Syllabus
Spring 2019

Course description:

Economics is the study of production and allocation of scarce resources, and how agents make decisions under conditions of scarcity and uncertainty. This course provides a rigorous introduction to economics, with special emphasis on microeconomics. We will introduce economics as a discipline and as a way of thinking.

We will first study the behavior of individual consumers and firms. Then we will provide insight into how markets work and whether market outcomes are desirable. We will also look at situations in which the firm is a monopolist, or competes with a limited number of rivals. Some of the key concepts we will introduce include economic incentives, marginal analysis, opportunity cost (which costs matter), market efficiency (what does it mean for a market to work) and strategic behavior (how to predict and respond to your rivals' decisions).

The tools you will learn in this class are fundamental for most upper division courses of the Economics major as well as classes in Finance, Accounting and Marketing.

Teaching fellows:

Section	Fellow	Email
Mon 11:00-12:15	Juan Morelli	jml934@nyu.edu
Tues 11:00-12:15	Timothy Hills	thills@stern.nyu.edu
Tues 2:00-3:15	Timothy Hills	thills@stern.nyu.edu
Wed 9:30-10:45	Felipe Alves	falves@stern.nyu.edu
Thurs 2:00-3:15	Daniel Stackman	ds4584@nyu.edu
Thurs 3:30-4:45	Daniel Stackman	ds4584@nyu.edu

Textbook: Robert S. Pindyck, and Daniel L. Rubinfeld: _Microeconomics_ (9th Edition), Prentice-Hall Series in Economics. The book is available at the NYU Bookstore.[1]

Course Site: The course's website can be found on NYU Classes. We will run all communication through this site, and you can post comments on assignments and lectures here. There you will be able to find:
1. Lecture notes
2. Problem sets and solution keys
3. Sample exams
4. Announcements

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[1] Previous editions will work as well, provided you follow carefully any differences in chapter contents.

Prerequisites: This course assumes familiarity with multivariate calculus and high school algebra. In addition, we will have a review section on most essential mathematical tools.

Teaching Fellow Sessions: In addition to our lectures twice a week, a Teaching Fellow (TF) will conduct a recitation every week. TF sessions start in the **<u>second</u>** week of class.

Grading: Your grade will be determined by the following:

Homework assignments	20%
Quizzes	10%
Midterm	30%
Final	40%

<u>Class attendance and professionalism</u>. You should come to class prepared to discuss assigned topics. Your thoughtful participation makes the course more interesting and productive for everyone, including your instructors.

You can contribute to the course by:
- Listening attentively and answering discussion questions.
- Arriving to class on time and turning off laptops, tablets, and mobile phones during lecture.
- Demonstrating interest in your peers' comments and questions.
- Advancing the discussion by contributing insightful comments and questions.

<u>Homework Assignments:</u> There will be 10 homework assignments. Homework assignments will consist of problems and short answer questions based on the material presented in class. The objective of these assignments is to give you the opportunity to practice the concepts. Students should hand in homework assignments to a box in the front of the lecture hall on assignment due dates. We will not accept late assignments, but we will count only the highest 8 of 10 assignment grades when calculating the homework portion of the final grade.

<u>Quizzes</u>: There will be 2 quizzes. There are absolutely no make-ups for missed quizzes. They will be held on Tuesday, February 26 and Thursday, April 11.

<u>Examinations</u>: There will be a midterm and a final exam. Tests are written and will be taken without books or notes. They will consist of problems similar to the ones in the problem sets, including short answer questions. The final exam will be cumulative.

<u>No Make-up Exams</u>: If you miss the midterm for a justified reason and provide sufficient evidence, your final score will be counted instead of the midterm exam. If you miss the midterm for any other reason you will get a score of 0. If you miss the final exam for a justified reason you will receive an incomplete, which must be removed in the earliest possible semester.

Review Sessions: We will run a review session before both the midterm and the final exam. The midterm review will be held on Tuesday, March 12. The final exam review will be held on Thursday, May 9.

Your final exam: If you want to receive a copy of your final exam after the course is over you will need to make an appointment with me.

Errors: The TFs and I will make every effort to grade fairly, but some errors in grading may occur. Please check your exams and in case of grading errors, please return your exam to the grader with a <u>written note</u> explaining where the error is. We may keep copies of all, or of a fraction of graded exams, prior to handing them back. The entire exam will be re-graded in the case of a re-grade request. Please keep copies of your exams until the semester is over.

How to do well in this course: Practice problems. As many as you can! Work with your friends on the difficult problems. Learn from each other. Seek help from me or from the TFs. We are here to help you.

Stern Policies:

Classroom Conduct. NYU Stern's policies on in-class behavior can be found here:
 http://www.stern.nyu.edu/portal-partners/current-students/undergraduate/resources-policies/academic-policies.
In particular, we expect students to attend lecture regularly, close and put away laptops before lecture begins, and adhere to guidelines on lateness and professional conduct.

Grading. At NYU Stern we seek to teach challenging courses that allow students to demonstrate their mastery of the subject matter. In general, students in undergraduate core courses can expect a grading distribution where:
- 25-35% of students can expect to receive A's for excellent work
- 50-60% of students can expect to receive B's for good or very good work
- 5-10% of students can expect to receive C's or less for adequate or below work

Note that while the School uses these ranges as a guide, the actual distribution for this course and your own grade will depend upon how well you perform in this course.

General Behavior. The School expects that students will conduct themselves with respect and professionalism toward faculty, teaching fellows, students, and others present in class and will follow the rules laid down by the instructor for classroom behavior. Students who fail to do so may be asked to leave the classroom.

Collaboration on Graded Assignments. Students may not work together on any assignments or exams unless the instructor gives express permission.

Course Evaluations. Course evaluations are important to us and to students who come after you. Please complete them thoughtfully.

Academic Integrity. Integrity is critical to the learning process and to all that we do here at NYU Stern. As members of our community, all students agree to abide by the NYU Stern Student Code of Conduct, which includes a commitment to:
- Exercise integrity in all aspects of one's academic work including, but not limited to, the preparation and completion of exams, papers and all other course requirements by not engaging in any method or means that provides an unfair advantage.
- Clearly acknowledge the work of others when submitting written work as one's own. Ideas, data, direct quotations (which should be designated with quotation marks), paraphrasing, creative expression, or any other incorporation of the work of others should be fully referenced.
- Refrain from behaving in ways that knowingly support, assist, or in any way attempt to enable another person to engage in any violation of the Code of Conduct. Our support also includes reporting any observed violations of this Code of Conduct or other School and University policies that are deemed to adversely affect the NYU Stern community.

The entire Stern Student Code of Conduct applies to all students enrolled in Stern courses and can be found here: http://www.stern.nyu.edu/uc/codeofconduct

Students with disabilities. If you have a qualified disability that requires academic accommodation during this course, please contact the Moses Center for Students with Disabilities (CSD, 212-998-4980) and ask them to send me a letter verifying your registration and outlining the accommodation they recommend. If you need to take an exam at the CSD, you must submit a completed Exam Accommodations Form to them at least one week prior to the scheduled exam time to be guaranteed accommodation.

Reading List and <u>Tentative</u> Course Schedule

<u>Week 1:</u>
Problem Set 1 (Due Feb 12) -- the last problem will be covered in recitation in Week 2

Tuesday Jan 29: Introduction and Preliminaries: What is economics? The study of how a society uses its limited resources to produce, trade and consume goods and services.
   Chapter 1: pp. 3-19, Sections 1.1, 1.2, 1.3, 1.4

Thursday Jan 31: The Basics of Supply and Demand. The demand curve describes consumers' choice, while the supply curve describes how much firms will produce. Equilibrium of supply and demand through price.
   Chapter 2: pp. 22-48, Sections 2.1, 2.2, 2.3, 2.4, 2.5

NO Recitation Section

<u>Week 2:</u>
Tuesday Feb 5: Consumer Behavior (1): preferences and their representation by a utility function. How do consumers make a decision given the alternatives that are available?
   Chapter 3, pp. 67-81: Section 3.1

Thursday Feb 7: Consumer Behavior (2): Utility and budget constraints.
   Chapter 3, pp. 82-86: Section 3.2

Recitation Section: Math review on derivatives and algebra

<u>Week 3:</u>
Problem Set 2 (Due Feb. 21)

Tuesday Feb 12: Consumer Behavior (3): utility maximization. How do consumers maximize their utility given the budget constraint. The use of utility maximization to derive Marshallian demand curves.
   Chapter 3, pp. 86-92, 95-100: Sections 3.3, 3.5
   Problem Set 1 Due

Thursday Feb 14: Individual Demand: Study how utility maximizing choice of a good varies as Income Changes (Engel Curve), and as the price of the good itself changes (Demand Curve).
   Chapter 4, pp. 109-122, Sections 4.1, 4.2

Recitation Section: Solutions to Problem Set 1, on math tools and supply and demand

<u>Week 4:</u>
Tuesday Feb 19: No Class, President's Day

Thurs Feb 21: Market Demand: add up individual demands to get market demand. Discuss Elasticity of Demand, the responsiveness of demand to price.

Chapter 4, pp. 122 -132, pp. 137-141, Sections 4.3, 4.4, 4.6. Chapter 2, pp. 33-39, Section 2.4
Problem Set 2 Due

No Recitation Section

Week 5: (Quiz 1, Tues, Feb 26, at the beginning of lecture)
Problem Set 3 (Due March 5)

Tues Feb 26: Production Part I: We introduce firms and how they decide to produce. A firm is described by how it can transform inputs such as labor and capital into outputs, which is called a production function. We also discuss marginal versus average product of labor and capital.
 Chapter 6, 188-201, Sections 6.1, 6.2

Thursday Feb 28: Production Part II: Production with two inputs. The tradeoff between using more labor or capital is called the marginal rate of technical substitution. As well we discuss returns to scale, i.e. are larger plants more productive?
 Chapter 6, pp. 202-212, Sections 6.3, 6.4

Recitation Section: Solutions to Problem Set 2

Week 6:
Problem Set 4 (Due March 12)

Tuesday March 5: The Cost of Production: We discuss the difference between sunk costs and fixed costs and costs in the short run versus the long run.
 Chapter 7, pp. 215-245, Sections 7.1, 7.2, 7.3, 7.4, Appendix 7 pages 261-265
 Problem Set 3 Due

Thursday March 7: Profit Maximization and Competitive Supply. We look at the firm's decision to produce in a perfectly competitive market. If a firm is maximizing profits, then it sets marginal costs equal to marginal revenue.
 Chapter 8, pp. 267-283, Sections 8.1, 8.2, 8.3, 8.4, 8.5

Recitation Section: Solutions to Problem Set 3

Week 7:
Tuesday March 12: Midterm Review
 Problem Set 4 Due

Wednesday March 13: Midterm at 5:30-7:00 PM, Tisch Hall UC-50

Thursday March 14: No Class

No Recitation Section

March 18-March 22 Spring break

Week 8:
Problem Set 5 (Due April 2)

Tuesday March 26: The Analysis of Competitive Markets. We use the tools of Consumer and Producer Surplus to analyze the effect of a tax or rent control on the efficiency of a market. Pareto Efficiency.
        Chapter 9, pp. 305-319, pp. 333-340, Sections 9.1, 9.2, 9.3, 9.6

Thursday March 28: Externalities and Public Goods. In many situations your actions affect others indirectly. Does this affect market efficiency? We will talk about the failure of several fisheries due to the externality problem.
        Chapter 18, pp. 653-670, pp. 681-687, Sections 18.1, 18.2, 18.5, 18.6

Recitation Section: Solutions to Problem Set 4, Midterm Solutions

Week 9:
Problem Set 6 (Due April 9)

Tuesday April 2: Market Power: Monopoly and Monopsony (I). We analyze firms with market power that do not take the market price as given, but can choose the price of their products.
        Chapter 10, pp. 347-358, Section 10.1
        Problem Set 5 Due

Thursday April 4: Monopoly, Market Power and Antitrust (II): The social cost of monopoly and laws against monopoly: the antitrust laws.
        Chapter 10, pp. 358-372, Sections 10.2, 10.3, 10.4

Recitation Section: Solutions to Problem Set 5

Week 10: (Quiz 2, Thursday April 11, at the beginning of lecture)
Problem Set 7 (Due April 16)

Tuesday April 9: Pricing with Market Power. We look at Price Discrimination, the practice of setting different prices for different types of consumers (such as student discounts or quantity discounts).
        Chapter 11, pp. 391-402, Sections 11.1, 11.2
        Problem Set 6 Due

Thursday April 11: Choice under Uncertainty. Expected Utility and Risk Preferences. How do we make choices when certain variables such as income and prices are uncertain (making choices with risk)?
        Chapter 5, pp. 158-174, Sections 5.1, 5.2, 5.3

Recitation Section: Solutions to Problem Set 6

Problem Set 8 (Due April 23)

Tuesday April 16: Game Theory (I): Simultaneous moves. We examine strategic decision making, when you are interacting with a competitor. We look at dominant strategies and a solution concept called Nash Equilibrium.
      Chapter 13, pp. 479-490, Sections 13.1, 13.2, 13.3
      Problem Set 7 Due

Thursday April 18: Game Theory II: Games Trees, Commitment & Threats. We look at sequential games in this lecture and the strategic role of commitment and threats.
      Chapter 13, pp. 495-508, Sections 13.5, 13.6, 13.7

Recitation Section: Solutions to Problem Set 7

Week 12:
Problem Set 9 (Due April 30)

Tuesday April 23: Oligopoly (I). We examine how firms set price or quantity when they have a single competitor (Bertrand and Cournot Competition)
      Chapter 12, pp. 448-456, Sections 12.2
      Problem Set 8 Due

Thursday April 25: Oligopoly (II). We examine how firms set price or quantity when they have a single competitor (Bertrand and Cournot Competition)
      Chapter 12, pp. 456-460, Section 12.3

Recitation Section: Solutions to Problem Set 8

Week 13:
Problem Set 10 (Due May 7)

Tuesday April 30: Asymmetric Information I: Adverse Selection & Signaling. Frequently a seller or producer knows more about the quality of the product than the buyer does. How does asymmetric information affect economic outcomes?
      Chapter 17, pp. 624-635, Sections 17.1, 17.2
      Problem Set 9 Due

Thursday May 2: Asymmetric Information II: Adverse Selection & Signaling. Frequently a seller or producer knows more about the quality of the product than the buyer does. How does asymmetric information affect economic outcomes?
      Chapter 17, pp. 636-644, Sections 17.3, 17.4

Recitation Section: Solutions to Problem Set 9

Tuesday May 7: Applications of Game Theory: Auctions
        Chapter 13, pp. 508-516, Section 13.8
        Problem Set 10 Due

Thursday May 9: Final Review Lecture

Recitation Section: Solutions to Problem Set 10

Final Exam: Tuesday May 21, 8:00am – 9:50am