

# Economics 329: Experimental Economics

Northwestern University; 2024 Fall, Mon/Wed 3:30-4:50 pm; Tech M164

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TA: Tomer Novikov (tomernovikov2027@u.northwestern.edu)

Office Hours posted on Canvas; and always by appointment, so just email to arrange.

Optional Textbook: “Markets, Games, and Strategic Behavior” by Charles Holt. Reference only; do not buy.

## *Objective*

The primary objective of this course will be to use economic laboratory experiments – essentially interactive classroom activities – to (1) help you learn and solidify canonical economic theories, (2) give you insight into why and how models predict outcomes well and/or poorly, and (3) allow you to design and evaluate experiments, and (4) develop your skills in analyzing data and presenting results. In particular, this class will improve your ability to use economic analysis on *real* data that you and your classmates generate and collect during the quarter.

## *Grades*

Your grade will be based on five parts worth an equal amount: Problem Sets, three closed-note quizzes, open-note final exam, group project, and participation.

- Weekly problem sets (sometimes done in groups): 5%
- Group-Project (Participation and Presentation): 10%
- Individual Project Write-Up (including potential oral questions): 20%
- Three Tests: 65% (20% for each midterm exam, 25% for slightly longer final exam)

## *Problem Sets*

You will submit Problem Sets online Sunday night before class, though you are highly encouraged to start and even try to finish on Friday. Problem sets will generally be done in groups of 2-3. Even if groups calcify during the quarter, there is no formal obligation to remain with the same group. Also, your project group should be different from your problem-set groups. You are discouraged from working alone though it is allowed.

Problem sets will typically consist of one to two questions that you will submit, along with other practice problems that you do not need to submit. Problem sets will only be scored for effort, though when possible we will point out clear mistakes in methodology. Any technology that you use (whether regression in R or coding help from Claude) should be stated clearly. And generally speaking, the only real taboo is to submit work that you do not understand because either (i) somebody else did it, (ii) you copied from a classmate or past solution, or (iii) you used a tool (especially A.I.) that produces work that you do not understand. In short, the act of submitting is a claim to us that you have thought about the questions and understand your solutions; any clear and obvious evidence to the contrary will lead to a grade reduction.

## *Tests*

Exams will cover material (sometimes even stuff from student presentations) from the previous weeks. They will typically consist of a short closed-everything, paper-and-pencil portion, plus an exercise on your computer. If you can solve each of the problem-set questions on your own and have paid attention in class then you should be reasonably well-prepared.

- Week 4: Oct 16
- Week 8: Nov 13
- Finals Week: Dec 9 at 3:00 pm

## *Project*

The main project will be collaborative and done in groups of up to four -- except for the final write-up, which will be done individually. You will run an experiment during lecture/section, analyze the results, and present them to the class the following week. See “Project Guidelines” on Canvas for more details. Finally, while this will not apply to everybody, we may ask to meet for 5-10 minutes by Zoom to ask questions about your final write-up after it has been submitted.

### *Participation*

Engagement during class and section will not go unnoticed by the professor and the TA. Your performance in experiments will mostly be a way to show that you have stayed engaged. Top scorers will be recognized with a few bonus participation points; mostly, just try not to be a low scorer due to non-participation or chronic lack of effort. Also, failure to follow directions may result in a lower participation score. Finally, for problem sets and the project, you will fill out a short survey with regards to how your group worked together. In some situations we may look at answers to these surveys with regards to your participation grade.

### *Friday Sections*

You should clear out your schedule so that you can attend on Friday. More details about all of this will be clearly communicated during the quarter (hopefully in the first week). We fully expect you to miss up to one Friday section; two is not ideal but okay. If you need to miss three or more then you are encouraged to take the class at another time. Please discuss individual circumstances with the professor.

### *Computers*

You will sometimes need to have a laptop computer to participate in this class (though often a smartphone works). It will be easiest to bring your computer to each class and section since it will be used frequently. Also, when you are not using your computer, please close it and put it away.

### *Schedule of Topics*

#### **Weeks 1 - 3: Markets and Equilibrium**

Design, identification, and statistical inference  
Presentation guidelines  
Supply and Demand; General Equilibrium

#### **Weeks 4 - 6: Games (sequential and simultaneous)**

Power calculations  
Regression with interaction, log, and quadratic terms  
Mixed-strategy equilibrium

#### **Weeks 7 - 9 : Individual Choice and Selected Topics**

Possibilities: Lotteries, auctions, lemon markets  
Practice for final exam

### *Possible Experiments*

**Bold** will likely be played in class at some point. *Italicized* exist in Veconlab and so are also good for student projects.

- Markets: **Pit Market**, *call market*, *double auction*, **lemons market**, labor markets, **general-equilibrium trade game**,
- Games: **Ultimatum/dictator game**, *trust game*, *prisoner's dilemma*, *coordination game*, *traveler's dilemma*, **guessing game (p-beauty contest)**, *centipede*, *voluntary contribution*, *gift exchange*, *any 2x2 game*, *auctions (first-price, second-price, all-pay, common-value)*, cheap talk, Bertrand (price) competition, Cournot (quantity) competition.
- Other: **Risk preference**, time preference, *information cascades*, *asset markets*, *vertical monopolies*, anything else you figure out how to implement.

This course follows the [Northwestern University Syllabus Standards](#). Students are responsible for familiarizing themselves with this information.