

# Economics 329: Experimental Economics

Northwestern University; 2022 Fall; Schapiro 101B

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Office Hours posted on Canvas; and by appointment.

Optional Textbook: “Markets, Games, and Strategic Behavior” by Charles Holt. Reference only; do not buy. I have a copy I may lend groups as they prepare for their project.

## *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.

## *Problem Sets (10% of final grade)*

You will submit Problem Sets online Monday. 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. You are discouraged from working alone though it is allowed. Problem sets will typically consist of one to two questions that you will submit (some to be graded, some simply checked for effort), along with other practice problems that you do not need to submit.

## *Exams (50%)*

Tests will become ever longer and more involved as the quarter progresses. The exact format (calculators, notes, computers) will also depend on the content to be covered; sometimes it will be a mix. I will do my best to make sure the expectations are clear for each test. Overall these exams will constitute 60% of your grade.

[Approximate grade weights shown in brackets]

- Test 1 (“quiz”), Thu, Oct 6 (week 3) [~1/7]
- Test 2 (“quiz”), Thu, Oct 27 (week 6) [~1/7]
- Test 3 (“midterm”), Thu, Nov 10 (week 8) [~2/7]
- Test 4 (“final exam”) [~3/7], date to be announced in class.

## *Project (20%)*

The main project will be collaborative and done in groups of up to three.<sup>1</sup> You will run an experiment during section on Friday, analyze the results, and present them to the class the following week. See “Project Guidelines” on Canvas for more details.

## *Participation (20%)*

The most important thing is that you come to class, especially required sections on Friday. In addition, 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. 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 (*not* your problem set or project grade). Also, an individual problem set at the end of the quarter will count towards your participation grade, rather than your problem set grade.

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<sup>1</sup> Updated based on enrollment this Fall.

### *Friday Sections*

You are expected to attend a majority of the six Friday sections in the middle of the quarter (Oct 7 - Nov 11, with Nov 18 only if needed) so that you can be a participant in other people's experiments. If you need to miss one of these sections, that is okay, though you should have a valid reason and you should let everybody know in advance (and there will be a small make-up assignment). If you need to miss two or more, you should talk to me right away as it may not make sense for you to take the class this quarter.

### *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 since it will be used frequently. Also, when you are not using your computer, please close it and put it away. You will always need a computer in section.

### *Weekly Schedule*

- Tuesday: Student presentation(s) based on experiments from previous week; Lecture and/or quick experiment.
- Thursday: Test on some days; student presentations; lecture/discussion.
- Friday (Oct 6 - Nov 11): Experiments run by students; Zoom office hours in the afternoon that sometimes includes recorded example.

### *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 (though groups are free to run on Friday as well). *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.

[Official university policies](#) apply in this class.