Syllabus
ECON414 0201 - Game Theory
Spring 2016

- TYD 1108, TuTh 11-12:15.

- Instructor: Gustavo Quinderé Saraiva

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- Office: TYD 4128

- Webpage: https://elms.umd.edu/

- Office Hours: Mondays and Wednesdays from 11-12pm.

Course Description:

The purpose of ECON414 is to provide students with an intermediate-level treatment of modeling strategic situations in which individuals with conflicting interests must interact with each other. We will consider a range of formal equilibrium concepts and refinements, and learn how to use game theory to formally study situations of potential conflict: situations where the eventual outcome depends not just on your decision and chance, but the actions of others as well. Applications are drawn mainly from economics, business and political science. Having taken a calculus course (such as econ 300) is a prerequisite for this course.

Reading:

Lecture notes will be posted on elms.

Though there is no required textbook for this course, I strongly recommend reading the following book, as it explains in a very simple way the many formal concepts from Game Theory by going over several interesting examples:

- Joseph Harrington: Games, Strategies, and Decision Making (any edition)

However, if one prefers a more concise and mathematically rigorous book, I would recommend the following:

- Robert Gibbons, Game Theory for Applied Economists, 1992.

A third option is:

- Martin Osborne, An introduction to game theory, 2003.

Grading:

Your grade will be determined as follows:

5% *Pre-Class Questions:* There will be a number of questions to answer online before some classes. These questions will be simple, with no right or wrong answer, and will be used to illustrate games on a larger scale than would be practical in class.

In order to participate in the "pre-class" exercises, you have to register at http://gametheory.tau.ac.il/student/. Our course number is 2480 and our class password is 7123. Please use the email address that you have registered with the school (on Testudo).

20% *Problem Sets:* Every week I will post a problem set on elms. Problem sets should be handed at the beginning of the class. **Problems sets handed in after the deadline will not be accepted!** Please remember to **PUT YOUR NAME, THE COURSE AND SECTION NUMBER ON THE FRONT PAGE** of your problem sets.

30% *Midterm:* There will be only one midterm exam, during the middle of the semester. The exact date will be announced latter.

45% *Final Exam:* There will be one final exam on Thursday, May 12, from 8:00-10:00am.

Let x be the percentage of the available points that you get. Your course grade will be assigned as follows.

$$A+ : 96.67\% \leq x \leq 100\% \qquad A : 93.33\% \leq x < 96.67\% \qquad A- : 90\% \leq x < 93.33\%$$
$$B+ : 86.67\% \leq x < 90\% \qquad B : 83.33\% \leq x < 86.67\% \qquad B- : 80\% \leq x < 83.33\%$$
$$C+ : 76.67\% \leq x < 80\% \qquad C : 73.33\% \leq x < 76.67\% \qquad C- : 70\% \leq x < 73.33\%$$
$$D+ : 66.67\% \leq x < 70\% \qquad D : 63.33\% \leq x < 66.67\% \qquad D- : 60\% \leq x < 63.33\%$$
$$F : x < 60\%$$

In this grading procedure, a student's course grade depends solely on the number of available points he or she gets. So there will be no opportunities to earn "extra credit".

ELMS

On ELMS I will post lecture notes, homework assignments, students' grades, notifications (e.g., about rescheduled exams, class assignments, class being canceled, etc.). Students who wish to contact me can send me a message through ELMS or send me an e-mail to gqs007@gmail.com or saraiva@econ.umd.edu.

Academic Honesty:

The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and grad- uate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit http://www.studenthonorcouncil.umd.edu/whatis.html

Disability Support Services

If a student with a documented physical or learning disability requires special accommodation for an exam, appropriate accommodations can be made. The deadline for making such arrangements for a particular exam is one week before the exam.

One week before the exam, the student must provide (1) a written request and (2) documentation from the Disability Support Services Section of the University.

Rules for Makeup Exams

A student will be eligible to take a makeup exam only if the student is (1) absent from the original exam because of one of the legitimate causes listed in the undergraduate catalog and (2) within one week of the missed exam furnishes documentary support for the assertion that the absence resulted from one of these causes. If a student misses the midterm exam and the subsequent Make-up Exam (and can document that both absences resulted from legitimate reasons), the weight that would have been given to that exam will be added to the weight used for that student's Final Exam.

Information regarding official University closing

Information regarding official University closing can be found at

www.umd.edu/emergencypreparedness/weather_emer/

Weather alerts and weather-related schedule updates will be announced on the University of Maryland homepage and the "snow phone line" (301.405.SNOW (7669)), and reported to local radio and television stations.

Course Evaluation

I look forward to receiving your feedback on the course, both during and at the end of the semester. In particular, your participation in the evaluation of courses through CourseEvalUM is a responsibility you hold as a student member of our academic community. Your feedback is confidential and important to the improvement of teaching and learning at the university. www.courseevalum.umd.edu will be available at the last week of the semester.

Tentative Course Outline:

1. Introduction to Games

2. Static Games of Complete information

   a) Dominant Strategy Equilibrium

   b) Iterative elimination of strictly dominated strategies

   c) Nash Equilibrium

   d) Nash Equilibrium in Mixed Strategies

3. Dynamic Games of Complete Information

   a) Subgame Perfect Nash Equilibrium