Advanced Micro II: 32410

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Overview of the Class
This class builds on some of the concepts you've learned as an undergraduate in Micro I and II to study at a deeper level a variety of topics relevant to students of public policy. We will discuss familiar topics but at a more advanced level and will discuss real-world policy applications. Topics covered include risk, uncertainty, problems of asymmetric information, public goods, and externalities.

Text
The text is Nicholson and Snyder *Microeconomic Theory: Basic Principles and Extensions* 12th edition. However, your primary resource for studying/understanding the material should be my notes, which I will post online.

Logistics
This class meets on Tuesdays and Thursdays from 9:30-10:50AM in room Keller 0001. There will be a TA section on Fridays 3-4:20PM in Keller 1022. I will hold office hours on Thursdays from 3-4PM in person in room 2045. The TAs will hold twice-weekly office hours 3:30-4:30 on Tuesdays, and 2-3 on Thursdays (both in Room 2008). A Canvas website for the class has been set up. I will post readings and handouts there, make announcements, etc.

Formal Requirements
Formal requirements for this class are 5 problem sets, two quizzes, a cumulative final exam, and class participation. The problem sets will be given out at least a week in advance and will be due at 9PM, to be turned in on Canvas. You can work together on problem sets (in groups of up to 4) but everyone has to turn in their own problem set. Please write the names of anyone you worked with on your problem set. The dates for the quizzes are 2/6 (Friday of week 5) and 2/27 (Friday of week 8). The Final will be Tuesday, 3/10 in Keller 0001, 9-10:30AM.

Grading
At the end of the course, each of the components (attendance, problem sets, quizzes, and final exam) will have numerical grades out of 100 possible points each. Each student's overall numerical grade will then be determined by a weighted sum of the assignment scores as follows:

- For students who did better on Quiz 1 than Quiz 2, the weights will be 5% on attendance, 25% on the problem sets, 20% on Quiz 1, 10% on Quiz 2, and 40% on the final exam.
- For students who did better on Quiz 2 than Quiz 1, the weights will be 5% on attendance, 25% on the problem sets, 10% on Quiz 1, 20% on Quiz 2, and 40% on the final exam.

This grading scheme therefore puts higher weights on the component on which each student performed more strongly.

Academic Integrity
Please read and understand the University of Chicago's statement on Academic Honesty and Plagiarism:

It is contrary to justice, academic integrity, and to the spirit of intellectual inquiry to submit another's statements or ideas of work as one's own. To do so is plagiarism or cheating, offenses punishable under

the University's disciplinary system. Because these offenses undercut the distinctive moral and intellectual character of the University, we take them very seriously.
Proper acknowledgment of another's ideas, whether by direct quotation or paraphrase, is expected. In particular, if any written or electronic source is consulted and material is used from that source, directly or indirectly, the source should be identified by author, title, and page number, or by website and date accessed. Any doubts about what constitutes "use" should be addressed to the instructor.

All University of Chicago students are expected to uphold the highest standards of academic integrity and honesty. Among other things, this means that students shall not represent another's work as their own, use un-allowed materials during exams, or otherwise gain unfair academic advantage. All students suspected of academic dishonesty will be reported to the Harris Dean of Students for investigation and adjudication. The disciplinary process can result in sanctions up to and including suspension or expulsion from the University. In addition to disciplinary sanctions, **I reserve the right to give any students who have committed academic dishonesty a failing grade in the course, regardless of their performance on components of the course**. The Harris policy and procedures related to academic integrity can be found at `https://harris.uchicago.edu/gateways/current-students/policies`. The University of Chicago Policy on Academic Honesty & Plagiarism can be found at `https://studentmanual.uchicago.edu/academic-policies/academic-honesty-plagiarism/`

Harris Policies, Attendance, etc.
Please read and understand all of the Harris policies: `https://harris.uchicago.edu/student-life/dean-of-students-office/policies`. They apply to this course. In terms of attendance, this is a core course so attendance will be taken every class via roll call. Each student may miss up to two classes for free. After that, each missed class reduces the grade by one letter grade (ie: from A- to B-). *Please don't write me about why you are missing class.* It would be wise not to use the 2 "freebees" for anything except absolute emergencies since you might later have a real emergency. Note that I don't plan to record the course and since there are notes available for the course you should be able to rely on those if you miss a day. I will write notes in class live, but that is just to maintain the proper pacing of mathematical material. You are welcome to follow along in the notes and to make annotations there. Note that Harris core classes all forbid the use of screens in the classroom, with exceptions for SDS accommodations and for hand-written note-taking on tablets laid flat on students' desks. The midterm and final will be open book in terms of physical books/papers, you may not use any electronics during the tests.

Tentative Outline

- Tuesday 1/6: Theory of the firm + firm's decisions
  - **NS Chapter 10, Chapter 11**.
  - $\leftrightarrow$ Review the nature of the firm's input choice problem and various types of cost
    - Review the videos "What does the firm do," "Firm's decisions"
    - URL: `https://www.youtube.com/playlist?list=PLy8M8LtWNVPp74do706Bp_0EHndtVShBV`
    - What are the boundaries of the firm?
- Thursday 1/8: Partial equilibrium and taxation in a competitive market
  - Discuss deadweight loss of taxation, incidence of taxation, price floors, etc.
  - **NS pp. 431-439, 491-517**
- Tuesday 1/13: Externalities and the Coase theorem
  - Define externalities, discuss market failure, when can taxation restore efficiency? Property rights and externalities.
  - **NS pp. 683-695**
- Thursday 1/15: General Equilibrium
  - Define an Edgeworth box, discuss partial vs. general equilibrium (examples of when it matters—taxation), discuss welfare theorems.
  - NS Chapter 13
  - Homework 1 due on 1/18 (SUNDAY)
- Tuesday 1/20: Finish GE in theory and discuss in practice
- Thursday 1/22: Trade and comparative advantage
  - NS pp. 470-471
  - Homework 2 due on 1/26
- Tuesday 1/27: Public Goods
  - Define Lindhal equilibrium: how to define equilibrium when everyone is paying different prices but consuming the same good at the same time, but each might want different quantities of the good.
  - **NS pp. 695-703**
- Thursday 1/29: Public Goods (cont)
  - Discuss the problem of true preference elicitation, mechanisms to support true preference elicitation
  - **NS pp. 709-710**
  - Homework 3 due on 2/2
- Tuesday 2/3: Review and catch up
- Thursday 2/5: Risk and uncertainty
  - formalize the concept of risk, define expected values, lotteries. Define axioms of expected utility theory and vN-M expected utility functions. Begin discussing risk aversion.

- Friday 2/6: Quiz 1 9-10.20am
- Tuesday 2/10: Risk and uncertainty (cont.)
  - Discuss various equivalent definitions of risk aversion, certainty equivalents, risk premia, CARA, DRRA, etc.
  - What is the alternative to insurance and why does insurance/income smoothing increase welfare?
  - **NS pp. 207-221**; notes closely follow **MWG ch. 6 (pp. 167-194)** which is posted on canvas.
- Thursday 2/12: An introduction to insurance
  - Define insurance and show that a risk averse person chooses perfect insurance under "fair" prices. Formalize the notion of insurance: who can offer it, to whom, and at what price?
  - Homework 4 due 2/16
  - **NS pp. 231-237**
- Tuesday 2/17: Asymmetric Information: Moral Hazard
  - Why are insurance markets in real life so incomplete (deductibles, caps in coverage, tons of rules, denial of coverage)? Discuss practical barriers which arise when one agent's behavior/characteristics aren't perfectly observable to another: adverse selection and moral hazard. Define first-best vs. second-best equilibrium.
  - **NS pp. 633-645, 665-671**
- Thursday 2/19: Asymmetric Information: Adverse Selection
  - **NS pp. 633-645, 665-671**
- Tuesday 2/24: Asymmetric Information: Rothschild Stiglitz model of competitive insurance markets
  - Homework 5 due 2/23
- Thursday 2/26: Signaling and the Returns to Education
- Friday 2/27: Quiz 2
- Tuesday 3/3: Discrimination
  - We will discuss taste-based discrimination and how discrimination can survive in competitive markets. We will discuss empirical evidence to support various models of discrimination.
  - What do economists have to say about discrimination? We will define two theories of discrimination: statistical discrimination (in which individuals are assigned the average attributes of their group when being evaluated) and taste-based discrimination (in which employers/customers/coworkers dislike interactions with members of minority groups). How does statistical discrimination affect wages and employment of minority workers? How might statistical discrimination affect firm tenure, lifecycle wages, and promotion?
  - ban the box and the unintended consequences of policy intervention
  - **
- Thursday 3/5: Discrimination (continued)
- Tuesday 3/10: Final, Keller 0001 9-10:30AM