

BEPP 250, Fall 2019

Managerial Economics

This is a course in intermediate microeconomics. Microeconomics is the scientific study of social behavior with a focus on economic issues. Microeconomics is based on three principles: individuals respond to incentives, individual behavior aggregates into equilibrium social behavior, and we can use normative criteria to find desirable outcomes.

The goals of the course are to master microeconomics and to apply microeconomics to problems in business, policy, and social science. Have you wondered: “How should Uber set prices?”; “How does trade with China affect American manufacturing?”, “Why are Playstation games expensive while Sony sells the console at cost?”, “Should income tax rates for millionaires be 75%?”, “Should Spotify start charging per song?”, “Why did Apple design iOS and manufacture iPhones, while Google built Android, but until recently, did not sell phones?” These are the types of questions we will consider.

Grading

Grades depend on attendance (5%), problem sets (10%), two midterms (25% each), and a final exam (35%).

Problem Sets: There will be 7 problem sets. Problem sets should be uploaded as a .pdf on Canvas by 11:59PM on the due date, always on a Sunday. See the schedule for due dates. No credit is given for late submissions. Solutions are posted the day after the due date. **Students are free to work together but must submit their own answers.**

Exams: Exams are closed book. You do not need a calculator and do not have to bring one. Exams will be consistent with our problem sets, problems in lectures, and practice problems, so making sure to master these problems is the best way to prepare.

Resources

Lecture and Practice Problems: Each lecture covers a topic and solves a problem. After each lecture we will post a practice problem with solutions, and the problem set will have a problem related to the lecture. The exams are extremely consistent with these problems. Mastering the lecture content and problems is the best way to prepare for the exams.

Recitation: Recitations are taught by our graduate TAs, and will cover problems and the class content of the week. Attendance is required. See the schedule for dates.

Background Readings: We will post a background reading on Canvas at least two days prior to every lecture. Students are expected to read the articles prior to lecture to foster class discussion and this can be part of the participation grade. The exams may ask big

picture questions about the readings. You don't have to memorize every detail, if you broadly understood the reading you will get the questions right.

Piazza: You are encouraged to use our Piazza site when you have questions. The undergraduate TAs will be active helping students on Piazza, and we expect this to be a lively community. Always ask questions on Piazza first, including admin questions, because you are helping other students who have the same question.

Piazza link:

<https://piazza.com/upenn/fall2019/bepp250/home>

After Piazza, your primary point of contact for any course-related matters are your TAs. For administrative matters, you can contact the program coordinator Beth Moskat. If your question relates to course rules and logistics, please read the syllabus before contacting us.

Office Hours: The undergraduate TAs and the faculty have weekly drop-in office hours (see the schedule). You are welcome to come to office hours to get help with problem sets, the material generally, and preparing for exams.

Textbook: There are no required textbooks for this course. If you would like to use a textbook, we recommend *Intermediate Microeconomics with Calculus: A Modern Approach* by Hal Varian. Any edition is fine. While the class slides, problems sets, and practice problems have all of the content we expect you to know, the book may be a helpful additional resource. Professor Rakesh Vohra from the Penn Economics Department also has an excellent new book in preparation. We posted his current draft .pdf on Canvas, and it is an excellent resource if you want to study further.

Past Exams: There are many past exams on Canvas with solutions. While we are making this content available, the past exams should not be your main source to study because BEPP 250 has changed over the years. The past exams often cover different topics and have different types of problems, so we recommend that you primarily study through our practice problems and problem sets instead of the past exams.

Staff

	Email	Office Hours
Course Coordinator		
Beth Moskat	emoskat@wharton.upenn.edu	
Undergraduate TAs		
Shruti Keolia	skeoliya@seas.upenn.edu	See Canvas homepage.
Irene Gendelman	igend@wharton.upenn.edu	See Canvas homepage.
Rachel Levin	raclevin@wharton.upenn.edu	See Canvas homepage.
Soleine Fletcher	soleinef@sas.upenn.edu	See Canvas homepage.
Alex Zanca	zanca@sas.upenn.edu	See Canvas homepage.
Carlo Chiesa	chiesac@wharton.upenn.edu	See Canvas homepage.
Graduate TAs		

Tony He	tonyhe@wharton.upenn.edu
Angela Gunn	abtgunn@wharton.upenn.edu
Nitin Krishnan	nitink@sas.upenn.edu
Philip Mulder	pmulder@wharton.upenn.edu

Faculty

Gilles Duranton	duranton@wharton.upenn.edu	Thursdays 9-11am @ Vance 452
Max Troshkin	troshkin@wharton.upenn.edu	Tuesdays 3-4:30PM @ Vance 322
Eduardo Azevedo	eazevedo@wharton.upenn.edu	Mondays 3-4:30PM @ Vance 329

Other Information

Prerequisites: Students need to have taken ECON 1, ECON 10 or an equivalent course. Students need to be comfortable with taking derivatives.

Attendance: Attendance in lectures and recitations is mandatory. Attendance will be recorded within 5 minutes of the start of each lecture and recitation. The class will have a seating chart so please be in your proper seat on time. Exams will be based on the material covered in lectures. Each student has a credit of three excused absences across lectures and recitations. This should cover religious holidays, illnesses, and other legitimate reasons for missing a class. Additional absences (beyond two) are unexcused and will lower your attendance grade. If you miss a class, you are encouraged to report and explain it using the [Course Absence Report](#). CAR is solely for informational purposes; its use cannot hurt you (in particular, it will not affect your course grade) and could help you (by keeping Academic & Advising well-informed of any possible problems; remember, they are there to support you).

Ethics: We expect you to abide by the University of Pennsylvania's Code of Academic Integrity. Violations of the code carry serious sanctions. Violations include the altering of exams after we have returned the exams. In the spirit of discouraging any temptation to engage in such unethical practices, we keep photocopies of midterm and final exams before returning them to students. The faculty will turn all cases of code violations over to the Office of Student Conduct and reserve the right to impose additional sanctions, including a failing grade for the assignment / exam and the course.

Electronics: We do not allow the use of electronic devices, such as smartphones, tablets, laptops, smartwatches in class.

Re-grading Policy: If you wish to dispute a grade on an exam, follow the steps below:

- 1) Carefully read the answer sheet posted on Canvas. Take at least 24 hours to think about the answers before submitting a re-grade request.
- 2) If you decide to submit a request, submit it in writing on a separate piece of paper and attach that sheet to your exam. **Do not write on the exam.** Additionally:

- a) For each part of the exam that you think was mis-graded, give a written explanation of your view.
- b) You must submit the entire original exam (not just the question(s) you wish to have re-graded). Your score could go down or up with re-grading.
- c) We reserve the right to re-grade the whole exam (even questions not requested for a re-grade).
- d) Submit your regrade request via email to the head TA Tony He (tonyhe@wharton).
- e) The deadline for regrade requests is one week from when the solutions are posted.

Policy for Missing an Examination: We expect you to attend the midterm and final exams. You will receive zero points for a missed exam, unless you have a medical or personal emergency or some unavoidable school-related conflict that is recognized and excused by the instructor. If you have a conflict, contact Beth Moskat in advance.

Students with Disabilities: Requests for academic accommodations need to be made during the first two weeks of the semester, except under unusual circumstances, to arrange reasonable accommodations. Students must register with Student Disabilities Services (SDS) for disability verification and for determination of reasonable academic accommodations.

Content

Lecture #	Topic	Varian Chapter
1	Intro	
2	Comparative statics	1, 15 and 16
3	Consumer theory 1	2 to 4
4	Consumer theory 2	5
5	Firm theory: cost minimization	19 to 21
6	Firm theory: cost curves	22
7	Firm theory: supply	23 and 24
8	Consumer surplus and the invisible hand	14
9	Commodity taxation	16
10	International trade	
11	Monopoly pricing	25
12	Price discrimination	26
13	Price discrimination	26
14	Game theory: static games	29 and 30
15	Game theory: dynamic games	29 and 30
16	Game: Opeq	
17	Oligopoly 1: bertrand and cournot	28
18	Oligopoly 2: stackelberg and mergers	28
19	Oligopoly 3: differentiated products	28
20	Vertical integration	
21	Auctions	18
22	Externalities	35
23	Adverse selection	38

Schedule

Monday / Wednesday Lectures

Week	Date	Lecture #
1	Monday, August 26, 2019	No lecture
	Wednesday, August 28, 2019	1
2	Monday, September 2, 2019	No lecture (labor day)
	Wednesday, September 4, 2019	2
3	Monday, September 9, 2019	3

	Wednesday, September 11, 2019	4
4	Monday, September 16, 2019	5
	Wednesday, September 18, 2019	6
5	Monday, September 23, 2019	7
	Wednesday, September 25, 2019	No lecture (exam prep)
6	Monday, September 30, 2019	No lecture (exam)
	Tuesday, October 1, 2019	First Exam @ 6PM
	Wednesday, October 2, 2019	First Exam Makeup @ 6PM
	Wednesday, October 2, 2019	8
7	Monday, October 7, 2019	9
	Wednesday, October 9, 2019	10
8	Monday, October 14, 2019	11
	Wednesday, October 16, 2019	12
9	Monday, October 21, 2019	13
	Wednesday, October 23, 2019	No lecture (exam prep)
10	Monday, October 28, 2019	No lecture (exam)
	Tuesday, October 29, 2019	Second Exam @ 6PM
	Wednesday, October 30, 2019	Second Exam Makeup @ 6PM
	Wednesday, October 30, 2019	14
11	Monday, November 4, 2019	15
	Wednesday, November 6, 2019	16 (OPEQ game)
12	Monday, November 11, 2019	17
	Wednesday, November 13, 2019	18
13	Monday, November 18, 2019	19
	Wednesday, November 20, 2019	20
14	Monday, November 25, 2019	21

	Wednesday, November 27, 2019	No lecture (Thanksgiving)
15	Monday, December 2, 2019	22
	Wednesday, December 4, 2019	23 (last lecture)

Tuesday / Thursday Lectures

Week	Date	Lecture #
1	Tuesday, August 27, 2019	No lecture
	Thursday, August 29, 2019	1
2	Tuesday, September 3, 2019	2
	Thursday, September 5, 2019	3
3	Tuesday, September 10, 2019	4
	Thursday, September 12, 2019	5
4	Tuesday, September 17, 2019	6
	Thursday, September 19, 2019	7
5	Tuesday, September 24, 2019	8
	Thursday, September 26, 2019	No lecture (exam prep)
6	Tuesday, October 1, 2019	No lecture (exam)
	Tuesday, October 1, 2019	First Exam @ 6PM
	Wednesday, October 2, 2019	First Exam Makeup @ 6PM
	Thursday, October 3, 2019	9
7	Tuesday, October 8, 2019	10
	Thursday, October 10, 2019	No lecture (fall break)
8	Tuesday, October 15, 2019	11
	Thursday, October 17, 2019	12
9	Tuesday, October 22, 2019	13
	Thursday, October 24, 2019	No lecture (exam prep)
10	Tuesday, October 29, 2019	No lecture (exam)
	Tuesday, October 29, 2019	Second Exam @ 6PM

	Wednesday, October 30, 2019	Second Exam Makeup @ 6PM
	Thursday, October 31, 2019	14
11	Tuesday, November 5, 2019	15
	Thursday, November 7, 2019	16 (OPEQ game)
12	Tuesday, November 12, 2019	17
	Thursday, November 14, 2019	18
13	Tuesday, November 19, 2019	19
	Thursday, November 21, 2019	20
14	Tuesday, November 26, 2019	21
	Thursday, November 28, 2019	No lecture (Thanksgiving)
15	Tuesday, December 3, 2019	22
	Thursday, December 5, 2019	23 (last lecture)

Recitation Schedule

Week	Date	Recitation #
1	Friday, August 30, 2019	1
2	Friday, September 6, 2019	2
3	Friday, September 13, 2019	3
4	Friday, September 20, 2019	4
5	Friday, September 27, 2019	5
6	Friday, October 4, 2019	No recitation (exam)
7	Friday, October 11, 2019	No recitation (fall break)
8	Friday, October 18, 2019	6
9	Friday, October 25, 2019	7
10	Friday, November 1, 2019	No recitation (exam and family weekend)
11	Friday, November 8, 2019	8
12	Friday, November 15, 2019	9
13	Friday, November 22, 2019	10
14	Friday, November 29, 2019	No recitation (Thanksgiving)
15	Friday, December 6, 2019	11

Problem Set Schedule

Problem Set Number	Due Date (Sunday by 11:59PM on Canvas)
1	Sunday, September 15, 2019

2	Sunday, September 29, 2019
3	Sunday, October 13, 2019
4	Sunday, October 27, 2019
5	Sunday, November 17, 2019
6	Sunday, December 1, 2019
7	Sunday, December 8, 2019

Lecture and Recitation Locations

Lecture Locations

Section	Faculty	Day/Time	Classroom
BEPP 250-001	Eduardo Azevedo	MW 10:30-12	SHDH 211
BEPP 250-002	Eduardo Azevedo	MW 1:30-3:00	SHDH 109
BEPP 250-003	Gilles Duranton	MW 3:00-4:30	SHDH 213
BEPP 250-004	Max Troshkin	TR 10:30-12:00	SHDH 215
BEPP 250-005	Max Troshkin	TR 1:30-3:00	VANC B11
BEPP 250-301	Gilles Duranton	MW 1:30-3:00	SHDH 209

Recitation Locations

Section	TA	Day/Time	Classroom
BEPP 250-205		Friday, 9:00-10:00 am	SHDH 1201
BEPP 250-206		Friday, 10:00-11:00 am	SHDH 1203
BEPP 250-207		Friday, 11:00-12:00 pm	SHDH 1203
BEPP 250-208		Friday, 12:00-1:00 pm	SHDH 1203
BEPP 250-209		Friday, 1:00-2:00 pm	SHDH 1203
BEPP 250-210		Friday, 2:00-3:00 pm	SHDH 1203
BEPP 250-211		Friday, 9:00-10:00 am	SHDH 109
BEPP 250-212		Friday, 10:00-11:00 am	SHDH 109
BEPP 250-213		Friday, 11:00-12:00 p.m.	SHDH 109
BEPP 250-214		Friday, 12:00-1:00 pm	SHDH 109
BEPP 250-215		Friday, 1:00-2:00 pm	SHDH 109
BEPP 250-216		Friday, 2:00-3:00 pm	SHDH 109