



General Course Information

Instructor: René Kirkegaard
Email rkirkega@uoguelph.ca
Office Location MCKN 707
Office Hours Tuesdays and Thursdays, 12:00 – 2:00.
Department/School Department of Economics and Finance

TA's Details are on CourseLink.

Class Schedule: Tuesdays and Thursdays, 2:30 – 3:50, MCKN 115

Pre-requisites: ECON*2310, ECON*2410, (ECON*2770 or MATH*1210)

Course Description

Game theory studies the strategic interaction between a set of decision makers. As such, game theory has applications in many fields, including economics, political science, and biology. This course will develop the basic game theoretical methodology and illustrate its use with numerous examples. The objective is thus to develop a systematic approach to problems involving strategic interaction, and to enable the student to apply these methods to a wide range of problems.

Course Assessment

			Associated Learning Outcomes	Due Date/ location
Assessment 1:	25%	3 Assignments	See the section on Course Learning Outcomes, below.	Due in class, on January 22, February 3, and March 26, respectively.
Assessment 2:	25%	Midterm	As above.	In class, February 24.
Assessment 3:	50%	Final exam	As above.	April 16, 7:00 – 9:00 PM. Location TBA.
Total	100%			

Course Resources

Required Texts:

Martin J. Osborne, "*An Introduction to Game Theory*," Oxford University Press, 2004.

Journal articles may be used occasionally, in which case they will be posted on CourseLink.

Other Resources:

The website for the book contains solutions to a number of exercises in the book. See:

<http://www.economics.utoronto.ca/osborne/igt/index.html>

Schedule:

The course examines three main topics: (i) Static Games, (ii) Dynamic games, and (iii) Imperfect information. A more detailed course schedule is posted on CourseLink.

Course Policies

Grading Policies

<https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-grds-proc.shtml>

Course Policy on Group Work:

Group work on assignments are permitted, and encouraged. However, each student must hand in their own assignment.

Course Policy regarding use of electronic devices and recording of lectures

Calculators will not be allowed during the midterm or final exam.

Any recording of lectures (video or audio) requires the permission of the instructor.

The use of cell-phones and laptops during lectures is discouraged.

University Policies

Academic Consideration

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor in writing, with your name, id#, and e-mail contact. See the academic calendar for information on regulations and procedures for

Academic Consideration: <http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community, faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring.

University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. Please note: Whether or not a student intended to commit academic misconduct is not

relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:

<https://www.uoguelph.ca/registrar/calendars/undergraduate/2014-2015/>

Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact Student Accessibility Services as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 56208 or email csd@uoguelph.ca or see the website: <http://www.csd.uoguelph.ca/csd/>

Course Evaluation Information

Please refer to: <https://www.uoguelph.ca/economics/course-evaluation>

Drop date

The last date to drop one-semester courses, without academic penalty, is March 6th, 2015. For regulations and procedures for Dropping Courses, see the Academic Calendar:

<https://www.uoguelph.ca/registrar/calendars/undergraduate/2014-2015/>

Course Learning Outcomes

Skills:

1) **Written communication:** Tests and assignments will feature essay style questions in which game theoretic reasoning is to be used to explain various phenomena in plain English. However, note that game theory is built upon a rigorous mathematical foundation. Translating the underlying math into plain English is an unforgiving process. Thus, the precision with which you write will be evaluated.

2) **Analytical Problem Solving:** A major objective of the course is to equip the student to solve problems analytically, using rigorous arguments. You should not expect many questions that ask you to regurgitate various definitions, but rather questions that test your understanding of the material and your ability to apply it to new problems.

Note: Developing analytical problem solving skills requires practice. Thus, it is extremely important that you participate actively in the tutorials.

3) **Problem solving in a real world context:** In keeping with the above objectives, students will be expected to demonstrate the ability to use game theory to analyse real world problems.

Knowledge:

1) **Mathematical Methodology:** Formally, game theory is the study of decision makers with interacting objective functions. Thus, at a minimum, it is necessary to understand one-variable optimization and to be able to apply it to various problems. To solve problems, and in particular to account for the interaction between agents, elementary algebra is required. See “Analytical Problem Solving”, above.

2) **Statistical and Econometric Methodology:** Basic elements of probability theory, such as the definition of a distribution function and Bayes’ Law.

3) **Microeconomic Modeling:** Imperfect competition, auctions, matching market.