

Economics 2301
Mathematical Economics
Oak Hall 105
MW 16:40-17:55

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Office Hours: MW 18:00-19:00 pm and by appointment

Required Text:

Fundamental Methods of Mathematical Economics, 6th Edition (2005)
Chiang, A. and Wainwright, K.
ISBN: 9780070109100
Supplemental learning materials will be posted on HuskyCT.

Prerequisites:

ECON 1200 or both ECON 1201 and 1202, and MATH 1071Q or 1100Q or 1121Q or 1131Q.
A good mastery of partial and total derivative, total differentiation and matrix algebra makes it easier to follow the pace of this course.

Course Description

This course covers the mathematics needed to develop and solve theoretical models in micro, macroeconomics and econometrics. Thus, the focus is on how economic theory is made precise through the application of mathematical techniques such as differential calculus and matrix algebra. Students will learn about the comparative static techniques used to derive testable predictions from theoretical models. Familiarizing the math techniques is necessary, but the emphasis of the course is to develop the mindset for setting up an economic model that addresses the question or problem at hand.

Learning Objectives.

I aim to develop the ability to answer economic questions through math modeling. Besides, through the elaboration of economic theories by detailed math inductions, I aim to dismiss the fear in both math and economics. Having experienced solving close-to-life economic problems, students are expected to develop strong intuitions and interest in economics.

By the time students finish this course they should be able to:

1. Understand how mathematics is used to develop, solve and interpret economic models
2. Apply the understanding of class material into creative, independent problem solving
3. Work through problems in collaborative and individual settings

Grade Policy

Problem sets (30%)

Problems sets will be assigned periodically during the course. They will consist of both economics and math problems to enhance your understanding of the course material. There are 7 times of problems in total. Two of the lowest score will be dropped. Thus, the remaining 5 times will count 5% each towards the final grade. Collaborative work is allowed but you have to hand in your own work with printer name and date.

Midterm (40%)

There are two midterms. Each of them counts 20% towards the final grade. I will announce the content to the exam in class. Practice exams will be posted one week prior

to the exam date to favor your review. No calculators are allowed during exams and academic misconduct is strictly prohibited.

Final exam (30%)

I will provide a practice exam for the final. The final exam is cumulative with the emphasis to test your mastery of math modeling under economic context.

There are plenty of *extra points* available in your exams. If you have made enough extra points in your first two exams, you have the option to drop the final. In addition, you can also earn extra credits (up to a complete letter grade) with active class participation such as asking questions and solving problems on the board.

Final grade reference chart

Final grade \geq	<	Letter grade
92.0		A
90.0	92.0	A-
88.0	90.0	B+
82.0	88.0	B
80.0	82.0	B-
78.0	80.0	C+
72.0	78.0	C
70.0	72.0	C-
68.0	70.0	D+
62.0	68.0	D
60.0	62.0	D-
	60.0	F

Course Policies

- Attendance is not mandatory but highly recommended. Missing classes expose you to the higher possibility to follow the future classes. If you have to miss class, please request the notes you missed from your classmates. You are strongly suggested to seek assistance from me during office hours to catch up with the content.
- Problem sets need to be handed in either during class time or placed in my mailbox by the end of the due day. No email submissions accepted.
- Cell phones are not supposed to be used in class. If you need to make/receive a call, please step out of the classroom.

- Computers are only allowed for taking notes, although I highly suggest taking notes with pen and paper. Please do not use your computer for personal reasons (online shopping, checking email, watching YouTube, etc.) during class.
- Any disputes over grading should be submitted within a week after the grade posted. Disputes submitted later than that will not be accepted
- No make-up midterm exams are allowed unless adequate reason supported by official documentation. You should inform me as soon as you know that you have to miss the exam.
- If exams are piled up in the exam day or you have a time conflict, you should inform me to obtain permission to schedule a make-up exam.
- Any request to reschedule exams due to a foreseeable reason should be submitted for consideration at least seven days ahead of the exam.
- You should consult with me if you have a need for a late-drop or any changes with the registration status of the class after the first two weeks.

Supportive Resources

The Economics department offers free tutoring. However, I strongly suggest that you consider me as the primary resource for assistance and make an appointment. When scheduling an appointment, if you can email with specific questions or confusion, the efficiency of our meeting will be greatly improved.

Tentative Course Outline

Week 1-Week 5 (Solution to linear model)

- Introduction to math econ
- Matrix algebra
- Matrix properties
- Linear models and application

Midterm 1 (3rd Oct)

Week 6- Week 10 (Static Analysis)

- Derivative, differentiation and comparative static analysis
- Multivariate calculus
- Comparative static analysis

Midterm 2 (7th Nov)

Week 11- Week 15 (Optimization)

- Derivative test and optimization
- Multivariate unconstrained optimization
- Constraint in optimization

- Multivariate optimization with constraint
- (Further topics in economics)

Final (12th Dec)

This tentative schedule is subject to change. I will post weekly lecture summaries for your reference.

For HuskyCT Support:

Digital Learning Center, Level One of Homer Babbidge Library.

Phone: (860) 486-1187

Website: <http://dlc.uconn.edu>

Accommodations:

The Center for Students with Disabilities (CSD) at UConn provides accommodations and services for qualified students with disabilities. If you have a documented disability for which you wish to request academic accommodations and have not contacted the CSD, please do so as soon as possible. The CSD is located in Wilbur Cross, Room 204 and can be reached at (860) 486-2020 or at csd@uconn.edu.

Detailed information regarding the accommodations process is also available on their website at www.csd.uconn.edu

Student Responsibilities:

As a member of the University of Connecticut student community, you are held to certain standards and academic policies. In addition, there are numerous resources available to help you succeed in your academic work. This section provides a brief overview of important standards, policies, and resources.

Student Code:

You are responsible for acting in accordance with the [University of Connecticut's Student Code](http://www.community.uconn.edu/student_code.html), available at http://www.community.uconn.edu/student_code.html. Review and become familiar with these expectations. In particular, make sure you have read the section that applies to you on Academic Integrity:

- [Academic Integrity in Undergraduate Education and Research](#)

Cheating and plagiarism are taken very seriously at the University of Connecticut. As a student, it is your responsibility to avoid plagiarism. If you need more information about the subject of plagiarism, use the following resources:

- [Plagiarism: How to Recognize it and How to Avoid It](#)
- [University of Connecticut Libraries' Student Instruction](#) (includes research, citing and writing resources)

Copyright:

Copyrighted materials within the course are only for the use of students enrolled in the course for purposes associated with this course and may not be retained or further disseminated.

Netiquette and Communication:

At all times, course communication with fellow students and the instructor are to be professional and courteous. It is expected that you proofread all your written communication, including discussion posts, assignment submissions, and mail messages. If you are new to online learning or need a netiquette refresher, please look at this guide titled, The Core Rules of Netiquette.

Adding or Dropping a Course:

If you should decide to add or drop a course, there are official procedures to follow:

- Matriculated students should add or drop a course through the Student Administration System.
- Non-degree students should refer to Non-Degree Add/Drop Information located on the registrar's website.

You must officially drop a course to avoid receiving an "F" on your permanent transcript. Simply discontinuing class or informing the instructor you want to drop does not constitute an official drop of the course. For more information, refer to the Undergraduate Catalog.

I strongly suggest that you discuss with me about late drop before you take the official procedures.

Final Exam Policy

In accordance with UConn policy, students are required to be available for their final exam and/or complete any assessments during the time stated. If you have a conflict with this time you must obtain official permission to schedule a make-up exam with the Office of Student Support and Advocacy (OSSA). If permission is granted, OSSA will notify the instructor. Please note that vacations, previously purchased tickets or reservations, graduations, social events, misreading the assessment schedule, and oversleeping are not viable reasons for rescheduling a final.

Policy against Discrimination, Harassment, and Related Interpersonal Violence:

The University is committed to maintaining an environment free of discrimination or discriminatory harassment directed toward any person or group within its community – students, employees, or visitors. Academic and professional excellence can flourish only when each member of our community is assured an atmosphere of mutual respect. All members of the University community are responsible for the maintenance of an academic and work environment in which people are free to learn and work without fear of discrimination or discriminatory harassment. In addition, inappropriate amorous relationships can undermine the University's mission when those in positions of authority abuse or appear to abuse their authority. To that end, and in accordance with federal and state law, the University prohibits discrimination and discriminatory harassment, as well as inappropriate amorous relationships, and such behavior will be met with appropriate disciplinary action, up to and including dismissal from the University. Additionally, to protect the campus community, all non-confidential University employees (including faculty) are required to report sexual assaults, intimate partner violence, and/or stalking involving a student that they witness or are told about to the Office of Institutional Equity. The University takes all reports with the utmost seriousness. Please be aware that while the information you provide will remain private, it will not be confidential and will be shared with University officials who can help.

Statement on Absences from Class Due to Religious Observances and Extra-Curricular Activities:

Faculty and instructors are strongly encouraged to make reasonable accommodations in response to student requests to complete work missed by absence resulting from religious observances or participation in extra-curricular activities that enrich their experience, support their scholarly development, and benefit the university community. Examples include participation in scholarly presentations, performing arts, and intercollegiate sports when the participation is at the request of or coordinated by, a University official. Such accommodations should be made in ways that do not dilute or preclude the requirements or learning outcomes for the course. Students anticipating such a conflict should inform their instructor in writing within the first three weeks of the semester, and prior to the anticipated absence, and should take the initiative to work out with the instructor a schedule for making up missed work. For conflicts with final examinations, students should contact the Office of the Dean of Students.