

Syllabus

Fall, 2022

Course Information

Course Number: ECON 631
Course Title: Microeconomic Theory III
Section: 600
Time: TR 9:55 am - 11:10 am
Location: LASB 267
Credit Hours: 3

Instructor Details

Instructor: Professor Guoqiang Tian
Office: LASB 256
Phone: 845-7393
E-Mail: gtian@tamu.edu
Office Hours: TR 3: 00 pm-4:00 pm (online) or by appointment (face to face or online)

Course Description

This is a course in the field of advanced microeconomic theory. The course will study the foundations and recent developments economic theory and their applications to economic organizations. The purpose of this course is to provide students with tools when doing applied work and to find ideas for their dissertations at the frontier of research in economic theory. The course will cover the topics in mechanism design in general and optimal contract theory and auction theory in particular. The course will provide basic analytical frameworks to study incentive issues under incomplete information and have wide applications to almost all fields of economics. Part I will study the optimal contract theory or so-called the principal-agent theory: one-agent models of hidden characteristics (adverse selection) and hidden action (moral hazard). Part II will study general mechanism design with multi-agents with strategic interactions: implementation theory. Part III will study auction theory. The course will bring students to the frontier of theoretical research. The course will begin with optimal contract theory, implementation theory, and auction theory to end with open questions.

Course Prerequisites

ECON 629 and ECON 630 or have the permission from me.

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 textbooks are: (1) *The Theory of Incentives* by J. Laffont and D. Martimort; (2) *Contract Theory* by P. Bolton and M. Dewatripon, and (3) *Auction Theory* by V. Krishna. The lectures, however, will be mainly based on my book draft: *Microeconomic Theory*, which can be downloaded from Canvas and my website at:

http://people.tamu.edu/~gtian/teaching_and_class_materials.html

Grading Policy

You will be evaluated on the basis of a series of homework problems, one presentation, and two exams. Homework will be handed out periodically. Your grade will be calculated using the method list below:

Homework:	30%
Presentation:	20%
Exam:	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

Part I. The principal-agent theory: optimal contract design with one-agent, private information, incentive-compatibility, hidden characteristics, adverse selection, hidden action, moral hazard, second best, and revelation principle.

Readings: Chapters 1-5 of Laffont and Martimort; Chapters 1, 2, 4 of Bolton and Dewatripon, and Chapters 16-17 of my lecture notes *Microeconomic Theory*.

Part II Mechanism design with multi-agents: incentives and information of an economic system, economic mechanism design, implementation in Nash equilibrium and in Bayesian equilibrium, truth telling and dominant mechanism, the pivot mechanism, and optimal dominant mechanisms.

Readings: Chapters 18-19 of my lecture notes *Microeconomic Theory*.

Part III. The auction theory: private value auctions, independent private values auctions, revenues equivalence principle, auctions with interdependent values, revenue ranking principle efficiency, mechanism design with interdependent values, and multiple object auctions *Auction Theory*.

Readings: Chapters 1-10 of Krishna, and Chapter 21 of my lecture notes *Microeconomic Theory*.

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. Class attendance is required and will be checked regularly.

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](#).)

University Policies

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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 Texas A&M Helpline (979-845-2700) from 4 p.m. to 8 a.m. weekdays and 24 hours on weekends. Emergency help is also available 24 hours through the National Suicide and Crisis Hotline 988.