

**PhD Microeconomic Theory II
ECO 7924**

**Professor Guidon Fenig
Winter, 2025**

COURSE OUTLINE

Class schedule: Monday, 11:30 – 14:20, FSS 4014

Office hours: Monday, 09:30 – 10:30, FSS 9057

INSTRUCTOR INFORMATION

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TA

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Office Hours: TBD

OFFICIAL COURSE DESCRIPTION

Topics may include game theory, information economics, externalities and public goods.

COURSE LEARNING OUTCOMES

To build upon basic concepts learned in the Introduction to Microeconomics course in order to develop a more profound understanding of the field.

TEACHING METHODS

In this course, we will cover the theory and concepts during class sessions. These will be complemented by additional numerical exercises, which will be posted online, and occasionally by experiments designed to reinforce the theoretical concepts discussed in class.

SUGGESTED MATERIAL

Strategy: An Introduction to Game Theory (Third Edition) by Joel Watson, Norton, 2013.
Note: The cost of this book is \$141 + tax on Amazon.

ASSESSMENT STRATEGY

Problem Sets

You will have to solve five problem sets through the course. Each will account for 7% of your final grade. These will be submitted via Crowdmark. The schedule of due dates for the problem sets are as follows.

Problem Set	Deadline
#1	January 22 at 23:59
#2	February 7 at 23:59
#3	March 5 at 23:59
#4	March 20 at 23:59
#5	April 1 at 23:59

Crowdmark

- Crowdmark is an online grading and analytics platform that helps educators evaluate students' work more effectively. The platform allows for easy distribution and collection of student work, offers tools for the assembly and management of grading teams, and provides an online workflow that streamlines grading and rich feedback delivery to students.
- All assignments are due at 23:59 on their respective due dates.
- In order to receive a graded, submissions must be uploaded to the correct questions in the proper orientation. Submissions must be double checked on a computer to ensure the orientation is valid and is legible.
- If you do not complete a problem set by the due date, you will receive a zero for it. The only exceptions to this policy will be due to illness and it will have to be justified. In the event of such a justified reason for missing the deadline: for problem sets, I will simply drop the missed assignment from your final grade and re-weight the rest of the course proportionally.

- If you have technical difficulties uploading your answers, you should send the pictures with your answers to gfenig@uottawa.ca before the deadline. Otherwise, you will be given a 0.

Grading the Problem Sets

Since there will be multiple problem sets, I will randomly select two problems from each set for grading. To receive full credit, you must submit a completed problem set. If a set contains n problems, one problem will be selected with a probability of $1/n$, and the second with $1/(n-1)$.

Your grade will be divided equally between two components:

1. **Completeness** (50%): This is based on how many of the non-graded problems you solve completely.
2. **Correctness** (50%): This is based on the accuracy of your solutions to the two randomly selected problems (25% each).

For example, suppose a problem set contains seven problems, and I select the first two problems for grading. If you submit complete solutions to four of the remaining five problems, your completeness grade would be $4/5$. If you score 60% on the two graded problems, your correctness grade would be 0.6. Your overall grade for the problem set would then be:

$$\frac{1}{2}(0.6) + \frac{1}{2}(0.8) = 70\%$$

Detailed solutions will be provided for all problems to support your self-review, but feedback will only be given on the two graded problems.

Exams

There will be one midterm test, held during **scheduled** class time (February 10). The test is valued at 30%, and the final exam is worth 35% of your final grade. All evaluations are administered in person.

NOTE: There will be NO deferred midterm examinations. If you must miss the midterm for a legitimate reason (illness, bereavement), then the final exam's weight will be increased to 55% and the Problem Sets will be worth 45% (9% each).

Components of Final Mark

Evaluation format	Weight
Problem Sets	35% (7% each)
Midterm	30%
FINAL	35%

If you miss the midterm or final exam, you must complete the appropriate form and provide the required documentation. For more information, please refer to the “Missed Exams and Requests for Deferral” section on page 6.

Mathematics

A strong foundation in mathematics is necessary for you to be successful in this class. This foundation is defined by our entry requirements to the PhD program and the material that is taught in ECO 7119. The entry requirement to the PhD program is a Master's degree in Economics. This means that, at a minimum, a student should have mastered the mathematics reviewed in Chapters 26 and 27 of "Microeconomic Analysis" by Hal R. Varian.

Attendance

Attendance for each in class session is mandatory.

POLICY ON THE EIN (INCOMPLETE)

In all economics courses, students who fail to complete work (either a single piece of work or a combination of work) worth a total of 25% or more of the final grade will receive a grade of EIN in the course. The EIN grade is equivalent to a failure mark (F). See Regulation A-3

(<https://www.uottawa.ca/about-us/policies-regulations/academic-regulations/a-3-grading-system>) for details. Please note that a denied request for a deferral may therefore lead to failing the course.

Students who have not completed evaluations worth at least 25% of the total course grade by **March 21** must withdraw from the course. Otherwise, they will receive an EIN grade and will automatically fail the course.

CURRICULUM

DETAILED SCHEDULE:

DATE	Topic	Chapters
Jan 6	Introduction: representing games, strategies	Watson 1-5
Jan 13	Static games: best responses, rationalizability	Watson 6-8
Jan 20	Nash Equilibrium and Applications	Watson 9-10
Jan 27	Static games: other equilibrium topics	Watson 11-12
Feb 3	Dynamic games: Extensive form, backwards induction, subgame perfection	Watson 14-15
Feb 10	MIDTERM	
Feb 17	No Class Reading Week	
Feb 24	Bargaining Games	Watson 18-19
Mar 3	Repeated Games	Watson 22-23
Mar 10	Information: incomplete information Bayesian Nash Equilibrium	Watson 24 and 26
Mar 17	Auctions	Watson 27
Mar 24	Perfect Bayesian Equilibrium	Watson 28
Mar 31	Review Session	

Please Note: I reserve the right to change the order of the topics should the need arise. I may add additional readings if appropriate and may eliminate parts of the topics if time becomes too constraining.

INDIGENOUS AFFIRMATION

ANISHINÀBE

Ni manàdjiyànànig Màmìwinini Anishinàbeg, ogor kà nàgadawàbandadjig iyo akì eko weshkad. Ako nongom ega wikàd kì mìgiwewàdj.

Ni manàdjiyànànig kakina Anishinàbeg ondaje kaye ogor kakina eniyagizidjig enigokamigàg Kanadàng eji ondàpinangig endàwàdjìn Odàwàng.

Ninisidawinawànànig kenawendamòdjig kije kikenindamàwin; weshkinìgidjig kaye kejejàdizidjig.

Nigijeweninmànànig ogor kà nìgànì sòngideyedjig; weshkad, nongom; kaye àyànikàdj.

[Listen to the audio file](#)

ENGLISH

We pay respect to the Algonquin people, who are the traditional guardians of this land. We acknowledge their longstanding relationship with this territory, which remains unceded.

We pay respect to all Indigenous people in this region, from all nations across Canada, who call Ottawa home.

We acknowledge the traditional knowledge keepers, both young and old.

And we honour their courageous leaders: past, present, and future.

TIME COMMITMENT

In order to succeed in a 3-credit course, alongside the standard 3 hours of in-class instruction, students should expect to spend a minimum of 6 hours per week outside of the classroom engaged in activities related to the course, e.g. homework, reading, studying, etc., and should expect a minimum time commitment of 9 hours per week per course (on average).

MISSED EXAMS AND REQUESTS FOR DEFERRAL

As per [Academic Regulation A-8](#), absence from any examination on medical grounds or due to exceptional personal circumstances, must be reported by submitting the online [Declaration of Absence from an Evaluation](#) form within the five (5) following working days of the examination. If a deferred evaluation is granted for the final exam, the evaluation must take place as soon as possible, but no later than three (3) months.

Students who defer the final exam will be required to write a deferred evaluation.

A \$60 administrative fee will be charged for each submission of the Declaration of Absence from an Evaluation form.

All students must write the final exam of the course.

Deferred final examinations will take place on **May 10, 2025.**

Students should reflect deeply before requesting a deferred evaluation. Students who are struggling to keep up with their schedule may find it worthwhile to withdraw from the course and take it again at a later date. For further information on withdrawing from the course, consult the link <https://www.uottawa.ca/course-enrolment/withdrawing-from-a-course>.

LANGUAGE EXPECTATIONS

This course is delivered in English, and in class interactions, including the online discussion boards, and feedback will also be managed in English. As part of your evaluation will be on your writing abilities, it is recommended to take the appropriate measures to avoid mistakes such as spelling, syntax, punctuation, inappropriate use of terms, etc. You may be penalized up to 15% for poorly written materials, to the professor's discretion.

ARTIFICIAL INTELLIGENCE (AI) AND ACADEMIC INTEGRITY

Usage of Artificial Intelligence software or tools is permitted in this course to complete writing assignments. Students may use AI generated text in your written submissions without using quotation marks. However, students are required to identify text that has been generated by Artificial Intelligence within their written work, for example by using a different text colour.

MOBILE DEVICES

Unless explicitly requested, please refrain from using mobile devices during class. As in class time is quite limited, I would ask that you prioritize using this time to engage with class discussions and other content-related activities. Active participation and engagement with the content and your peers helps ensure full participation marks for your contributions this semester.

LATE ASSIGNMENTS

All assignments are to be submitted by their due date and time otherwise they will be given a zero (0%) grade.

Exceptions are made only for illness or other serious situations deemed as such by the instructor. University regulations require all absences from exams and all late submissions due to illness to be supported by a medical certificate. Absence for any other serious reason must be justified in writing, to the professor, within five business days following the date of the exam or submission of an assignment.

The Faculty reserves the right to accept or refuse the reason; **reasons such as travel, jobs, or any misreading of the examination timetable are not acceptable.**

EXAM CONFLICTS

- Any conflict with a midterm exam schedule should be reported to the Professor at the beginning of the term. This request is especially applicable to the type 3 conflict (two in-class exams back-to-back) for students with special learning needs.

- Any conflict with a final exam schedule should be reported to the Faculty's undergraduate office as soon as the final examination schedule is released.

Important additional information: This information is also available on the Faculty of Social Sciences website, on the [Student Hub](#) webpage under «[Ressources, administrative policies and academic Regulations](#) »

- **Intellectual Property Rights of Course Content:** The professor retains copyright to all material created as part of their course, including online courses, unless they have entered into another copyright agreement. Visit the [Copyright Office webpage](#) or consult your professor.
- **Health and wellness:** There are many [resources available](#) to help you.
- [Student Health and Wellness Centre](#)
- [Academic support](#)
- **Institutional Policies and Academic Regulations:** It is very important to know the institutional [policies and academic regulations](#) associated with your academic success. Listed below are some of the key academic regulations you should familiarize yourself with:
 - **Academic Integrity and Academic Misconduct:** If you would like clarification regarding academic integrity and misconduct, please consult [Academic Regulation A-4](#) or consult your professor.

Bilingualism at the University of Ottawa: Per [Academic Regulation A-1](#) : « Except in programs and courses for which language is a requirement, all students have the right to produce their written work and to answer examination questions in the official language of their choice, regardless of the course's language of instruction.»