



ECON 201 Games and Strategy

Fall 2013

M 13:00-14:50 & W 12:00-12:50

Block-A 229

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GENERAL INFORMATION

Course Description:

Terminology and basic definitions of game theory. Formulation of games. Solution concepts. Nash equilibrium. Prisoners' dilemma games. Games with strategic moves. Applications to law, government, politics, diplomacy, business, management and economic behavior.

Course Objective:

The main objective of this course is to introduce some of the game theory's main topics and analytic tools, with an emphasis on gaining a practical understanding. The course will help students to apply games and strategies to various areas such as law, government, politics, diplomacy, business, management and economic behavior.

Credits: (3+0+0) 3 TEDU Credits, 6.0 ECTS Credits

Prerequisites/Corequisites:

None. No prior knowledge of economics, political science or biology is necessary. The same is true for college level mathematics and statistics. The subject is inherently quantitative; totally non-numerate students will not succeed in it. However, the most basic high-school algebra avails almost all that is done in this course.

Learning Outcomes:

Upon successful completion of this course, a student will be able to

1. Describe different types of games and the main concepts of game theory.
2. Differentiate various methods to solve games, such as backward induction, rationalizability, best responses, dominance and elimination of strategies.
3. Apply different solution concepts such as minimax, Nash equilibrium, dominant strategy equilibrium and subgame perfect equilibrium.
4. Explore applications of game theory in different areas such as law, economic behavior, politics and business.
5. Construct a well-defined game to formalize and apply the concepts and ideas that constitute these various game types and their solutions.

COURSE READINGS

Required Text:

Avinash Dixit, David Reiley and Susan Skeath, Games of Strategy, 3rd Edition, W.W. Norton & Company, 2009 (ISBN-10: 0393931129; ISBN-13: 978-0393931129)

Optional Text:

Charles Holt, Markets, Games and Strategic Behavior, Pearson, 2007 (ISBN-10: 0321419316; ISBN-13: 978-0321419316)

Avinash Dixit and Barry Nalebuff, The Art of Strategy: A Game Theorist's Guide to Success in Business and Life, W.W. Norton & Company, 2010, (ISBN-10: 0393337170; ISBN-13: 978-0393337174)

Len Fisher, Rock, Paper, Scissors: Game Theory in Everyday Life, Basic Books, 2008, (ISBN-10: 0465009387; ISBN-13: 978-0465009381)

Supplementary Material:

Real world scenarios and applications will be discussed with the aid of supplementary readings or movies. They will be assigned as the course progresses or handed out in class.

ASSESSMENT METHODS

Homework:

Homework assignments will be assigned periodically throughout the semester. They are crucial in helping you to understand the material taught in class, but they will also ask you to apply concepts from class to a variety of real world issues to develop your critical thinking skills. They cover a wide variety of problem types, including numerical problems, essay questions, data questions that require you to find information on the web and questions on non-textbook readings and assignments. In addition, they help you in preparing for the exams.

In-Class Activities:

This course adopts interactive learning methods, which require active participation from the members of the class.

- Group Work: You will form groups of 3 to complete your term project. As a group you will make a presentation of your project in 15 minutes in class.
- Classroom Discussions: You will be assigned experimental economics readings before coming to class. There will be a class discussion followed by a mini-quiz on the days we review these pieces.
- Problem Solving: During the class there will be various opportunities for you to solve problems either in front of class or on paper.
- Video Screening: There will be various opportunities for video screenings, however, there will be one longer one after which you are expected to take a mini-quiz.

Term Paper (due on December 17):

To satisfactorily complete the course, you must write a term paper about an application of game theory in one of the following areas: economic behavior, business, law and politics. You will construct a well-defined game to formalize and apply the concepts and ideas that you learn in the classroom.

Midterm Exam:

There will be one mid-term exam. Material for the exam will be taken from the assigned readings and class discussions.

Final Exam:

There will be a final exam covering the material studied after the midterm exam. Material for the exam will be taken from the assigned readings and class discussions.

GRADING

The course grade will be based on the following:

	<u>Weight</u>
Homework	20%
In-Class Activities	20%
Term Paper	10%
Midterm Exam	25%
Final Exam	25%

Grade Evaluation Scale: A grade of less than 50% is an F. Everything above 50% will be evaluated on a curve according to class performance and will be awarded a letter grade of AA, BA, BB, CB, CC, DC or DD on the performance scale.

TEACHING and LEARNING

Planned Learning Activities and Teaching Methods:

Telling/Explaining, Discussion/Debate, Questioning, Reading, Peer Teaching, Demonstrating, Problem Solving, Case Study / Scenario Analysis, Simulation & Games, Video Presentations, Oral Presentation, Web Searching

Student Workload:

Lectures 42 hrs, Readings 42 hrs, Quizzes / Homeworks 40 hrs, Midterm Exam 16 hrs, Final Exam 16 hrs, Research Review 24 hrs -- Total workload is 180 hours.

Computer Usage:

Students will use MS Office applications (Word, Excel, Access) to work on their weekly assignments about 2 hours a week.

How to Get the Best out of This Course:

1. **COME TO CLASS.** In the past, the single best predictor of final grades has been class attendance. Every year, some portion of my students stop showing up as the term wears on. These people consistently get C's and worse.
2. **TAKE NOTES.** Getting notes from your friends or downloading the lecture slides are poor substitutes, even if those notes are of high quality. Why? Because most of the learning you will do actually takes place in the process of hearing and seeing the material from the professor and peers, transcribing it into your notes and engaging in discussions with your peers in the classroom.
3. **READ THE TEXT.** Be disciplined about keeping up with the material. Read the text before class in order to familiarize yourself with the models that we will be discussing.
4. **PARTICIPATE.** Finally, get involved in your own and your peers' learning by being active participants in class discussions, spending the necessary time on course projects and studying together outside the classroom if that helps.

COURSE POLICIES

Lectures:

1. Come to class on time, be seated and ready to begin class. Latecomers miss announcements, handouts, the initial thrust of the class, and disturb other students.
2. I will not allow laptops to be used in class, as they are too much of a distraction from the discussion, and are generally not as good as a pen for taking notes. If a student has a particular need to use a laptop, please ask me and I will be willing to consider its use.
3. Cell phones must be put away during lectures.

Homework:

1. You are encouraged to work on problem sets together. Studying in groups is a valuable experience in and of itself and will enhance your understanding of the course material. However, you are required to write up and turn in your own answers. Answers that are simply copied from somebody else in class will receive a score of zero.
2. Problem sets are due on Thursdays at 17:00 at Gizem Tanrıverer's office. In fairness to students who complete assignments on time, no late assignments will be accepted. Since I realize that unforeseen circumstances can arise, however, I will drop your lowest score from consideration for your problem set grade.
3. Handwritten solutions are acceptable as long as they are legible and neat.

Exams:

1. The exams will be closed book. So don't bring one to the exam.
2. Cell phones cannot be used as calculators. So turn them off.

Make-up:

1. If you have a legitimate and documented excuse and miss the mid-term exam for some dire reason, you will be given a written makeup exam. In case of serious illness, a verifying report from a physician is necessary and it has to be approved by the University Health Centre.

Re-grading:

1. HOMEWORK: No re-grade requests will be accepted.
2. EXAMS: I am willing to entertain re-grade requests, subject to the following rules:
 - a. Re-grade requests will be accepted within one week of seeing your exam. After that point, they will not be accepted.
 - b. Requests must be written. You should explain clearly why you claim you deserve more points. Note that "My answer looks just like the key" is not a reason.
 - c. I re-grade the entire exam, not just the question you have highlighted. Since errors in grading go both ways, and a re-grade request is an assertion that errors have occurred, I want to make certain to eliminate all errors. This means that your grade can go up and it can go down.
 - d. I will answer the re-grade request within a week, in writing. At that point, the grade is final and not subject to further discussion.

STUDENT CONDUCT**Academic Integrity:**

Academic dishonesty in assignments, examinations, or other academic performance is prohibited and considered a violation of the Student Conduct Regulations. It includes 'cheating' (the intentional use or attempted use of unauthorized materials, information or study aids); 'fabrication' (the intentional falsification or invention of any information); 'assisting in dishonesty or tampering' (intentionally or knowingly helping or attempting

to help another commit an act of dishonesty or tampering with evaluation instruments and documents); and `plagiarism' (intentionally or knowingly representing the words or ideas of another person as one's own). Penalties for academic dishonesty may result in receiving an 'F' in the course, or referral to the Dean of the Faculty in which you are enrolled for further action.

Disruptive Behavior:

Behaviors that are disruptive to teaching and learning will not be tolerated, and will be referred to the Rector's Office for disciplinary action. Behaviors that create a hostile, offensive or intimidating environment based on gender, race, ethnicity, color, religion, age, disability, marital status or sexual orientation will be referred to the Rector's Office.

TENTATIVE SCHEDULE

Week	Topic
1	Basic Ideas and Examples, How to Think about Strategic Games (Ch2)
2	Games with Sequential Moves (Ch3)
3	Games with Sequential Moves (Ch3) <i>HOMEWORK 1 DUE ON OCTOBER 9 AT 17:00</i>
4	Simultaneous-Move Games with Pure Strategies I: Discrete Strategies (Ch4)
5	Simultaneous-Move Games with Pure Strategies II: Continuous Strategies (Ch5) <i>HOMEWORK 2 DUE ON OCTOBER 23 AT 17:00</i>
6	Critical Discussion of the Nash Equilibrium Concept (Ch5) <i>Discussion and Mini Quiz 1 on October 27</i>
7	Uncertainty and Information (Ch9) <i>Discussion and Mini-Quiz 2 on November 5</i> <i>HOMEWORK 3 DUE ON NOVEMBER 6 AT 17:00</i>
8	Midterm Exam (November 10 at class time)
9	Strategic Moves (Ch10) <i>Discussion and Mini Quiz 3 on November 19</i>
10	Mechanism Design (Ch14)
11	Brinkmanship: The Cuban Missile Crisis (Ch15) <i>In-Class Video Screening: "Cuban Missile Crisis: Three Men Go To War"</i> <i>Mini Quiz 4 on December 1</i> <i>HOMEWORK 4 DUE ON DECEMBER 4 AT 17:00</i>
12	Bidding Strategy and Auction Design (Ch17) <i>HOMEWORK 5 DUE ON DECEMBER 11 AT 17:00</i>
13	Bargaining (Ch 18) <i>Discussion and Mini-Quiz 5 on December 17</i>
14	Presentations on December 22 and 24 <i>HOMEWORK 6 DUE ON DECEMBER 25 AT 17:00</i>
15	Review
