

**ECON 201**  
**Games and Strategy**  
Fall 2016

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**GENERAL INFORMATION**

**Course Description:**

Terminology and basic definitions of game theory. Formulation of games. Solution concepts. Uncertainty and information. Applications to law, government, politics, diplomacy, business, management and economic behavior.

**Extended Course Description**

How to think about strategic games. Games with sequential moves. Simultaneous move games with pure strategies and mixed strategies. Dominance. Best response analysis. Successive elimination of dominated strategies. Minimax. Maximin. Subgame perfectness. Equilibrium refinement. Combining sequential and simultaneous games. Uncertainty and information. Bidding strategy and auction design. Bargaining.

**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:**

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,
3. Apply appropriate solution concepts to solve sequential and simultaneous move games.
4. Demonstrate knowledge of risk and uncertainty,
5. Explore applications of game theory in different areas such as law, economic behavior, politics and business

## **COURSE READINGS**

### **Required Text:**

**(DSR):** Dixit A., Skeath S. and Reiley D., Games of Strategy, 4<sup>th</sup> Edition, W.W. Norton & Company, 2014. <https://digital.wwnorton.com/gamesofstrategy4>

### **Supplementary Material:**

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

## **ASSESSMENT METHODS**

### **Quizzes:**

There will be two quizzes. Material for the quizzes will be taken from the assigned readings and class discussions.

### **Midterm Exams:**

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

### **Final Exam:**

There will be a final exam. Material for the exam will be taken from the assigned readings and class discussions.

### **Group Project and Presentation:**

To satisfactorily complete the course, you must prepare a group project about an application of game theory and present it in front of class. You will construct a well-defined game to formalize and apply the concepts and ideas that you learn in the classroom. More information about the project will be given as the term progresses.

### **Participation:**

This course adopts interactive learning methods, which require class attendance and active participation in the class discussions.

**Attendance is required** and will be taken at the beginning of the class meetings. Being in attendance is defined as being present for the entire class period. If you leave early or come late your attendance will be marked as absent. A student with less than 50 per cent attendance will not be allowed to take the final examination.

## **GRADING**

The course grade will be based on the following:

Quizzes	15%
Midterm Exam	30%
Final Exam	35%
Group Project and Presentation	15%
Participation	5%

### **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, Discussions/Debates, Reading, Peer Teaching, Demonstrating, Problem Solving, Video/Oral Presentations, Research Reports, Guest Speakers, Web Searching

### **Student Workload:**

Lectures 42 hrs, Course Readings 42 hrs, Exams/Quizzes 48 hrs, Assignments/Research/Case Study-- 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. PREPARE: Be disciplined about keeping up with the material. Read the assigned readings before class.
4. PARTICIPATE. Finally, get involved in your own and your peers' learning by being active participants in class discussions, spending the necessary time on assignments 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. Cell phones must be put away and turned off during lectures because they are too much of a distraction.

### **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:**

Re-grade requests will be subject to the following rules:

1. Re-grade requests will be accepted within one week of seeing your exam. After that point, they will not be accepted.
2. 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.
3. 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.
4. 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: Topics and Readings

Week	Topic	Readings (DSR)
Sep 26-Oct 2	Basic Concepts	Chapter 1
Oct 3-Oct 9	How to Think about Strategic Games	Chapter 2
Oct 10-Oct 16	Games with Sequential Moves	Chapter 3
Oct 17-Oct 23	Games with Sequential Moves	Chapter 3
Oct 24-Oct 30	Simultaneous Move Games: Discrete Strategies <b>Quiz 1: October 25, 18:00-19:00</b>	Chapter 4
Oct 31-Nov 6	Simultaneous Move Games: Discrete Strategies	Chapter 4
Nov 7-Nov 13	Combining Sequential and Simultaneous Moves	Chapter 5
<b>Nov 14-Nov 20</b>	<b>Midterm: November 15, 18:00-20:00</b>	
Nov 21-Nov 26	Simultaneous Games: Mixed Strategies	Chapter 7
Nov 28-Dec 4	Simultaneous Games: Mixed Strategies	Chapter 7
Dec 5-Dec 11	Uncertainty and Information <b>Quiz 2: December 6, 18:00-19:00</b>	Chapter 8
Dec 12-Dec 18	Bidding Strategy and Auction Design	Chapter 16
Dec 19-Dec 25	Bargaining	Chapter 17
<b>Dec 26-Dec 31</b>	<b>Term Paper Presentations</b>	