Term: Fall 2022, 08/29/2022-12/16/2022
Class Meetings: Thursday 6:30-9:20pm, Wooten Hall 316
Office Hours: Thursday 2:00-4:00pm and by appointment, Wooten Hall 367 & Zoom
Professor: Yang Zhou, Ph.D. (yang.zhou2@unt.edu)
Teaching Assistant: Jordan Lopez (jordan.lopez@unt.edu)
Recitation: Wednesday 3:30-4:50pm, Wooten Hall 221
Office Hours: By appointment, Wooten Hall 360 & Zoom


Prerequisite(s): ECON 3550 or ECON 5030 and MATH 1710 or consent of department.

Course Objectives: This course is graduate level mathematical economics. It will provide the most necessary tool box for the economic theory and econometrics courses. It will cover the matrix algebra, comparative static analysis, unconstrained univariate optimization, and basic dynamic economic analysis.

Expected Learning Outcomes:
1. Use the tools of matrix algebra in economic applications.
2. Apply the calculus tools to perform comparative static analysis.
3. Perform basic dynamic economic analysis through solving basic linear and nonlinear difference and differential equations.

Instructional Procedures: Lectures, class participation, homework assignments, recitations, and exams.

Evaluations Procedures:
- Course Requirements: reading the textbook and working on the homework is required.
- Attendance policies: attendance is required for the class and recitation. Students who are absent from class for any reason are responsible for missed work. No late homework accepted. More details about attendance are provided in a later section.
- Homework will be assigned at the beginning of each chapter and the due date will be announced in class (normally two weeks turnover). Each set will be graded briefly for correctness and completeness.
- Performance will be evaluated based on homework, class participation, and exams.

Course Schedule and Topic Outline (Subject to Change):
- Economic Models (chapter 2 in AW)
- Equilibrium Analysis in Economics (chapter 3 in AW)
- Linear Models and Matrix Algebra (chapters 4-5 in AW)
- Comparative Statics and Derivative (chapter 6 in AW)
- Rules of Differentiation and Use in Comparative Statics (chapter 7 in AW)
• Comparative Static Analysis of General Function Models (chapter 8 in AW)
• Univariate Optimization (chapter 9 in AW)
• Exponential and Logarithmic Functions (chapter 10 in AW)
• The Case of More than One Choice Variable (chapter 11 in AW)
• Optimization with Equality Constraints (chapter 12 in AW)
• Further Topics in Optimization (chapter 13 in AW)
• Economic Dynamics and Integral Calculus (chapter 14 in AW)

Grading Policy:

• Homework Assignments (260 points, 20 points each chapter’s HW)
• Participation (40 points)
• Midterm Exam (300 points), Thursday October 20 during class time at WH 316 (tentative, more details to come).
• Final Exam (400 points, comprehensive), Thursday December 15, 6:30-9:20pm at WH 316, covering all the chapters.
• Total: 1000 points
• Course grades are based on 1000 possible points and are assigned according to the following scale: A = 900 – 1,000; B = 800 – 899; C = 700 – 799; D = 600 – 699; F = 599 or below

Contacting Me:
I am a resource for your success in this course and at UNT!

Office hours: You do not need an appointment to meet me during the office hours. If you are unable to meet during my office hours, please email me to set up a mutually convenient time.

Via email: All email must be sent through your UNT student email address (@my.unt.edu) specifically to me at yang.zhou2@unt.edu. Email from any other source or to any other email address is unlikely to make it through UNT filters and will not be answered.

If you contact me via email, the subject line of your email must have your course and section number to be opened. I will do my best to respond to all reasonable emails within 1 business day.

Email correspondence should be appropriate and should not contain requests for me to provide you with missed assignments, handouts, notes, grades, etc. and should never be a request to treat your coursework and grade differently than what is outlined on this syllabus. Inappropriate emails and student requests will be forwarded to the corresponding campus office (official).

Attendance:

Students are expected to attend class and recitation meetings regularly and to abide by the attendance policy established for the course. It is important that you communicate with the professor and the instructional team prior to being absent, so you, the professor, and the instructional team can discuss and mitigate the impact of the absence on your attainment of course learning goals. Please inform the professor and instructional team if you are unable to attend class meetings due to an excusable absence acknowledged by the University.

Copyrights:

Class lectures are protected by state common law and federal copyrights. They are the original expression of the Instructor and may be recorded at the same time as delivered in order to secure protection. Whereas, you are authorized to take notes in class thereby creating a derivative of the lecture, the authorization extends only to making one set of notes for your personal use. You are not authorized to record lectures or to make commercial use of them without the Instructor’s prior express written permission.
### Course Calendar (Subject to Change, Depending on Course Progress)

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<th>Week</th>
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<th>Chapter(s)</th>
<th>Special Note</th>
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<td><strong>Midterm Exam</strong> (Chs 2-8, tentative)</td>
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### Disability Accommodation:

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with an accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the Office of Disability Accommodation website at http://www.unt.edu/oda. You may also contact them by phone at (940) 565-4323.

The Economics Department cooperates with the Office of Disability Accommodation (ODA) to make reasonable accommodations for qualified students with disabilities. If you have not registered with ODA, we encourage you to do so. Please present your written accommodation request on or before the 4th class day.

### Academic Integrity Policy:

**Academic Integrity Standards and Consequences.** According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University. The UNT Department of Economics adheres to the University’s Policy on Cheating and Plagiarism. To view the complete Student Academic Integrity policy, go to https://policy.unt.edu/policy/06-003.

**Cheating:**

The use of unauthorized assistance in an academic exercise, including but not limited to:

1. Use of any unauthorized assistance to take exams, tests, quizzes, or other assessments;
2. Dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems or carrying out other assignments;
3. Acquisition, without permission, of tests, notes or other academic materials belonging to a faculty or staff member of the University;
4. Dual submission of a paper or project, or re-submission of a paper or project to a different class without express permission from the instructor;
5. Any other act designed to give a student an unfair advantage on an academic assignment.

Plagiarism:
Use of another’s thoughts or words without proper attribution in any academic exercise, regardless of the student’s intent, including but not limited to:

1. The knowing or negligent use by paraphrase or direct quotation of the published or unpublished work of another person without full and clear acknowledgement or citation;
2. The knowing or negligent unacknowledged use of materials prepared by another person or by an agency engaged in selling term papers or other academic materials.

Prohibition of Discrimination, Harassment, and Retaliation (Policy 16.004):
The University of North Texas (UNT) prohibits discrimination and harassment because of race, color, national origin, religion, sex, sexual orientation, gender identity, gender expression, age, disability, genetic information, veteran status, or any other characteristic protected under applicable federal or state law in its application and admission processes; educational programs and activities; employment policies, procedures, and processes; and university facilities. The University takes active measures to prevent such conduct and investigates and takes remedial action when appropriate.

Acceptable Student Behavior:
Student behavior that interferes with an instructor’s ability to conduct a class or other students’ opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student’s conduct violated the Code of Student Conduct. The University’s expectations for student conduct apply to all instructional forums, including University and electronic classroom, labs, discussion groups, field trips, etc. Visit UNT’s Code of Student Conduct (https://deanofstudents.unt.edu/conduct) to learn more.

Sexual Assault Prevention:
UNT is committed to providing a safe learning environment free of all forms of sexual misconduct, including sexual harassment, sexual assault, domestic violence, dating violence, and stalking. Federal laws (Title IX and the Violence Against Women Act) and UNT policies prohibit discrimination on the basis of sex, and therefore prohibit sexual misconduct. If you or someone you know is experiencing sexual harassment, relationship violence, stalking, and/or sexual assault, there are campus resources available to provide support and assistance. UNT’s Survivor Advocates can assist a student who has been impacted by violence by filing protective orders, completing crime victim’s compensation applications, contacting professors for absences related to an assault, working with housing to facilitate a room change where appropriate, and connecting students to other resources available both on and off campus. The Survivor Advocates can be reached at SurvivorAdvocate@unt.edu or by calling the Dean of Students Office at (940) 565-2648. Additionally, alleged sexual misconduct can be non-confidentially reported to the Title IX Coordinator at oeo@unt.edu or at (940) 565-2759.

Advice and Encouragement:
You will be most successful in any economics class if you are:

1. Curious: Economics applies to everyone in virtually all of their everyday activities. Be inquisitive, take an interest in how the world works.
2. Diligent: Read the textbook, participate in class, do the homework, study for the exams, etc. Efforts do pay off.

“In studying the effects of any given economic proposal we must trace not merely the immediate results but the results in the long run, not merely the primary consequences but the secondary consequences, and not merely the effects on some special group but the effects on everyone.” - Henry Hazlitt
“The master-economist must possess a rare combination of gifts. He must reach a high standard in several different directions and must combine talents not often found together. He must be mathematician, historian, statesman, philosopher—in some degree. He must understand symbols and speak in words. He must contemplate the particular in terms of the general, and touch abstract and concrete in the same flight of thought. He must study the present in the light of the past for the purposes of the future.” - John Maynard Keynes

“The curious task of economics is to demonstrate to men how little they really know about what they imagine they can design.” - Friedrich A. Hayek