

Econ 7342: Microeconomic Theory II
Department of Economics, University of Houston
Spring 2022

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This course is the second part of the first-year graduate Micro theory sequence. We begin by studying extensions of the model of markets covered in Micro I, and then move on to Game theory and its applications – models of both market and nonmarket behavior.

Lectures: T, Th 1-2.20pm in SR2-134 (see email for “Soft Opening” period).

TA session: F 9-10.20am in SR2-134.

Prerequisites

Graduate level consumer and producer theory as in Econ 7341.

Grading

Problem sets (10 %), Midterm (35 %), Final (55 %).

The midterm will be on Friday, March 4, and the final on Friday, April 29. The final will cover the entire semester.

Requirements, policies and advice

This is a fast-paced course covering a lot of material that students tend to view as particularly demanding. To succeed, you will need to study throughout the semester: slacking off and trying to catch up a week before the exam is not going to work.

For the most part, the course teaches you problem solving *skills* that you can apply in your own research and to understand other people’s work. Therefore struggling on your own with problem sets, texts and lecture notes is an essential part of the course. Do not be fooled into thinking that

“If I understand it, I can use it” – understanding is only a first step; moreover, you won’t know whether you actually understand it until you’ve used it.

With this in mind, you should work on the problem sets alone, *not* in groups. If you get stuck, work harder. If you’re still stuck, ask the TA, not your classmates, for advice.

Of course, I do encourage you to discuss the material from lectures, your readings, or previous problem sets with each-other. Talking about economics with your peers is an important part of your training. Similarly, it is important that you ask questions during class if something is unclear and come to office hours when you need more help.

Lecture slides will be posted online before each class. I advise you to bring a copy with you, so you can spend less time taking notes and more time asking questions.

Obviously, reading the posted lecture notes is not a substitute for attending class.

Problem sets will generally be due at the start of the Tuesday lecture. Late assignments will not be accepted. Any absence from an exam must be documented by a doctor or approved by me in advance.

If you believe there is a grading error in your exam (other than the summing of the points), you can submit it for re-grading within two weeks after receiving your exam back. Briefly describe the error in writing; I will then re-grade the entire exam (not just a single problem).

Students are responsible for being familiar with, and abiding by, the university’s Academic Honesty Policy (<https://www.uh.edu/provost/policies-resources/honesty/>). Faculty have the responsibility of reporting incidents of alleged academic dishonesty. I would hate, but will not hesitate, to do this so please do not put me in this situation.

Various requests

In order to make our time together as pleasant as possible and to make sure that everybody gets the most out of this class, please observe the following requests.

1. Please be on time. Late arrivals are distracting to both me and your fellow students.
2. Please do not leave before the end of class. This is also very distracting.
3. During exams, if you finish early, please leave as quietly as possible. Please do not leave in the last 10 minutes (so if you finish 8 minutes early, please wait 8 minutes before you leave).
4. If you miss a class, please make sure you review what you missed before asking questions on the next class.

University policies

Face Covering Policy. To reduce the spread of COVID-19, the University strongly encourages everyone (vaccinated or not) to wear face coverings indoors on campus including classrooms for both faculty and students.

Presence in Class. Your presence in class each session means that you:

- Are NOT exhibiting any [Coronavirus Symptoms](#) that makes you think that you may have COVID-19
- Have NOT tested positive or been diagnosed for COVID-19
- Have NOT knowingly been exposed to someone with COVID-19 or suspected/presumed COVID-19

If you are experiencing any COVID-19 symptoms that are not clearly related to a pre-existing medical condition, do not come to class. Please see [Student Protocols](#) for what to do if you experience symptoms and [Potential Exposure to Coronavirus](#) for what to do if you have potentially been exposed to COVID-19. Consult the [Undergraduate Excused Absence Policy](#) or [Graduate Excused Absence Policy](#) for information regarding excused absences due to medical reasons.

COVID-19 Information. Students are encouraged to visit the University's [COVID-19](#) website for important information including on-campus testing, vaccines, diagnosis and symptom protocols, campus cleaning and safety practices, report forms, and positive cases on campus. Please check the website throughout the semester for updates.

Vaccinations. Data suggests that vaccination remains the best intervention for reliable protection against COVID-19. Students are asked to familiarize themselves with pertinent [vaccine information](#), consult with their health care provider. The University strongly encourages all students, faculty and staff to be vaccinated.

Reasonable Academic Adjustments/Auxiliary Aids. The University of Houston complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, pertaining to the provision of reasonable academic adjustments/auxiliary aids for disabled students. In accordance with Section 504 and ADA guidelines, UH strives to provide reasonable academic adjustments/auxiliary aids to students who request and require them. If you believe that you have a disability requiring an academic adjustments/auxiliary aid, please contact [the Justin Dart Jr. Student Accessibility Center](#) (formerly the Justin Dart, Jr. Center for Students with Disabilities).

Excused Absence Policy. Regular class attendance, participation, and engagement in coursework are important contributors to student success. Absences may be excused as provided in the University of Houston [Undergraduate Excused Absence Policy](#) and [Graduate Excused Absence](#)

Policy for reasons including: medical illness of student or close relative, death of a close family member, legal or government proceeding that a student is obligated to attend, recognized professional and educational activities where the student is presenting, and University-sponsored activity or athletic competition. Under these policies, students with excused absences will be provided with an opportunity to make up any quiz, exam or other work that contributes to the course grade or a satisfactory alternative. Please read the full policy for details regarding reasons for excused absences, the approval process, and extended absences. Additional policies address absences related to military service, religious holy days, pregnancy and related conditions, and disability.

Recording of Class. Students may not record all or part of class, livestream all or part of class, or make/distribute screen captures, without advanced written consent of the instructor. If you have or think you may have a disability such that you need to record class-related activities, please contact the Justin Dart, Jr. Student Accessibility Center. If you have an accommodation to record class-related activities, those recordings may not be shared with any other student, whether in this course or not, or with any other person or on any other platform. Classes may be recorded by the instructor. Students may use instructor's recordings for their own studying and notetaking. Instructor's recordings are not authorized to be shared with *anyone* without the prior written approval of the instructor. Failure to comply with requirements regarding recordings will result in a disciplinary referral to the Dean of Students Office and may result in disciplinary action.

Syllabus Changes. Due to the changing nature of the COVID-19 pandemic, please note that the instructor may need to make modifications to the course syllabus and may do so at any time. Notice of such changes will be announced as quickly as possible through email.

Textbooks

The books you become familiar with during your first year will serve as invaluable reference for the years to come, including after you graduate.

Each of you should have a copy of R. Gibbons: *Game Theory for Applied Economists*. You should also have at least one of the following: A. Mas-Collel, M. Whinston, and J. Green: *Microeconomic Theory* or H. Varian: *Microeconomic Analysis*. The former is more comprehensive and, on some topics, more advanced, but it can be hard to use as a reference for its sheer size. The latter is less comprehensive, but a very convenient reference.

In addition, you might find the following texts useful:

D. Fudenberg and J. Tirole: *Game theory* (The comprehensive reference on game theory)

M. Osborne: *Introduction to game theory* (more intuition and examples)

P. Bolton and M. Dewatripont: *Contract Theory* (The comprehensive reference on contract theory applications)

W. Nicholson: *Microeconomic theory* or any other undergraduate micro book that you are familiar with.

Relevant readings are indicated below. I advise you to read these after class. Readings marked with * follow the lectures quite closely; the others show extensions and / or different approaches to the topics covered in class.

Agenda

I. FURTHER TOPICS IN GENERAL EQUILIBRIUM

Production, Uncertainty, Welfare, Externalities, Price setting, Adverse selection

Readings: Varian 18.8*, 17.8-9*, 25.9* / MWG 15.C, 19.A-C*, 16.E-F, 11.A-B, 13.B

II. STATIC GAMES

Normal form representation; Dominance and iterated elimination; Nash Equilibrium

Readings: Gibbons 1.1-1.2* (except 1.2.C)

Mixed strategies; Existence of NE; Rationalizability

Readings: Gibbons 1.3*; MWG 8.D*, 8.AppendixA*, 8.C

III. DYNAMIC GAMES

Extensive form representation; Backward induction

Readings: Gibbons 2.1*, 2.4A*

Subgame perfection; Randomization in extensive form

Readings: Gibbons 2.4B*, 2.2B*,C

Repeated games; Folk theorems

Readings: Gibbons 2.3A-C*

IV. GAMES OF INCOMPLETE INFORMATION

Screening contracts

Readings: Varian 25.6*, 14.5-7* / MWG 14.C

Contracting under moral hazard

Readings: Varian 25.4* / MWG 14.B

Bayesian games; Bayesian Nash equilibrium

Readings: Gibbons 3.1*, 3.2A-B*

Perfect Bayesian Equilibrium; Signaling games

Readings: Gibbons 4.1*, 4.2*

Other applications; Extensions

Readings: Gibbons 4.3A*, 4.3C*, 4.4*