ECO 316 H1S: Applied Game Theory

Department of Economics

University of Toronto

Summer 2016

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Room: 150 St. George Street (Max Gluskin House), Room 78

Office Hour: Monday, Wednesday 3 to 4 pm, Room GE 213

Teaching Assistant: Christopher Ryan Dobronyi

Lecture Times: Monday and Wednesday 6 to 8 pm at MS 2172

Tutorial Times: Monday and Wednesday 8 to 9 pm at MS 2172

Course Description:

Game theory is an aspect of economics that studies individual's choice (i.e. consumers, firms, and governments) when his/her payoff also depends on other individual's behavior. This course aims at providing an introduction to Game Theory and its application to economics and politics. We will learn several basic concepts and models that are designed to explain economic, social, and political phenomena. You can also use those models to predict what individuals will do in some particular situations.

Course Website: https://sites.google.com/site/erhaoxie/teaching/eco-316

I would post lecture slides, problem sets and solutions on the course webpage. The lecture slides will include a full version (contains animation) and a compact version (without animation). I will use blackboard to make announcement, please check it regularly.

Prerequisite: ECO200Y1/ECO204Y1/ECO206Y1

This course also requires basic calculus and probability theory. For instance, integration, derivative, and probability distribution. It would be better that you review these materials before you attend the lecture. Moreover, you cannot take both ECO 316 and ECO 326. They are exclusions.

Textbook:

An Introduction to Game Theory by Martin Osborne (Oxford University Press, New York, 2003), ISBN-13: 978-0195128956

Evaluation:

Your final grade will depend on one **Mid-Term test** (**40%** of final grade) and one **Final Exam** (**60%** of final grade). Moreover, if your mid-term's grade is higher than final, both exams take **50%** of final grade.

The Mid-Term test would be written On July 13, in class.

Final Exam is during university exam period.

Problem Set:

I would post problem set online and TA would cover it during the tutorials. Only part of solutions would be post online. So make sure that you attend tutorials to learn the materials. The problem sets are not graded but they would benefit your exam a lot.

Email Policy:

I would respond your email in 24 hours during weekday and 48 hours at weekend. The question in your email should be answered in several sentences. For question need detailed explanation or graph, you have to go to the office hour. Moreover, my email filter may exclude email without institutional address (i.e. gmail, hotmail). So please make sure that you send email from an official U of T email account.

Re-grading:

You can submit re-grading request if you find your test is mis-graded. Please make sure you submit the request **in one week** after you receive the test. You are eligible for re-grading only if you write the test by pen. If you write it by pencil, you cannot get re-grade. Moreover, the re-grade is based on entire exam, not only one particular question, so your grade may be lower after re-grade.

Acceptable Medical Notes:

The only acceptable medical note is a fully completed University of Toronto Medical Certificate. It must be original and completed by a qualified medical doctor (not an acupuncturist, chiropractor, or other health care professional). The doctor's OHIP registration number must be provided on the note.

Preliminary Schedule

Lecture 1	June 27	Introduction of game theory, Strategic game and Nash Equiibrium
Lecture 2	June 29	Best response function, Bertrand and Cournot model
Lecture 3	July 4	Hotelling's model, Electoral competition
Lecture 4	July 6	Mixed strategy Nash Equilibrium, with applications
Lecture 5	July 11	Dominated strategy, Dominant strategy, with applications
Lecture 6	**July 13**	**Mid-term test**
Lecture 7	July 18	Games with imperfect information, Bayesian games
Lecture 8	July 20	Bayesian games continued, with applications, Auctions
Lecture 9	July 25	Auctions, continued
Lecture 10	July 27	Sequential game, Extensive game, Subgame perfect equilibrium
Lecture 11	August 3	Sequential game, continued, Repeated games
Lecture 12	August 8	Repeated games continued, Other topics in Game Theory

Note this schedule is tentative, the schedule is subject to change according to actual lecture progress.