

Syllabus

Course Information

Course Number: ECON 630-600
Course Title: Microeconomic Theory II
Lectures: TR 13:30 pm–14:45 pm, online
Link: <https://tamu.zoom.us/j/362-397-3071>
Password: 123456

Recitation Session: F 12:00 pm–13:15 pm, NCTM 122
Link: <https://tamu.zoom.us/j/98836345033>

Instructor Details

Instructor: Professor Guoqiang Tian
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Office Hours: TR 14:45 pm-15:45 pm or by appointment
Link: <https://tamu.zoom.us/j/362-397-3071>
Password: 123456

Teaching Assistant: Tongtong Hu
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Office Hours: W 2:00 pm-3:30 pm or by appointment
Zoom Link: <https://tamu.zoom.us/j/98836345033>

Course Description and Expected Outcome

This course is a continuation of Economics 629 that mainly discusses individuals' independent decision making. The main purpose of this course is to discuss game theory, which is one of the most important analytical tools for studying the strategic interactions among individuals for rational decision making. We will consider static and dynamic games of complete and incomplete information, their various equilibrium solution concepts and refinements, and their applications to economic problems. We will investigate economic issues and the types of questions that are asked and answered in each case. As applications, the course also covers topics in market theory, externalities, and public goods. The topics covered in this course are important since they are either basic analytical tools that are used in almost all fields of economics in dealing with strategic interactions and incentives of individuals, or basic economic theories that will be needed in your future study and research.

Course Prerequisites

ECON 629 or having the permission from me.

Special Course Designation

None

Course Learning Outcomes

Texas A&M University has identified student learning outcomes that describe our institutional commitment to your educational goals. These include the ability to demonstrate critical thinking, effective communication, and social, cultural, and global competence.

Textbook and/or Resource Materials

The textbook is *Microeconomic Theory* by A. Mas-Colell, M. D. Whinston and J.R. Green (1995). The lectures, however, will be mainly based on my book draft: *Microeconomic Theory*, which can be downloaded from my website at: http://people.tamu.edu/~gtian/teaching_and_class_materials.html

Recommended Books:

Fudenberg, D. and J. Tirole (1991). *Game Theory*, MIT Press.

Gibbons, R. (1992). *Game Theory for Applied Economists*, Princeton University Press.

Mailath, J. M. and L. Samuelson (2006). *Repeated Games and Reputations*, Oxford University Press.

Myerson, R. (1991). *Game Theory*, Harvard University Press.

Osborne, M. J. and A. Rubinstein (1994). *A Course in Game Theory*, MIT Press.

Grading Policy

You will be evaluated on the basis of a series of homework problems and two exams. Homework will be handed out periodically. Learning by doing is essential for studying well. Working on the questions in these problem sets can help you understand the Text materials significantly. You are encouraged to form study groups to work on these homework assignments. A study group is up to three students. You are also strongly suggested to study the questions in Exercises, especially in my book draft. The final exam will cover the entire course materials. All of these serve as the guidance for preparing for the exams as well as the qualifying exam.

Your grade will be calculated using the method listed below:

Homework:	15%
Exam 1:	35%
Exam 2:	50%

Late Work Policy

All assignments must be turned in on time. Late work and missed exams will be governed by university rules on university-excused absences (*See Student Rule 7*: <https://student-rules.tamu.edu/rule07/>).

Course Schedule

1/21-1/26:

Review of modern economics: nature and role of modern economics, categories of theories, the standard analytical framework of modern economics, key assumptions commonly adopted in microeconomics (Readings: Chapter 1 of my book draft.)

1/26-1/28:

Introduction of non-cooperative game theory: basic concepts of non-cooperative games, including the components of a game, strategic form and extensive representations of game, pure strategy, mixed strategies, and behavior strategies. (Readings: Chapter 7 of Mas-Colell, Whinston, and Green, and Chapter 6 of my book draft.)

2/2-2/16:

Static games of complete information: their solution concepts, including dominant strategy equilibrium, iterated elimination of strictly dominated strategy equilibrium (IESDSE), Nash equilibrium, and refinements of Nash equilibrium. (Readings: Chapter 8 of Mas-Colell, Whinston, and Green, and Chapter 6 of my book draft.)

2/18-2/25:

Dynamic games of complete information: their solution concepts and refinements, including subgame perfect equilibrium and backward induction. (Readings: Chapter 9 of Mas-Colell, Whinston, and Green, and Chapter 6 of my book draft.)

3/2-3/4:

Applications in imperfect competition and oligopoly with complete information: monopolistic competition, oligopoly, static and dynamic price competition, static and dynamic quantity competition, Bertrand Cournot Model, Stackelberg Model, etc. (Readings: Chapter 12 of Mas-Colell, Whinston, and Green, and Chapter 9 of my book draft.)

3/9-3/11:

Static games of incomplete information and their solution concepts, including Bayesian game and Bayesian Nash equilibrium. (Readings: Chapter 8 of Mas-Colell, Whinston, and Green, and Chapter 6 of my book draft.)

3/16-3/18:

Dynamic games of incomplete information: their solution concepts and refinements, including weak perfect Bayesian equilibrium and sequential equilibrium. (Readings: Chapter 9 of Mas-Colell, Whinston, and Green, and Chapter 6 of my book draft.)

3/18-3/23:

Applications in imperfect competition and oligopoly with incomplete information: price competition model with asymmetric information, limit pricing with asymmetric information, etc. (Readings: Chapter 12 of Mas-Colell, Whinston, and Green, and Chapter 9 of my book draft.)

3/25:

The existence of Nash equilibrium: existence of pure and mixed Nash equilibrium in continuous games, existence of Nash equilibrium in discontinuous games (Readings: Chapter 8 of Mas-Colell, Whinston, and Green, and Chapter 6 of my book draft.)

3/30:

Exam 1

4/1-4/13

Repeated games and reputation mechanism: repeated game with perfect monitoring, feasible and individually rational payoffs, one-shot deviation principle, Folk theorems, variations of repeated games, repeated game with imperfect monitoring, and reputation mechanism. (Readings: Chapter 5 of Fudenberg and Tirole, and Chapter 7 of my book draft.)

4/15-4/22:

Externalities: Consumption externalities (preference externalities), production externality, competitive equilibrium with externalities, social preferences, and economics of happiness. Solutions to externalities, Pigovian taxes, voluntary negotiation a la Coase, compensatory tax/subsidy, creating a missing market with property right. (Readings: Chapter 11 of Mas-Colell, Whinston, and Green, and Chapter 14 of my book draft.)

4/27-4/29:

Public goods: public goods, efficient provision of public goods, Lindahl equilibrium, and free-rider problem. (Readings: Chapter 11 of Mas-Colell, Whinston, and Green, Chapter 15 of my book draft.)

Optional Course Information Items

None

Attendance Policy

The university views class attendance and participation as an individual student responsibility. Students are expected to attend class and to complete all assignments.

Please refer to [Student Rule 7](#) in its entirety for information about excused absences, including definitions, and related documentation and timelines.

All students in the course are required to attend class, take all homework assignments and exams. I request you turn your videos on if possible so that the virtual lecture is more engaging. Class attendance may be checked from time to time.

Makeup Work Policy

Students will be excused from attending class on the day of a graded activity or when attendance contributes to a student's grade, for the reasons stated in Student Rule 7, or other reason deemed appropriate by the instructor.

Please refer to [Student Rule 7](#) in its entirety for information about makeup work, including definitions, and related documentation and timelines.

Absences related to Title IX of the Education Amendments of 1972 may necessitate a period of more than 30 days for make-up work, and the timeframe for make-up work should be agreed upon by the student and instructor" ([Student Rule 7, Section 7.4.1](#)).

"The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence" ([Student Rule 7, Section 7.4.2](#)).

Students who request an excused absence are expected to uphold the Aggie Honor Code and Student Conduct Code. (See [Student Rule 24](#).)

Academic Integrity Statement and Policy

"An Aggie does not lie, cheat or steal, or tolerate those who do."

"Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that student. Students must keep appropriate records at all times. The inability to authenticate one's work, should the instructor request it, may be sufficient grounds to initiate an academic misconduct case" ([Section 20.1.2.3, Student Rule 20](#)).

You can learn more about the Aggie Honor System Office Rules and Procedures, academic integrity, and your rights and responsibilities at aggiehonor.tamu.edu.

Americans with Disabilities Act (ADA) Policy

Texas A&M University is committed to providing equitable access to learning opportunities for all students. If you experience barriers to your education due to a disability or think you may have a disability, please contact Disability Resources in the Student Services Building or at (979) 845-1637 or visit disability.tamu.edu. Disabilities may include, but are not limited to attentional, learning, mental health, sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability related needs with Disability Resources and their instructors as soon as possible.

Title IX and Statement on Limits to Confidentiality

Texas A&M University is committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws prohibit gender-based discrimination and sexual

harassment, including sexual assault, sexual exploitation, domestic violence, dating violence, and stalking.

With the exception of some medical and mental health providers, all university employees (including full and part-time faculty, staff, paid graduate assistants, student workers, etc.) are Mandatory Reporters and must report to the Title IX Office if the employee experiences, observes, or becomes aware of an incident that meets the following conditions (see [University Rule 08.01.01.M1](#)):

- The incident is reasonably believed to be discrimination or harassment.
- The incident is alleged to have been committed by or against a person who, at the time of the incident, was (1) a student enrolled at the University or (2) an employee of the University.

Mandatory Reporters must file a report regardless of how the information comes to their attention – including but not limited to face-to-face conversations, a written class assignment or paper, class discussion, email, text, or social media post. Although Mandatory Reporters must file a report, in most instances, you will be able to control how the report is handled, including whether or not to pursue a formal investigation. The University's goal is to make sure you are aware of the range of options available to you and to ensure access to the resources you need.

Students wishing to discuss concerns in a confidential setting are encouraged to make an appointment with [Counseling and Psychological Services](#) (CAPS).

Students can learn more about filing a report, accessing supportive resources, and navigating the Title IX investigation and resolution process on the University's [Title IX webpage](#).

Statement on Mental Health and Wellness

Texas A&M University recognizes that mental health and wellness are critical factors that influence a student's academic success and overall wellbeing. Students are encouraged to engage in proper self-care by utilizing the resources and services available from Counseling & Psychological Services (CAPS). Students who need someone to talk to can call the TAMU Helpline (979-845-2700) from 4:00 p.m. to 8:00 a.m. weekdays and 24 hours on weekends. 24-hour emergency help is also available through the National Suicide Prevention Hotline (800-273-8255) or at suicidepreventionlifeline.org.

COVID-19 Temporary Amendment to Minimum Syllabus Requirements

Campus Safety Measures

To promote public safety and protect students, faculty, and staff during the coronavirus pandemic, Texas A&M University has adopted policies and practices for the Fall 2020 academic term to limit virus transmission. Students must observe the following practices while participating in face-to-face courses and course-related activities (office hours, help sessions, transitioning to and between classes, study spaces, academic services, etc.):

- Self-monitoring—Students should follow CDC recommendations for self-monitoring. **Students who have a fever or exhibit symptoms of COVID-19 should participate in class remotely and should not participate in face-to-face instruction.**

- Face Coverings—[Face coverings](#) (cloth face covering, surgical mask, etc.) must be properly worn in all non-private spaces including classrooms, teaching laboratories, common spaces such as lobbies and hallways, public study spaces, libraries, academic resource and support offices, and outdoor spaces where 6 feet of physical distancing is difficult to reliably maintain. Description of face coverings and additional guidance are provided in the [Face Covering policy](#) and [Frequently Asked Questions \(FAQ\)](#) available on the [Provost website](#).
- Physical Distancing—Physical distancing must be maintained between students, instructors, and others in course and course-related activities.
- Classroom Ingress/Egress—Students must follow marked pathways for entering and exiting classrooms and other teaching spaces. Leave classrooms promptly after course activities have concluded. Do not congregate in hallways and maintain 6-foot physical distancing when waiting to enter classrooms and other instructional spaces.
- To attend a face-to-face class, students must wear a face covering (or a face shield if they have an exemption letter). If a student refuses to wear a face covering, the instructor should ask the student to leave and join the class remotely. If the student does not leave the class, the faculty member should report that student to the [Student Conduct office](#) for sanctions. Additionally, the faculty member may choose to teach that day's class remotely for all students.

Personal Illness and Quarantine

Students required to quarantine must participate in courses and course-related activities remotely and **must not attend face-to-face course activities**. Students should notify their instructors of the quarantine requirement. Students under quarantine are expected to participate in courses and complete graded work unless they have symptoms that are too severe to participate in course activities.

Students experiencing personal injury or illness that is too severe for the student to attend class qualify for an excused absence (See [Student Rule 7, Section 7.2.2.](#)) To receive an excused absence, students must comply with the documentation and notification guidelines outlined in Student Rule 7. While Student Rule 7, Section 7.3.2.1, indicates a medical confirmation note from the student's medical provider is preferred, **for Fall 2020 only, students may use the Explanatory Statement for Absence from Class form in lieu of a medical confirmation. Students must submit the Explanatory Statement for Absence from Class within two business days after the last date of absence.**

Operational Details for Spring 2021 Courses

For additional information, please review the [FAQ](#) on Spring 2021 courses at Texas A&M University.