

# ECON 3060: MICROECONOMIC THEORY 2

Spring 2023

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<b>Instructor:</b>	Gabriel Ziegler
<b>Instructor email:</b>	<a href="mailto:gabrielziegler@pitt.edu">gabrielziegler@pitt.edu</a>
<b>Lecture Times:</b>	TuTh 10:30am–11:45am
<b>Lecture Location:</b>	4940 WW Posvar Hall
<b>TA:</b>	Nicolas Pastrian
<b>TA Email:</b>	<a href="mailto:nip59@pitt.edu">nip59@pitt.edu</a>
<b>Recitation Times:</b>	Fr 1:00pm–2:15pm
<b>Recitation Location:</b>	4900 WW Posvar Hall

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**Course Page:** The course website is available in Canvas: <https://canvas.pitt.edu/>. All course materials will be posted on Canvas.

**Class Communications:** All announcements will be posted on Canvas. It is the students' responsibility to monitor Canvas regularly.

**Office Hours:** Gabriel Ziegler: Tuesday 3:30–5:00pm at 4925 WW Posvar Hall.

Nicolas Pastrian: Wednesday 1:00–3:00pm at 4703 WW Posvar Hall.

*On office hours:* Never ever be shy to ask questions! There are no 'dumb' questions (and correspondingly, there are also no 'smart' questions).

Please try to attend the instructor's or TA's office hours in groups to create positive spillover effects with your peers. If you understand an exercise, a theorem, an example, etc. better because you were in the office hour, and you know it was a 'mystery' to others as well, please share your deepened understanding with your other classmates.

**Literature References:** We will follow very closely the lecture notes of William H. Sandholm (2019) on *Game Theory and Information Economics*. You can find an online version here: [Online LINK](#).

Furthermore, you can find some helpful background material from these two online sources:

- Battigalli, *Mathematical Language and Game Theory*, [Online LINK](#), 2020.
- Battigalli, Catonini, and De Vito *Game Theory: Analysis of Strategic Thinking*, [Online LINK](#), 2020.

All these three pdfs will be available on Canvas too.

A collection of 'classical' books which cover game theory methods follows. Some are more basic and some others are more advanced. You are encouraged to consult them whenever you find them helpful.

- Gibbons, *Game Theory for Applied Economists*, 1992.
- Osborne, *An Introduction to Game Theory*, 2003.
- Mas-Colell, Andreu, Michael Whinston, and Jerry Green, *Microeconomic Theory*, 1995.
- Osborne and Rubinstein, *A Course in Game Theory* 1994.
- Ok, *Real Analysis with Economic Applications*, Princeton University Press, 2007.

**Objectives:** This is the second semester of the first year PhD program. Unlike the first semester, which focused on perfectly competitive markets, we will study complications due to market power and incomplete information. The tool we use to study those markets is game theory. We will begin the course by covering games of complete information, first in a static then a dynamic setting. We will then study static and dynamic games of incomplete information. With these tools we will explore topics in information economics including adverse selection, moral hazard, signaling and communication, and the design of mechanisms and information.

**Very important:** Have a look at the relevant parts of Sandholm's lecture notes on your own before every lecture! Looking up concepts before the class is very helpful. Plan to prepare before and after each lecture on the material of the respective lecture.

**Grading Policy:** Weekly problem sets (worth 30% in total), one midterm (worth 30% each) and one final exam worth 40% in total. The problem set grade will be calculated after dropping the lowest two problem set scores. The problem sets will usually be due before the recitation on Friday. Submissions need to be in written/paper form (see below). Submissions typed up in Tex/Lyx are encouraged, but not required.

Details on the format of exams will be announced soon. Any concerns about the way either exam was graded must be expressed in writing within two weeks of the exam being returned. If a correct answer was marked as incorrect I will award points to that question, but I will not reconsider the allocation of partial credit for incorrect answers.

**On Problem Sets:** You need to make sure that everything is readable when you scan/take a picture of your submission. Unreadable answers will be treated as unanswered submissions. Thus, again, submissions typed up in Tex/Lyx are highly encouraged, which will turn out to be really helpful for your research later on.

Discussion with other students is allowed and very much encouraged. In fact, *you are encouraged to submit in groups*, ideally with a size of 3 students, but definitely not more than 4 students per group. If you submit as a group, make sure to mention all group participants clearly on the submission. Discussions, but not submissions, about the problem sets beyond the group are allowed too.

**Make-up exams/late submissions/extensions:** For problem sets, there will be strictly no late submission or extensions. As solutions to problem sets will be posted automatically right after the due date (and time) any late submission is not accepted. Since the two worst problem sets will not count towards the grade, a missed problem set is not the end of the world. For the midterm, there will be no make-up exams. If you miss (for whatever reason) the midterm the 30% will be added to the weight of the final exam. That is, if you miss the midterm, your final exam will be worth 70% of your overall grade.

### Important Dates:

- January 10th: first day of class
- January 26th (preliminary; look out for Canvas announcement): No class
- March 2, Midterm 1 in class.
- March 5–11: Spring break. No classes.
- April 20: Last class
- Final Exam: during the final examination period as determined by Registrar's office.

**Recitations:** Recitation sessions are an important part of the course, because they provide an opportunity to review the material and deepen its understanding. These sessions will be used to solve the exercises related to the topics covered in the lectures and to elaborate on problem sets. In the spirit that 'you learn better through learning-by-doing', students may be asked to solve or contribute for the solution of certain exercises from the problem sets in the white/blackboard.

**Academic Integrity:**

- Cheating/plagiarism is not tolerated. Students suspected of violating the University of Pittsburgh Policy on Academic Integrity, from the February 1974 Senate Committee on Tenure and Academic Freedom reported to the Senate Council, will be required to participate in the outlined procedural process as initiated by the instructor. A minimum sanction of a zero score for the problem set or exam will be imposed. View the complete policy at [www.cfo.pitt.edu/policies/policy/02/02-03-02.html](http://www.cfo.pitt.edu/policies/policy/02/02-03-02.html)
- Sharing class materials, including problem sets and exams on the internet is a violation of academic integrity.

**Disability Services:** If you have a disability for which you may be requesting an accommodation, you are encouraged to contact me and also the Office of Disability Resources and Services, 140 William Pitt Union, 412-648-7890/412-624-3346(Fax), as early as possible. For more information visit [www.studentaffairs.pitt.edu](http://www.studentaffairs.pitt.edu).

**Statement on Classroom Recording:** To ensure the free and open discussion of ideas, students may not record classroom lectures, discussion and/or activities without the advance written permission of the instructor, and any such recording properly approved in advance can be used solely for the student's own private use.

**Acknowledgment:** Gabriel is grateful to Richard Van Weelden for providing access to his materials from previous versions of this course.