Department of Economics and Finance

ECON*3100
Game Theory
Winter 2014

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Office Hours: W 9:00 – 10:00

It is your responsibility as a student to be aware of and to abide by the University's policies regarding academic misconduct, e-mail communication, maintaining copies of out-of class assignments, what to do when you cannot meet a course requirement and the drop date for this semester. To better understand these policies, visit:

https://dev.web.uoguelph.ca/economics_d7/important-notice-about-students-responsibilities-and-university-policies

Course Objectives and Description:

The main purpose of this class is to study essentials of conflict of interests and strategic interactions among players, business firms, etc. Game theory is a tool course and is widely utilized in economics, political science, and psychology as well as in engineering and natural sciences. Accordingly, the examples will be based on these fields. Game-theoretic reasoning will provide us understanding of decision making process when an agent/firm (or a group of agents/firms) encounters rivals who have similar objectives.

Textbook: **An Introduction to Game Theory**, *by Martin J. Osborne*, Oxford University Press, New York, 2004

Grading Policy: There will be 5 assignments, one midterm and a final examination with the weighting scheme as follows:

Assignments	25%
Midterm (in class Feb 25th, 2014)	25%
Final exam (TBA):	50%

Examination Policy: You are expected to be present for each test/examination. *There will be no make-up examinations.* In case of an unavoidable emergency, please contact the instructor (contact person can be you or someone delegated by you) immediately; otherwise expect a grade of zero.

Tentative Course Outline: Chapters are from the textbook.

Games with Perfect Information

Section 1: Chapters 1 – 3. Simultaneous-move games with pure strategies.

Section 2: Chapter 4. Simultaneous-move games with mixed strategies.

Section 3: Chapters 5 – 7. Games with sequential moves.

Games with Imperfect Information

Section 4: Chapter 9. Simultaneous-move games: Uncertainty and information.

Section 5: Chapters 10. Sequential games: Uncertainty and information.

Applications

Section 6: Chapters 14 -16. Some chapters will be selected; there any be additional readings.

IMPORTANT NOTES

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* You should be ready to follow up on class notes *daily* at home. Advanced reading of material to be covered in the class will assist you in better understanding the material.

* Students with disabilities who require reasonable accommodations to fully participate in course activities or meet course requirements are encouraged to contact me.

* Students who want to appeal a grade should do it in writing, no later than the day after the exam was returned.

Course Evaluation: You will be asked to complete an evaluation of this course at some time during the last two weeks of the semester. **This evaluation will be**

done in class. The Department of Economics policy regarding the conduct and use of these evaluations will be found at:

https://www.uoguelph.ca/economics/course-evaluation

In keeping with the University's Learning Outcomes, the Department of Economics and Finance *Learning Outcomes* (*skills* and *knowledge* competencies) for this course are:

Skills:

1) ***Written Communication:*** For both the midterm and the final exam each question will have some marks that are allocated for your **PLAN** of how you approach the question, where you must give details of how you will go about solving, explain each step and after finding the analytic solution, for problems where an economics situation is presented you must tell in words how it solves the economic problem. We emphasize **translation** from words to math and analytic methods, and back to words.

2) ***Numerical Problem Solving*****:** As this is a course designed to teach you game theory, a large number of questions both in exams and in homework will asses your skill at problem solving, which at times involves numerical skills.

3) ***Analytical Problem Solving***: For many questions (in both the exams and homework) you will apply your analytic skills to give a general solution that may not have numerical values.

4) ***Professional and ethical awareness and conduct.*** Students will be monitored during examinations for any copying or other forms of cheating. It will be expected of you to do your on-line homework **individually.**

Knowledge:

1) ***Mathematical Techniques and Understanding:*** Students will be applying the mathematical and analytic skills that they have been introduced to in their program of studies, to understand and solve games. The expectation is that students not only **learn the methods**, but also have **understanding of how and why they work**. Further the expectation is that students **remember** the material beyond this course as it is very useful in your future courses.

2) ***Application of Game Theory to Economic and Political Contexts, and study of other games***: Some examples of economics context are oligopoly, bargaining, and auctions.