ECON 491: Market Failures & Remedies
Course Syllabus

Théo Durandard

Spring 2025

Basic Information

Credits: 3 undergraduate hours, or 4 graduate hours
Meeting Times: Tuesdays and Thursdays, 11:00AM - 12:20PM
Instructor: Théo Durandard
Email: theod@illinois.edu
Office Hours: Wednesdays, 10:00AM - 11:00AM in DKH 216

Course Description

Economists typically believe that unless there is a specific reason to expect a market to fail, it will likely work well. In this course, we will try to understand why most economics hold the initial presumption that markets work. In doing so, we will uncover several canonical threats to markets and develop a simple typology of market failures: (i) Externalities and pricing failures, (ii) Participation and inefficient matches, and (iii) Asymmetric information and inefficient allocation. In each case, we will try to understand whether a planner or regulator could alleviate the market failures. That is, we will not limit ourselves to studying existing markets but also think about how to design (or redesign) poorly performing ones. This is known as Mechanism and Market design. We will approach these issues from a theoretical perspective and examine real-world applications.

Topics covered

We will cover a subset of the following topics.

1. **Markets.**

   - Walrasian Markets
   - First Welfare Theorem
   - Second Welfare Theorem
   - Transaction costs and the Coase Theorem

2. **Matching Theory**

- Two-sided markets: Deferred-acceptance
- One-sided markets: Top Trading Cycles

3. **Adverse Selection and Mechanism Design.**

- Market for "lemons"
- Revelation principle
- VCG mechanisms

Evaluation

I will assign four problem sets during the quarter. Each will consist of 4 questions and be worth 8 points (2 points per question). Any attempted question will give you one point automatically. There will be two midterm exams. The midterms will be open-book. They will consist of problems similar to the one on problem sets and questions on the material we covered. Each will each consisting of 3 questions, worth 6 points each. You will also have to prepare one in-class 30-minute presentation on a topic related to the class by group of (at most) 3. The presentation will be worth 35 points. Finally, participation throughout the class will be graded on 7 points.

For students taking the course for four credit hours only: On top of presentation, you will write a short ($\sim$ 5 pages) paper summary of your presentation that include a formal model/description of the problem you study; i.e., who are the "players", what do they do, what assumptions would you make, what the mechanism looks like, do you think it can be improved upon, . . .

Your semester grade will computed as follows: I will sum your grade on the problem sets, your two midterm grades, the grade on your presentation, and your participation grade to obtain your individual score. Your grade will be the minimum of your obtained score and 100. This means that there is a minimum of 10 bonus points for the class.

   Neither the grading scale (how numerical scores translate to letter grades) nor the distribution of final grades is fixed ahead of time. Letter grades depend on a mix of absolute and relative performance. Therefore, I cannot show a fixed grading scale or a target grade distribution ahead of time. However, I expect a semester grade of over 90 to translate to an A, over 80 to translate to a B, and over 65 to translate to a C.
   (Again remember that this is my expectation prior to the class. The final cutoffs between grades may vary significantly from these expected cutoffs depending on the difficulty of the midterm and problem sets I come up with, and on the class performance.)

Prerequisites

The formal prerequisites are ECON 302, ECON 437, and MATH 220/221. Technically speaking, only a basic knowledge of elementary calculus and probability theory is required. However, this class can be abstract. You should feel comfortable with standard mathematical reasoning.

Readings

Slides will be posted before class. Along with the problem sets, they will contain all the material you are responsible for. As the class progresses, I will also suggest additional blog posts, news articles, research articles, and podcasts, which you will find on Canvas. These readings are optional (in that you are not required to do them to pass the class). However, they may be useful to master the material. And I certainly do not expect that you will memorize and digest the entire articles. What I suggest is that you read the Abstract, Introduction and Conclusion so that you can answer the following questions:

- What is the research question?

- How did the authors go about answering the question (i.e., what was the research design)?

- What conclusions did they reach?

Class schedule (subject to changes)

Week	Date	Topic	Important
		Introduction	
1	1/21	Regulation in Markets, The Minimum Wage Debate *Suggested Readings:* "The Economist as Engineer" by Alvin Roth	
	1/23	The Minimum Wage Debate (continued) *Suggested Readings:* Card, David, and Alan B. Krueger. "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania." The American Economic Review 84, no. 4 (1994): 772–93; Naidu, Suresh, and Eric A. Posner. "Labor Monopsony and the Limits of the Law." Journal of Human Resources 57.S (2022): S284-S323.	
2	1/28	Welfare Economics: Social Choice, Pareto Efficiency *Suggested Readings:* "The Olympics of Voting", Forbes, July 16, 2012	**HW1 posted**
		When are Markets Efficient?	
	1/30	Walrasian Markets, Competitive Equilibrium, Edgeworth Box	
3	2/4	Why do economists like markets? First and Second Welfare Theorems	
	2/6	Application: Gains from Trade in Kerala *Suggested Readings:* Jensen, Robert. "The Digital Provide: Information (Technology), Market Performance, and Welfare in the South Indian Fisheries Sector." The Quarterly Journal of Economics 122, no. 3 (2007): 879–924.	
4	2/11	Uncertainty: Asset Markets and Market for Risk	**HW1 due**
	2/13	Game Theory Review *Suggested Readings:* Tadelis, Chapters 3, 5, 6, 7, and 12	**HW2 posted**
5	2/18	Market failures: Externalities, Coase Theorem *Suggested Readings:* Coase, Ronald Harry. "The problem of social cost." The journal of Law and Economics 56.4 (2013): 837-877; McCloskey, Deirdre. "The so-called Coase theorem." Eastern Economic Journal 24.3 (1998): 367-371; Hornbeck, Richard. "Barbed Wire: Property Rights and Agricultural Development." The Quarterly Journal of Economics 125, no. 2 (2010): 767–810.	
	2/20	Market failures: Gaming and Market Power *Suggested Readings:* Budish, Eric, Peter Cramton, and John Shim. "Implementation details for frequent batch auctions: Slowing down markets to the blink of an eye." American Economic Review 104.5 (2014): 418-424; Budish, Eric, Robin S. Lee, and John J. Shim. "A Theory of Stock Exchange Competition and Innovation: Will the Market Fix the Market?." Journal of Political Economy 132.4 (2024): 1209-1246.	
6	2/25	**No class**	**No class + HW2 due**
	2/27	**First in class midterm**	**Midterm 1**

		Moral Limitations of Markets and Matching	
7	3/4	Inequalities, Fairness, and Social Responsibility *Suggested Readings:* Falk, A. and Szech, N. (2013). Morals and markets. science, 340(6133):707–711	
	3/6	What money cannot buy: Market without money *Suggested Readings:* Sandel, M. J. (2000). What money can't buy: the moral limits of markets. Tanner Lectures on Human Values, 21:87–122	
8	3/11	National Resident Matching Program, and the Deferred Acceptance Algorithm (DAA) *Suggested Readings:* Roth, Alvin E. "The origins, history, and design of the resident match." Jama 289.7 (2003): 909-912.	**Form groups for presentations**
	3/13	Stable matching *Suggested Readings:* David Gale and Lloyd Shapley (1962), "College Admissions and the Stability of Marriage" American Mathematical Monthly, 69, 9-15.	**HW3 posted**
9	3/18	Spring break	**No class**
	3/20	Spring break	**No class**
10	3/25	Multi-to-one matching	**Choose presentation topics**
	3/27	One-sided matching: School choice, kidney exchange *Suggested Readings:* Alvin E. Roth, Tayfun Sönmez and M. Utku Ünver (2003) "Kidney Exchange" Quarterly Journal of Economics,	
11	4/1	**No class**	**No class + HW3 due**
	4/3	**Second in class midterm**	**Midterm 2**
		Asymmetric Information	
12	4/8	Adverse Selection and Market Failure *Suggested Readings:* Akerlof, George. "The market for lemons: Qualitative uncertainty and the market mechanism." Quarterly Journal of Economics 84, 1970, pp. 488-500; Stiglitz, Joseph E. "Markets, market failures, and development." The American economic review 79.2 (1989): 197-203.	
	4/10	Intro to Mechanism Design, Revelation principle *Suggested Readings:* Tadelis, Sections 14.1 and 14.2	**Send preliminary slides**
13	4/15	VCG mechanism, Myerson–Satterthwaite theorem, No trade	
	4/17	Overcoming adverse selection *Suggested Readings:* Philippon, Thomas, and Vasiliki Skreta. "Optimal interventions in markets with adverse selection." American Economic Review 102.1 (2012): 1-28; Tirole, Jean. "Overcoming adverse selection: How public intervention can restore market functioning." American economic review 102.1 (2012): 29-59.	**HW4 posted**

		Presentations	
14	4/22	Student Presentations	**Send final slides**
	4/24	Student Presentations	
15	4/29	Student Presentations	
	5/1	Student Presentations	
16	5/6	Student Presentations	**HW4 due**

This is not an easy course, so do not despair if you struggle; so do I. But:

> If you need help understanding expectations, assignments, or instruction, please speak up or come and see me. I care a lot about not leaving anybody behind.

Academic Assistance

Students are encouraged to utilize the many resources we have throughout campus to assist with academics. We recommend that you seek them out starting early in the semester, not just in times of academic need, in order to develop good study habits and submit work which represents your full academic potential. Many resources are found on the Economics Website including details about the Economics Tutoring Center, Academic Advising, and other academic support options: `https://economics.illinois.edu/academics/undergraduate-program/academic-student-support`.

Academic Integrity

According to the Student Code, "It is the responsibility of each student to refrain from infractions of academic integrity, from conduct that may lead to suspicion of such infractions, and from conduct that aids others in such infractions." Please know that it is my responsibility as an instructor to uphold the academic integrity policy of the University, which can be found here: `https://studentcode.illinois.edu/article1/part4/1-401/`.

Academic dishonesty may result in a failing grade. Every student is expected to review and abide by the Academic Integrity Policies. It is your responsibility to read this policy to avoid any misunderstanding. Do not hesitate to ask the instructor(s) if you are ever in doubt about what constitutes plagiarism, cheating, or any other breach of academic integrity. Read the full Student Code at `https://studentcode.illinois.edu/`.

Students with Disabilities

To obtain disability-related academic adjustments and/or auxiliary aids, students with disabilities must contact the course instructor and the Disability Resources and Educational Services (DRES) as soon as possible. To contact DRES you may visit 1207 S. Oak St., Champaign, call 333-4603 (V/TTY), or e-mail a message to disability@illinois.edu. DRES Website: `www.disability.illinois.edu/`.

Community of Care

As members of the Illinois community, we each have a responsibility to express care and concern for one another. If you come across a classmate whose behavior concerns you, whether in regards to their well-being or yours, we encourage you to refer this behavior to the Student Assistance Center (217-333-0050 or `http://odos.illinois.edu/community-of-care/referral/`). Based on your report, the staff in the Student Assistance Center reaches out to students to make sure they have the support they need to be healthy and safe. Further,

we understand the impact that struggles with mental health can have on your experience at Illinois. Significant stress, strained relationships, anxiety, excessive worry, alcohol/drug problems, a loss of motivation, or problems with eating and/or sleeping can all interfere with optimal academic performance. We encourage all students to reach out to talk with someone, and we want to make sure you are aware that you can access mental health support at the Counseling Center (`https://counselingcenter.illinois.edu/`) or McKinley Health Center (`https://mckinley.illinois.edu/`).

For mental health emergencies, you can call 911 or walk into the Counseling Center, no appointment needed.

Disruptive Behavior

Behavior that persistently or grossly interferes with classroom activities is considered disruptive behavior and may be subject to disciplinary action. Such behavior inhibits other students' ability to learn and an instructor's ability to teach. A student responsible for disruptive behavior may be required to leave class pending discussion and resolution of the problem and may be reported to the Office for Student Conflict Resolution for disciplinary action.

Emergency Response Recommendations

Emergency response recommendations can be found at the following website: `http://police.illinois.edu/emergency-preparedness/`. I encourage you to review this website and the campus building floor plans website within the first 10 days of class. `http://police.illinois.edu/emergency-preparedness/building-emergency-actionplans/`.

Religious Observances

The Religious Observance Accommodation Request form is available at `https://odos.illinois.edu/community-of-care/resources/students/religious-observances/`. Submit the form to the instructor and to the Office of the Dean of Students (helpdean@illinois.edu) by the end of the second week of the course; in the case of exams or assignments scheduled after this period, students should submit the form to the instructor and to the Office of the Dean of Students as soon as possible. Family Educational Rights and Privacy Act (FERPA) Any student who has suppressed their directory information pursuant to Family Educational Rights and Privacy Act (FERPA) should self- identify to the instructor to ensure protection of the privacy of their attendance in this course. See http://registrar.illinois.edu/ferpa for more information on FERPA. Student information and records will not be released to anyone other than the student unless the student has provided written approval or as required by law.

Sexual Misconduct Reporting Obligation

The University of Illinois is committed to combating sexual misconduct. Faculty and staff members are required to report any instances of sexual misconduct to the University's Title IX and Disability Office. In turn, an individual with the Title IX and Disability Office will provide information about rights and options, including accommodations, support services, the campus disciplinary process, and law enforcement options. A list of the designated University employees who, as counselors, confidential advisors, and medical professionals, do not have this reporting responsibility and can maintain confidentiality, can be found here: `http://www.wecare.illinois.edu/resources/students/#confidential`. Other information about resources and reporting is available here: `http://wecare.illinois.edu/`.

Student Support

The Counseling Center is committed to providing a range of services intended to help students develop improved coping skills in order to address emotional, interpersonal, and academic concerns. Please visit their website to find valuable resources and services: `https://counselingcenter.illinois.edu/`.
Counseling Center Information: 217-333-3704
   Location: Room 206, Student Services Building (610 East John Street, Champaign IL)
McKinley Mental Health Information: 217-333-2705
   Location: 3rd Floor McKinley Health Center 1109 South Lincoln, Urbana, IL
Emergency Dean: The Emergency Dean may be reached at (217) 333-0050 and supports students who are experiencing an emergency situation after 5 pm, in which an immediate University response is needed and which cannot wait until the next business day. The Emergency Dean is not a substitute for trained emergency personnel such as 911, Police or Fire. If you are experiencing a life threatening emergency, call 911. Please review the Emergency Dean procedures: `http://odos.illinois.edu/emergency/`.

Academic Dates and Deadlines

Students should make note of important academic deadlines for making changes to their courses (add, drop, credit/no-credit, grade replacement, etc.). `https://registrar.illinois.edu/academic-calendars`
   Please check with your academic department regarding specific procedures and policies.

Acknowledgements