

University of Waterloo
Department of Economics
ECON 392: Strategic Situations and Welfare Economics
Winter 2019 – MW 10:00 – 11:20 – HH 334

Instructor Information

Instructor: Ahmet OZKARDAS

Office: PAS 1049

Office Hours: Tuesday & Thursday 12:30 – 2:00 p.m., or by appointment.

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TA: TBA

General Course Objective

Many economic decisions are made in circumstances where there are no competitive markets. This course introduces students to individual and group choice in such settings. It covers how to model such settings as "games" in both the extensive and strategic form, and introduces the key equilibrium concepts associated with these models. An introduction to considerations in group decision making via cooperative game theory is provided in the last part of the course

Course Goals and Learning Outcomes

This course is a required course for those students doing the Intensive Specialization. As such, we will be developing the mathematical foundations of game theory and social choice. Strong mathematical skills are required.

To get the most out of the course, students are strongly encouraged to attend all lectures, and participate in class discussion. A specific timetable indicating which topics will be discussed on a specific lecture date is provided but our progress will depend on class ability and interest in the lecture materials. For this reason, the contents of each week may change during the semester and the new version will be uploaded on LEARN when necessary.

Recommended Text

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

H.S. Bierman, L. Fernandez, *Game Theory with Economic Application, Second Edition*, Addison Wesley, 1998.

Note that these texts are **recommended, not required**. The course material will follow along with the text somewhat, but will be presented quite differently. A good set of lecture notes is what is really required to do well in this course.

Notes on Office Hours or Contacting Instructor

If a student is not able to meet during office hours, I am open to arranging a mutually convenient appointment via email. When sending email, always use your University of Waterloo email account. "ECON 392" must appear in the subject line and the message must include your full name and student ID number.

Where to find this course outline: This course outline is available at two locations for the duration of the term:

- Department of Economics website
<https://uwaterloo.ca/economics/undergraduate/courses/outlines>
- LEARN web site (requires UW user id and password) <http://learn.uwaterloo.ca>

Please use email for administrative concerns and very brief questions related to the course material. I will be available during office hours, or by appointment, to discuss course material.

Readings Available on LEARN

- Assignments and assignment solutions will be posted on LEARN.
- Lecture notes ARE NOT posted, and are not available from the instructor. Class attendance and note taking are therefore of higher importance than usual. If you think you need to miss a class, be sure to arrange for a colleague to be willing to share notes with you.

Course Requirements and Assessment

Assessment	Date of Evaluation (if known)	Weighting
Assignments (4)	----	20%
Midterm 1	4 February Monday (in class)	20%
Midterm 2	11 March Monday (in class)	20%
Final Exam	Determined by Registrar's Office	40%
Total		100%

There will be no adjustments to the above grading scheme. Especially not for an individual student.

Midterms

Midterms are in class, closed book, no aids of any kind. Due to the nature of the material in the course the second midterm will be "cumulative", that is, material from the first midterm may be tested implicitly in the second, even though it will not be the focus of the test. The weight of a midterm for which a VIF is accepted will be moved to the other midterm and the final exam in equal parts. If you happen to be sick for both midterms you should consider dropping the course.

Assignments

Assignments will be due at the beginning of class on the due date. Late assignments are not accepted. Assignments will be handed out 5-7 days in advance of the due date, while the material is covered in lectures. Due to the extended time for completion, medical notes will usually not be accepted. To give an idea about the due dates, please see the following table:

	Due date
<i>Assignment 1</i>	28 th January
<i>Assignment 2</i>	25 th February
<i>Assignment 3</i>	18 th March
<i>Assignment 4</i>	3 rd April

Final Exam

The final exam is cumulative and will test all of the material in the course. It is closed book, no aids. The final exam is scheduled by the Registrar's office during the final examination period. Travel plans are not an acceptable reason to reschedule a final exam. Also note that the final will not be rescheduled under any circumstances if both midterms have been missed. You should by now be familiar with the deferred final exam policy of the department.

Course Outline

This class schedule is ambitious. Modifications and/or eliminations of certain content might be required given our limited time together. Any necessary modifications or eliminations to the course content will be communicated to you in the regular class period.

Part 1: Static Games with Complete Information

1. Strategic Form and Nash Equilibrium

Recommended Readings: Osborne Ch2: 13-53; BF Ch 1: 3-32

2. Mixed Strategies

Recommended Readings: Osborne Ch 4: 99-150

3. Continuous Action Space

Recommended Readings: Osborne Ch 3: 55-97; BF Ch 2: 3-32

Part 2: Dynamic Games with Complete Information

1. Extensive Form Games and Backward Induction

Recommended Readings: Osborne Ch 5-6-7:153-236

2. Subgame Perfect Equilibrium

Recommended Readings: Osborne Ch 5-6-7:153-236; BF Ch 6: 121-143

3. Bargaining

Recommended Readings: Osborne Ch 16:465-491; BF Ch 7: 149-164

Part 3: Games with Incomplete Information

1. Bayesian Nash Equilibrium

Recommended Readings: Osborne Ch 9:273-311; BF Ch 13: 271-284

2. Perfect Bayesian Equilibrium

Recommended Readings: Osborne Ch 10:313-357; BF Ch 15: 315-341

Part 4: Welfare Applications

1. Property Rights and Efficiency

Recommended Readings: BF Ch 4: 76-94

2. Voting Games

Recommended Readings: BF Ch 5: 98-106

3. Uncertainty, Expected Utility and Moral Hazard

Recommended Readings: BF Ch 10-11-12: 207-262

Important Notices

Late Work

Assignments are due by the end of class on the due date given. Late assignments received less than 24 hours after the deadline will be given a 25% penalty. Assignments received after 24 hours will not be marked.

Examination Policy

- No deferred or make-up midterm test. If the illness can be documented with a UW Verification of Illness Form (the only acceptable document), with approval you may transfer the weight of the missed midterm to the final exam. This remedy is a privilege and not a right. Immediately upon your return, please deliver to me a **hard copy** of your medical document. Otherwise, a mark of zero will be given to the missed test. The midterm schedule is set and will not be changed for any reason.
- Late submission of exam papers is not accepted and missed submissions will receive a grade of zero for whatever reason. Exam papers must be submitted in whole and on time in the exam room. Exam papers
 - not submitted on time,
 - submitted with missing pages,
 - submitted elsewhere, with the exception of students with permission to write in the AS Office,
 - or not received at all will receive a grade of zero for whatever reason.

Electronic Device Policy

It is acceptable for students to bring laptops to class, especially for the purposes of taking notes. Please make sure your cell phones are on silent, however.

Attendance Policy and Classroom Protocols

- While the recommended textbook covers most of the material of this course, it does so in a manner that is different (and complementary) to the lectures. The assignments and exams will be based on the material as it is presented in the lectures. As such, students are strongly encouraged to attend all classes and take good notes.
- To maintain a classroom environment that is conducive to learning, students are expected to have the highest level of courtesy and professional behavior. Students must be punctual. If you know that you have to leave early, seat yourself near an exit. Please turn off all audible ringers on phones and other electronic devices while in class.

Economics Department Deferred Final Exam Policy

Deferred Final Exam Policy found at <https://uwaterloo.ca/economics/undergraduate/resources-and-policies/deferred-final-exam-policy>

Cross-listed course

Please note that a cross-listed course will count in all respective averages no matter under which rubric it has been taken. For example, a PHIL/PSCI cross-list will count in a Philosophy major average, even if the course was taken under the Political Science rubric.

Academic Integrity

In order to maintain a culture of academic integrity, members of the University of Waterloo are expected to promote honesty, trust, fairness, respect and responsibility. See the [UWaterloo Academic Integrity](#) webpage and the [Arts Academic Integrity](#) webpage for more information.

Discipline:

A student is expected to know what constitutes academic integrity, to avoid committing academic offences, and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about “rules” for group work/collaboration should seek guidance from the course professor, academic advisor, or the Undergraduate Associate Dean. When misconduct has been found to have occurred, disciplinary penalties will be imposed under Policy 71 – Student Discipline. For information on categories of offenses and types of penalties, students should refer to [Policy 71 - Student Discipline](#). For typical penalties check [Guidelines for the Assessment of Penalties](#).

Grievance:

A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. [Read Policy 70 - Student Petitions and Grievances](#), Section 4. When in doubt, please be certain to contact the department’s administrative assistant who will provide further assistance.

Appeals:

A decision made or penalty imposed under Policy 70 - Student Petitions and Grievances (other than a petition) or Policy 71 - Student Discipline may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to [Policy 72 - Student Appeals](#).

Accommodation for Students with Disabilities

Note for students with disabilities:

[The AccessAbility Services office](#), located on the first floor of the Needles Hall extension (1401), collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the AS office at the beginning of each academic term.

If you are using Turnitin® in your course Turnitin.com:

Text matching software (Turnitin®) will be used to screen assignments in this course. This is being done to verify that use of all material and sources in assignments is documented. Students will be given an option if they do not want to have their assignment screened by Turnitin®. In the first week of the term, details will be provided about arrangements and alternatives for the use of Turnitin® in this course. Note: students must be given a reasonable option if they do not want to have their assignment screened by Turnitin®. See [guidelines for instructors](#) for more information

Mental Health Support

All of us need a support system. The faculty and staff in Arts encourage students to seek out mental health supports if they are needed.

On Campus

- Counselling Services: counselling.services@uwaterloo.ca / 519-888-4567 ext 32655
- [MATES](#): one-to-one peer support program offered by Federation of Students (FEDS) and Counselling Services
- Health Services Emergency service: located across the creek from Student Life Centre

Off campus, 24/7

- [Good2Talk](#): Free confidential help line for post-secondary students. Phone: 1-866-925-5454
- Grand River Hospital: Emergency care for mental health crisis. Phone: 519-749-433 ext. 6880
- [Here 24/7](#): Mental Health and Crisis Service Team. Phone: 1-844-437-3247
- [OK2BME](#): set of support services for lesbian, gay, bisexual, transgender or questioning teens in Waterloo. Phone: 519-884-0000 extension 213

Full details can be found online at the Faculty of ARTS [website](#)

Download [UWaterloo and regional mental health resources \(PDF\)](#)

Download the [WatSafe](#) app to your phone to quickly access mental health support information

Territorial Acknowledgement

We acknowledge that we are living and working on the traditional territory of the Attawandaron (also known as Neutral), Anishinaabeg and Haudenosaunee peoples. The University of Waterloo is situated on the Haldimand Tract, the land promised to the Six Nations that includes six miles on each side of the Grand River.