00 - 76.99	C
90.00 - 92.99	A-	70.00 - 72.99	C-
87.00 - 89.99	B+	67.00 - 69.99	D+
83.00 - 86.99	B	63.00 - 66.99	D
80.00 - 82.99	B-	60.00 - 62.99	D-
77.00 - 79.99	C+	≤ 59.99	F

Student Responsibilities & Resources:

- General

- Computers and other electronics are not to be used in class.
- Exams are closed book, closed notes.
- A comprehensive in-class OPTIONAL final examination will be held on April 19th. This final may take the place of one other exam.
- **No incompletes, no extensions, no grade changes, note late assignments.**
- All University of Florida rules apply.

- **Grades**

- Attendance and class participation are required. In order to be successful in this course, consistent attendance is required. Furthermore, lectures will be interactive. I will call on students; however, the majority of class participation will be on a volunteer basis. If you have to miss class, it is the student's responsibility to learn the missed material.
- No answer keys will be supplied directly to students. I will review each problem in class after homeworks and exams have been returned.
- Failure to attend class during an exam will result in a zero for that exam.
- Homework assignments will be partially graded on effort (50% of the assignment grade). I will also choose one problem to grade for correctness (the other 50% of the grade). Students may work with one other person and turn in one copy for both students.
- Unless working with one other student for homework, all work submitted by students must be their own. UF's policy on academic honesty will be strongly enforced.

- **Resources for Success**

- The homework assignments will a review for each midterm. Exams will resemble the content presented in class and in the assignments. Focus not only on the answer. Understanding how to get to a solution is key.
- It is important to stay on top of the information. Cramming before exams will not lead to full comprehension of the material. Review your notes weekly.
- I welcome all students to attend office hours. Please attempt problems before asking questions on them so that I can better assist you.
- Problems at the end of each chapter of the class textbook can serve as an additional resource and review of key material.

- **General Wellness**

- The college experience provides an opportunity for not only academic learning, but personal growth. However, this time can be accompanied with stress. If you are having difficulties in any course or in your personal life in general, please seek help from myself or another faculty member. I also encourage you to utilize the free and anonymous services of the UF Counseling and Wellness Center.

Tentative Course Outline:

The weekly coverage might change as it depends on the progress of the class. However, you must keep up with the reading assignments.

Day	Content
1/4	<ul style="list-style-type: none">• Introduction• Reading assignment: Chapter 1
1/9-1/11	<ul style="list-style-type: none">• How to Think about Strategic Games• Reading assignment: Chapter 2
1/18	<ul style="list-style-type: none">• Games with Sequential Moves• Reading assignment: Chapter 3
1/23-1/25	<ul style="list-style-type: none">• HW 1 DUE: 1/25• Simultaneous-Move Games: Discrete Strategies• Reading assignment: Chapter 4
1/30-2/1	<ul style="list-style-type: none">• Simultaneous-Move Games: Discrete Strategies (continued)• Simultaneous-Move Games: Continuous Strategies, Discussion, and Evidence• Reading assignment: Chapter 5
2/6-2/8	<ul style="list-style-type: none">• EXAM 1: 2/8• Review
2/13-2/15	<ul style="list-style-type: none">• Exam Answers• Combining Sequential and Simultaneous Moves• Reading assignment: Chapter 6
2/20-2/22	<ul style="list-style-type: none">• HW 2 DUE: 1/20• Combining Sequential and Simultaneous Moves (continued)• Simultaneous-Move Games: Mixed Strategies• Reading assignment: Chapter 7
2/27-3/1	<ul style="list-style-type: none">• Uncertainty and Information• Reading assignment: Chapter 8
3/13-3/15	<ul style="list-style-type: none">• Strategic Moves• Reading assignment: Chapter 9
3/20-3/22	<ul style="list-style-type: none">• HW 3 DUE: 3/20• Strategic Moves (continued)
3/27-3/29	<ul style="list-style-type: none">• Repeated Games• Reading assignment: Chapter 10
4/3-4/5	<ul style="list-style-type: none">• EXAM 2: 4/3• Exam 2 Answers
4/10-4/12	<ul style="list-style-type: none">• Other Topics in Applied Game Theory
4/17-4/19	<ul style="list-style-type: none">• Review• FINAL: 4/19

