

Econ. 50: Economic Analysis I

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Individual consumer and firm behavior under perfect competition. The role of markets and prices in a decentralized economy. Monopoly in partial equilibrium. Economic tools developed from multivariable calculus using partial differentiation and techniques for constrained and unconstrained optimization.

1 Overview

A solid background in microeconomics is useful for anyone who wants a better understanding of many important economic issues and problems. How do people decide whether and when to purchase a new car or a new cellular phone? How do firms decide whether to hire new employees, or to lay off some of their existing employees? Why do some industries emerge and grow, while others decline? Why have housing prices been more volatile in some geographic regions than in others? Do changes in gasoline prices affect consumers' behavior or their well being? Should monopoly firms be regulated or left alone? Would an increase in the minimum wage help or harm workers? Are policies that benefit employers harmful to employees? In Economics 50, you will develop an analytical framework for approaching these and other microeconomic questions.

This course introduces you to basic models of microeconomic theory, and to the sort of mathematical reasoning that is widely used in theoretical and applied microeconomics. For those of you who plan to continue your study of economics, Econ. 50 will provide a foundation for later courses. We will begin with a brief review of supply, demand, and perfectly competitive markets. We will then proceed to a study of consumer theory, deriving a theoretical approach for explaining consumers' behavior and choices. In this portion of the course, we will see how economists view demand curves for specific products as arising from purposeful, utility-maximizing decisions by self-interested individuals. In the second half of the course, we will study producer theory, including the implications of cost-minimizing and profit-maximizing behavior for firms under two "extreme" cases: perfect competition and monopoly.

Econ. 50 is the first course in the Economics Department's undergraduate "core" curriculum (Econ. 50, 51, and 52), a year-long survey of intermediate microeconomics and macroeconomics. Econ. 51 uses game theory and other models to cover the "in-between" cases of oligopoly and

monopolistic competition, and gives an introduction to general equilibrium theory and the economics of risk and uncertainty. The theories of consumer and producer behavior we develop in Econ. 50 will also provide the microeconomic foundations of the macroeconomic models covered in Econ. 52.

We will try very hard to make Econ. 50 useful, entertaining, and rewarding for you. For many of you, though, this will not be an easy course. We will cover a good deal of material at a rapid pace, and our analysis will be much more mathematically rigorous than what you are likely to have seen in an introductory economics course. Because of the importance of “marginal” reasoning in microeconomics, we will make frequent use of differential calculus. If you work hard, and take extra care to keep up with the material, you will be rewarded—both in the short-term and in your preparation for future economic coursework.

2 Logistics

The class meets Tuesdays and Thursdays from 1:15–3:05 P.M. in the Hewlett Teaching Center, room 102. There may also be additional meetings for review before the midterm and final exams. Luke Stein will also hold office hours on Thursday from 3:30–5:00 P.M. in the lecture room or in Landau Economics, room 348. Xiaoling Zhou will hold office hours on Wednesdays from 11:00 A.M.–1:00 P.M. in Landau Economics, room 245. It is very important that you attend all lectures, particularly since we will be covering quite a bit of material that does not appear in the textbook. We also encourage you to attend our office hours.

Course website

The course website is available through Stanford’s CourseWork system (<http://coursework.stanford.edu>). It is critical that you be registered on the course website to ensure you receive our announcements throughout the term.

Other resources

Free peer tutoring is available through the Center for Teaching & Learning (<http://ctl.stanford.edu>). Drop-in hours for Economics are scheduled for 6–10 P.M. Mondays and 8–10 P.M. Tuesdays in the Lagunita Seminar Room. One-on-one and group tutoring is also be available by appointment (see <http://sututor.stanford.edu>).

3 Prerequisites

The prerequisites for the course are *prior* completion of

1. Economics 1 or 1A, and
2. Economics 50M or any course in the Mathematics 51 series.

Equivalent courses may be used to meet these requirements with departmental permission; note that Advanced Placement credit will *not* be accepted in place of completing Economics

1/1A. If you are satisfying either prerequisite using transfer credit (rather than with courses taken at Stanford), please contact Carol Schwan (cschwan@stanford.edu) in the Economics Department Academic Office for a code that will allow you to register.

If your mathematics knowledge needs brushing up, you may wish to review the material presented in the Mathematical Appendix at the end of the textbook (see below). The key tools we will be relying on are multivariable calculus and optimization techniques (unconstrained and constrained).

4 Assignments

Problem Sets

There will be approximately six assigned problem sets. Your problem set with the lowest score will be dropped from your grade calculation. This will give you a chance to skip one at your discretion, so you will not be penalized if illness, travel, emergency, stress, or laziness causes you to miss an assignment. Please use this option wisely over the quarter: there will be no other exceptions for missing a problem set.

Please take the problem sets seriously: this is a “problem-solving” course, and careful work on the assignments will be good preparation for the examinations.

Cooperation in solving problems on the assignments is encouraged, but you are expected to write up your own answers. Please list your principal collaborators (if any) at the top of your submissions.

Writing assignments

You will be required to complete two short writing assignments, which are drawn from Robert H. Frank's *The Economic Naturalist Writing Assignment* (JEE, 2006).

An important part of your experience in this course will be two short writing assignments designed to foster your skills as an economic naturalist. In each of these papers, your assignment is to use a principle, or principles, discussed in the course to explain some pattern of events or behavior that you personally have observed. . . .

Your space limit is 500 words. Many excellent papers are significantly shorter. Please do not lard your essay with complex terminology. Imagine yourself talking to a relative who has never had a course in economics. The best papers are ones that would be clearly intelligible to such a person, and typically these papers do not use any algebra or graphs. You need not include a bibliography.

This assignment is not a Ph.D. dissertation. You are not expected to do voluminous research in support of your argument, although a relevant fact or two might help convince yourself and others that you are on the right track. It makes no difference whether your topic is “important,” but try, as best you can, to choose something interesting. A really successful paper is one that begins with a really interesting question (one that makes the listener instantly curious to learn the answer) and then uses an economic principle or principles to construct a plausible answer. You'll know

you have a good paper if the first thing your roommate wants to do upon reading it is to tell friends about it.

Frank's students have discussed questions such as

1. Why do the keypad buttons on drive-up automatic teller machines have Braille dots?
2. Why do brides spend so much money on wedding dresses, whereas grooms often rent cheap tuxedos, even though grooms could potentially wear their tuxedos on many other occasions and brides will never wear their dresses again?
3. Why are child safety seats required in cars but not in airplanes?
4. Why are round-trip fares from Hawaii to the mainland higher than the corresponding fares from the mainland to Hawaii?
5. Why do airlines charge much more for tickets purchased at the last minute, yet Broadway theaters follow exactly the opposite practice?
6. Why do many people buy larger houses when they retire and their own children leave home?

Examinations

There will be two examinations.

1. The Midterm will be a closed book, in-class exam held on July 21 during our usual lecture time in our usual lecture room.
2. The Final Exam will be a closed book, in-class exam held on August 14 from 12:15–3:15 in a location to be announced by the registrar.

Please note that there will be no make-up exams, and neither early nor late sittings for exams. If due to a documented illness or other emergency you are unable to take the midterm at the appointed time, your final grade will be based solely on the final exam and other assignments. If due to a documented emergency, death in the immediate family, or Stanford business that takes you away from Campus, you are unable to take the final at the appointed time, you may request an accommodation (e.g., a grade of “Incomplete” to be resolved by taking an Economics 50 final in a future academic quarter). Such requests are governed by policies available at <http://economics.stanford.edu/undergraduate/economics-common-syllabus>.

Grading

The course grade will be composed of the weighted average of four components as follows:

1. Problem sets (lowest score dropped): 25%
2. Written assignments: 10%
3. Midterm examination: 30%
4. Final examination: 35%

Numerical scores will not be converted to letter grades until the very end of the quarter. Specific letter grades will not be assigned to individual homework assignments or exams.

5 Policies

Academic integrity

Course policies regarding academic integrity are governed by the University Honor Code, available at <http://honorcode.stanford.edu/>.

General policies

Economics Department courses have a common set of policies, including those governing missed examinations and re-grading. You are responsible for knowing these policies, which are available at <http://economics.stanford.edu/undergraduate/economics-common-syllabus>.

We expect students to attend classes and take notes. This is an essential part of the learning process. In order to foster a respectful, productive learning environment, laptop computers will be allowed in the lecture hall only for note-taking and other academic uses relevant to the course; other electronic devices should be turned off during class.

If you will be unable to hand in an assignment by its deadline due to travel plans or other conflicts, please make a *prior arrangement* with us to submit your homework early or by e-mail/fax. Late assignments will not be accepted for any reason. Late work does not count for course credit. It gets a grade of zero. There will be no exceptions besides those stated in the common departmental policies referenced above.

Disability issues

From the common departmental policies:

Students, who have a physical, psychological, or learning disability, that may necessitate an academic accommodation or the use of auxiliary aids and services in a class must initiate the request with the Student Disability Resource Center (SDRC), not with the instructor. The SDRC will evaluate the request along with the required documentation, recommend appropriate accommodations, and prepare a verification letter dated in the current academic term in which the request is being made. Students should contact the SDRC in the first week of the quarter as timely notice is needed to arrange for appropriate accommodations. The SDRC is located at 563 Salvatierra Walk. Also see <http://www.stanford.edu/group/DRC/>.

Be sure that your instructor, the SDRC, and you have a common understanding, at least two weeks before any examination, of the precise logistical arrangements by which you will be accommodated.

6 Reading

The required textbook for this course is D. Besanko and R. Braeutigam, *Microeconomics*, Third edition, John Wiley & Sons, 2008.

The book is available at the Stanford bookstore. Copies of the textbook are available on reserve at Green Library. In case you have access to the second edition of the book, that should also be fine.

The textbook is somewhat less mathematical than the approach we'll use in class. However, it provides a substantial amount of conceptual detail, case studies and examples based on actual empirical research by economists that serve as useful complements to the lectures. Make sure to read the assigned chapter, including the appendices, prior to class.

In preparing the writing assignments, you may find some food for thought in R. Frank, *The economic naturalist: in search of explanations for everyday enigmas*, Westview Press, 2007.

7 Outline of topics

This course is taught over a period of ten weeks during the regular academic year. We have two fewer weeks, which may force us to move slightly more quickly. The precise timing of our lectures and assignments will be calibrated throughout the term, but a tentative plan follows.

- **Week 1**
 - Course overview and introduction [Besanko and Braeutigam, Ch. 1]
 - Demand and supply analysis; elasticities [Ch. 2]
- **Week 2**
 - Consumer preferences [Ch. 3]
- **Week 3**
 - Consumer choice [Ch. 4]
- **Week 4**
 - First writing assignment
 - Demand theory [Ch. 5]
 - Midterm review
- **Week 5**
 - Midterm examination
 - Inputs and production functions [Ch. 6]
- **Week 6**
 - Cost minimization [Ch. 7–8]
- **Week 7**
 - Competitive markets [Ch. 9–10]
- **Week 8**
 - Imperfect competition [Ch. 11]
 - Second writing assignment
 - Final review
 - Final examination