ECON 101 (Fall 2020) Intermediate Microeconomics
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Logistics: As the class typically has an enrollment of at least 170 students, per the University’s announcement, it will be delivered on-line.

Lectures: Conducted synchronously via Zoom during the regularly scheduled time for the course. They will be recorded so as to be available to those in different time zones. Depending on the number of students in other time zones, I will conduct some live sessions outside the scheduled time.

Interruptions: Live sessions can be disrupted for a variety of reasons. In the event of a disruption, I will try to get the session back on line within 15 minutes. If not, I will record the relevant material to viewed later. In the event of a disruption, I will communicate via the Announcements feature on CANVAS.

Explanatory Videos: Occasional and focused on specific topics that will be posted on CANVAS. The duration of the recordings and the synchronous sessions above combined will not exceed the lecture hours scheduled for the course.

Recitations: Some recitations will be replaced by recorded videos where a TA will go over the solutions to some of the problems in the review packet that will be relevant for that week’s homework. Others will be replaced with synchronous meetings open to all students in the class (irrespective of section). These are to be used to raise questions about the material. Questions to be submitted in advance so that they can be shared before the meeting and avoid duplication.

Office Hours: These will be conducted via Zoom. Some will be ‘drop in’ and others by appointment for confidential matters. Times to be fixed later to account for various time zones.

Assessment: The final grade will depend upon 12 homeworks (one a week) and a single written final exam during finals week.
Description

Microeconomics is the formal study of how individuals respond to incentives and its effect on social outcomes. Attention will focus on how the terms of trade between buyers and sellers are set. The course emphasizes the development of the mathematical tools needed to think carefully about incentives and necessitates a taste for long chains of reasoning.

The course is not a laundry list of facts to memorize or recipes to follow. Its purpose is to change the way you think. This will be accomplished by posing questions whose answers will challenge your intuition. Faithfully recording the answers and reproducing them is insufficient. One must understand the reasoning process by which one arrives at them.

The course requires that one perform computations that, by themselves, are unimportant, but are useful to convince oneself of things that one might at first disbelieve. Regular homework assignments will allow one practice at these things. Recorded recitations will cover problems from a file of review problems (with solutions) (ReviewProb-101.pdf) posted on CANVAS. I will post the problems to be covered in advance via CANVAS. The problems for each session are selected to mirror those on the homework. Some, but not all, of the problems are of the cookbook variety. The non-cookbook problems are designed to tax your reasoning faculties rather than ability to pattern match.

The class is not a spectator sport, don’t approach it as such. Inspecting the answer to a problem or following the reasoning of another is insufficient to master the material; one needs to attempt problems and work through these difficulties on one’s own before turning to the solution. If thinking were easy, everyone would be doing it.

Course Material

1. A copy of the entire slide deck is posted on CANVAS (which will be updated from time to time).

2. Optional for the course is:
   *Prices and Quantities: Fundamentals of Microeconomics*
   by yours truly.

3. There are substitutes (but they do not cover the material in the same order or depth as we will):
   by Jeffrey M. Perloff.
Introduction to Economic Analysis is a free open source textbook by McAfee, Lewis and Dale available at https://open.umn.edu/opentextbooks/textbooks/introduction-to-economic-analysis

CANVAS is used to post announcements, slides, homework assignments, video recordings and other important materials. You are responsible for regularly checking, downloading and reading materials posted on the site, as they form an integral part of the class. These materials are not for distribution to those outside of the current class. While they are for your use, they are not yours to do with as you wish. Sic Vos Non Vobis.

Grade: It will depend on 12 Homeworks each graded out of 10 points (60 % of grade) and one final exam, graded out of 30 points. (40% of grade). No scores are dropped.

Final Exam: It is open book with calculators (even scientific) permitted. No assistance may be given or received during an exam. You are expected to abide by the Code of Academic Integrity in the completion of assignments, papers and exams.

Homework: No late work is accepted. There are no make-up homeworks. Students can be excused from up to three homeworks. The weights on the subsequent homeworks and final exam will be adjusted upwards to account for missing them.

Write-ups must be your original work. The of use materials containing solutions or partial solutions to the assignments (including solutions prepared by current or former students) would be contrary to Penn’s code of academic integrity. If your solutions contains information from outside sources, you should properly acknowledge them.

While you are required to complete the assignments individually, I don’t wish to discourage learning from one’s peers. This leaves room for ambiguity, so I will try to make expectations as clear as possible. In brief:

1. Discussing the general ideas behind the problems is permitted.

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1The Economics Department Course Policies, which include rules about exam attendance, make-up exams, grading appeals, etc., are available at: http://economics.sas.upenn.edu/undergraduate-program/course-information/guidelines/policies

2https://catalog.upenn.edu/pennbook/code-of-academic-integrity/
2. Writing formal solutions should be \textit{completely individual}, done in the equivalent of separate rooms.

As discussions of general ideas gradually become more specific, some judgment is unavoidable, but here’s the kind of interaction I have in mind: If a peer conveys an idea which seems central to the solution, \textit{do not write it down....immediately.} Approach the problem again on your own as if afresh, influenced by however much of their idea you remember. If you can re-create it without notes, you have mastered it, and I’m happy to give you credit. In this way we can let everyone help each other learn, while steering a wide berth around simple copying.

\textbf{Course Calendar}

These dates are not fixed in stone. I reserve the right to change them to adjust to the pace of the class.

- Sept 10: Homework 1 due
- Sept 17: Homework 2 due
- Sept 24: Homework 3 due
- Oct 1: Homework 4 due
- Oct 8: Homework 5 due
- Oct 12: \textit{Drop period ends}
- Oct 15: Homework 6 due
- Oct 22: Homework 7 due
- Oct 29: Homework 8 due
- Nov 5: Homework 9 due
- Nov 9: \textit{Last day to withdraw}
- Nov 12: Homework 10 due
- Nov 19: Homework 11 due
- Dec 3: Homework 12 due
- \textit{Final Exam} in finals week on the date set by the registrar.
Prerequisites

Introductory microeconomics and macroeconomics (Econ 1 and 2); Math 104 and Math 114 or 115 or students who have received a B+ or better in Math 104 may take Econ 101 and Math 114 or 115 concurrently. Transfer students for Math 104 must complete Math 114 or 115 before enrolling in Econ 101. This course assumes multivariate calculus, and a strong understanding of these mathematical tools is crucial to success in the course.

1. Functions and Properties of Functions
   - Monotonicity
   - Continuity
   - Concavity and Convexity
   - Logarithmic functions
   - Homogeneous functions

2. Derivatives
   - How to take a derivative
   - Product and Quotient Rules
   - Chain Rule
   - Partial derivatives
   - Total derivatives

3. Solving optimization problems
   - Unconstrained optimization: find the extrema of a function (maxima/minima)
   - Constrained optimization: Method of substitution and Lagrange
   - Second order conditions
   - Comparative statics of solution and optimal value functions
Course Outline

Week 1: Rational Buyer Model  Chapter 1 of Prices & Quantities.

Week 2: Monopoly Pricing & Elasticity  Chapter 2 of Prices & Quantities.

Week 3: Monopoly Pricing & Costs  Chapter 1 & 2 Prices & Quantities.

Week 4: Welfare & Price Discrimination  Chapter 3 from Prices & Quantities.

Week 5: Bundling & Versioning  Chapter 3 from Prices & Quantities.

Week 6 & 7: Imperfect Competition  Chapter 4 from Prices & Quantities.

Week 8 & 9: Imperfect Competition  Chapter 4 from Prices & Quantities.

Week 10: Consumer Theory  Chapter 5 from Prices & Quantities.

Week 11: Perfect Competition  Chapter 6 from Prices & Quantities.

Week 12: Perfect Competition  Chapter 6 from Prices & Quantities.

Week 13: Perfect Competition  Chapter 6 from Prices & Quantities.

Week 14: Externalities  Chapter 7 from Prices & Quantities.

Week 15: Externalities  Chapter 7 from Prices & Quantities.
How to Prepare for the Final Exam

1. Space your practice out rather than compressing it into a short period.
   If you spread five hours of study into one hour a day, you’ll remember more than if you study for five hours on one day. Memories have a short half-life and need reinforcement.

2. Practice retrieving information rather than recognizing it.
   Don’t mistake the ability to recognize something for an ability to recall it. In an exam you don’t get marks for things being familiar, you get marks for recalling relevant information and using it to answer the question.

3. Figure out what you don’t know.
   Revision is not for reassurance but to identify what you don’t know or understand.

4. Rehearse.
   No one has learnt how to swim from YouTube. Study for an exam by testing yourself on writing full answers under exam conditions.

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3It works in reverse for chocolate.