Syllabus

Course Information

Course Number: ECMT 660/ECON 460
Course Title: Mathematical Economics
Section: 600/500
Time: MWF 1:35 pm–2:25 pm, online
Link: https://tamu.zoom.us/j/362-397-3071
Password: 123456
Credit Hours: 3

Instructor Details

Instructor: Professor Guoqiang Tian
Office: LASB 256
Phone: 845-7393
E-Mail: gtian@tamu.edu
Office Hours: MW 9:00 am-10:00 am or by appointment
Link: https://tamu.zoom.us/j/362-397-3071
Password: 123456

Teaching Assistant: Zongxuan Han
Office: LASB 237
Phone: 917-628-6697
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Office Hours: W 2:00 pm-4:00 pm or by appointment
Link: Zoom ID: 450 246 1988

Course Description and Expected Outcome

The purpose of this course is to introduce some basic mathematical methods (solution techniques) used in the three major types of economic analysis: equilibrium analysis; comparative statics; and optimization problems, which correspond to Parts 2-4 in the textbook, respectively. These mathematical topics are subjects in linear algebra (matrix algebra), mathematical analysis, and optimization theory. The mathematical methods covered in this course are fundamental since they are indispensable for a proper understanding of modern economics and they provide basic mathematical tools needed in many fields related to economics and business sciences. Through learning about the basic mathematical methods (solution techniques) introduced in this course, students are expected to have a mastery of the fundamentals indispensable for a proper understanding of modern economics and grasp the basic mathematical tools needed in many economics and business-related fields.

Course Prerequisites

MATH 131/141 (or MATH 151/152)
Special Course Designation

This is a stacked course for both graduate and undergraduate students. Students taking ECMT 660 are required to study additional material in each major topic area that is not required for students taking ECON 460. In addition, students taking ECON 460 are not competing against students taking ECMT 660. Grades will be assigned for those taking ECON 460 separately from those taking ECMT 660.

Textbook and/or Resource Materials


Grading Policy

You will be evaluated on the basis of seven homework assignments, two 50-minute tests and the final exam. Homework will be handed out periodically. Your grade will be calculated using the method listed below:

- Homework: 20%
- Test 1: 20%
- Test 2: 20%
- Final exam: 40%

Overall total point is 100. The grade distribution is as follows. A student with point between 90-100, 80-89, 70-79, 60-69, or 0-59 will receive a grade A, B, C, D, or F, respectively.

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. Equilibrium Analysis and Linear Algebra**

1. The Nature of Mathematical Economics (Chapter 1): Week 1
2. Equilibrium Analysis in Economics (Chapter 3): Week 1
3. Linear Models and Matrix Algebra (Chapter 4): Week 2
4. Linear Models and Matrix Algebra Continued (Chapter 5): Week 3-4

**Due Date of Homework 1 (for Chapter 3-4): Friday, September 4**  
**Due Date of Homework 2 (for Chapter 5): Friday, September 18**

Test 1: Friday, September 25 1:35 pm–2:25 pm
Part II. Comparative-Static Analysis and Mathematical Analysis

5. Comparative Statics and the Concept of Derivative (Chapter 6): Week 5
6. Rules of Differentiation and Their Use in Comparative Statics (Chapter 7): Week 6-7
7. Comparative-Static Analysis of General Function Models (Chapter 8): Week 8

Due Date of Homework 3 (for Chapter 6-7): Friday, October 9
Due Date of Homework 4 (for Chapter 8): Friday, October 16

Test 2: Friday, October 23 1:35 pm–2:25 pm

Part III. Optimization Theory

8. Optimization: One Choice Variable (Chapter 9): Week 9-10
9. Exponential and Logarithmic Functions (Chapter 10): Week 10
10. Optimization: More Than One Choice Variable (Chapter 11): Week 11-12
11. Optimization with Equality Constraints (Chapter 12): Week 13-14
12. Optimization with Inequality Constraints (Chapter 13): Week 15

Due Date of Homework 5 (for Chapter 9-10): Friday, October 30
Due Date of Homework 6 (for Chapter 11): Friday, November 13
Due Date of Homework 7 (for Chapter 12): Monday, November 23

Final Exam: Wednesday, December 2, 11:00 am-1:30 pm

Attendance Policy

All students in the course are required to attend class, take all homework assignments and exams. Class attendance will be checked regularly.

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.

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.)

To have my permission to make-up exams, you should especially follow the rules stated in Section 7.1.1: “Unless otherwise stated in this rule, to be considered for an excused absence the student must notify the instructor in writing (e-mail is acceptable) prior to the day of absence. In cases where advanced notification is not possible, the student must provide notification by the end of the second business day after the last date of the absence. This notification must include an explanation of why notice could not be sent”.

All agreements should be in writing. If you inquire for the possibility to obtain an excuse, or any other circumstance that requires any special accommodation in class, we need to communicate in writing the scope of any arrangement. If a conversation with me makes you think that you are entitled to any special accommodation, you need to send me an email and inquire for a confirmation of this. Unless there is a written communication from me, you are not entitled to any special accommodation.

**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.

Academic dishonesty will not be tolerated. Representing someone else’s work as their own or **cheating in any other manner** will be pursued with disciplinary action and will result in an “F*” grade for the class (F* means that a student gets an F in the course and has to go through a remediation course about the ethics relating to breaking the Aggie code of Honor).

It is prohibited to use a smartphone, cellphone, or other electronic communication device during an exam. If a student is found using such a device during an exam, texting, chatting, messaging, calling, reading a message from its screen, etc., the student will be reported to the honor system and will result in an “F*” grade for the class.
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.
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 Fall 2020 Courses

For additional information, please review the FAQ on Fall 2020 courses at Texas A&M University.