ECON 831
Mathematical Economics II
Department of Economics, George Mason University
Spring 2024

Instructor: Prof. Jonathan Beauchamp
Contact: jbeauch@gmu.edu
Class meetings: Thursday 1:30pm – 4:10pm, ARLVM 312
Office hours: By appointment

TA: Jinpeng Shi
Contact: jshi23@gmu.edu
Office hours: By appointment

Course description

This course covers the foundations of microeconomic theory for doctoral students in economics, with mathematical rigor. Topics include choice, preferences and utility; consumer demand; competitive firms; general equilibrium; and externalities. The course emphasizes price-taking behavior; a follow-up course emphasizes strategic behavior.

Textbooks

The main references for the lectures are the following textbooks:
- Ariel Rubinstein. *Lecture Notes in Microeconomic Theory. The Economic Agent.* (2nd edition, Princeton University Press, 2012) [AR]
  - Free download at http://arielrubinstein.tau.ac.il/books.html
- David Kreps. *Microeconomic Foundations I. Choice and Competitive Markets.* (Princeton University Press, 2013) [DK]
- Jean-Jacques Laffont. *Fundamentals of Public Economics.* (MIT Press, 1989) [JJL]

In addition, students should consider acquiring a copy of the "MWG" textbook as a general reference on microeconomic theory:
- Mas-Colell, Andreu, Michael Whinston, and Jerry Green. *Microeconomic theory.* (Oxford university press, 1995) [MWG]

Course website

The course website on **Blackboard** is accessible through https://mymasonportal.gmu.edu. The Blackboard site will also be used to post slides, distribute assignments, manage class communications, etc.

Evaluation

Task	Weight	Date or due date
4 graded problem sets	20% (5% each)	February 7 February 28 April 3 April 24
Midterm	35%	March 14
Final exam	45%	[Final exam period]

There will be 4 **graded problem sets**. Problem sets must be submitted through Blackboard by 11:59pm on their due date in the PDF format. Neither paper nor email submissions will be counted.

The **midterm** will be held on **Thursday March 14 from 1:30pm to 4:10pm** (during class time). It will test the materials covered up to (and including) Week 7.

The **final exam** will be held during the final exam period. If a higher grade is obtained on the final exam than on the midterm, that final-exam grade will be used for the midterm as well (and the original midterm grade won't count toward the final course grade).

Failure to take either exam at the scheduled time will lead to grade of zero on the exam (unless you have a valid and appropriately documented medical excuse).

Academic integrity
The integrity of the University community is affected by the individual choices made by each of us. Mason has an Honor Code with clear guidelines regarding academic integrity. More information about the Honor Code, including definitions of cheating, lying, and plagiarism, can be found at the Office of Academic Integrity website at http://oai.gmu.edu. Any student use of Generative-AI tools should follow the fundamental principles of the Honor Code. No grade is important enough to justify academic misconduct. Plagiarism means using the exact words, opinions, or factual information from another person or previous work without giving appropriate credit; paraphrased material must also be credited. Credit can be given through accepted documentation styles, such as parenthetical citation, footnotes, or endnotes. If you have any doubts about what constitutes plagiarism, please see me.

Disability accommodation
Disability Services at George Mason University is committed to providing equitable access to learning opportunities for all students by upholding the laws that ensure equal treatment of people with disabilities. If you are seeking accommodations for this class, please first visit http://ds.gmu.edu for detailed information about the Disability Services registration process. Then please discuss your approved accommodations with me. Disability Services is located in Student Union Building I (SUB I), Suite 2500, and can be contacted at ods@gmu.edu or 703.993.2474.

Tentative course schedule

Course week	Date	Lecture topic / event
1	Jan. 18	Syllabus + real analysis + choice, preferences, and utility
2	Jan. 25	Choice, preferences, and utility (continued)
3	Feb. 1	Choice, preferences, and utility (continued)
4	Feb. 7	*Graded problem set 1 due*
	Feb. 8	Demand theory + problem set review
5	Feb. 15	Demand theory (continued)
6	Feb. 22	Firm theory
7	Feb. 28	*Graded problem set 2 due*
	Feb. 29	Firm theory (continued) + problem set review + review for midterm
	Mar. 4-8	[Spring recess]
8	Mar. 14	*Midterm*
9	Mar. 21	General equilibrium + Midterm review
10	Mar. 28	General equilibrium (continued)
11	Apr. 3	*Graded problem set 3 due*
	Apr. 4	General equilibrium (continued) + problem set review
12	Apr. 11	Externalities and public goods
13	Apr. 18	Externalities and public goods (continued)
14	Apr. 24	*Graded problem set 4 due*
	Apr. 25	Review for final exam + problem set review
15	Final exam period	*Final exam*