UCONN
UNIVERSITY OF CONNECTICUT

Department of Economics

Syllabus – Fall 2018

Excluding materials for purchase, syllabus information may be subject to change. The most up-to-date syllabus is located within the course in HuskyCT.

Course and Instructor Information

Course Title: Mathematical Economics
Credits: 3
Format: Face-to-Face
Prerequisites: ECON 1200 or both ECON 1201 and 1202; MATH 1071Q or 1110Q or 1131Q.
Professor: Dr. Natalia V. Smirnova

Email: Natalia.Smirnova@uconn.edu
Office: Room **3.65**, Stamford campus
Office Hours/Availability: Wednesdays 1:30 – 2:30 p.m. and by appointment
Course HuskyCT Web Page: https://lms.uconn.edu

Course Materials

Required Materials:

Alpha C. Chiang and Kevin Wainwright. Fundamental Methods of Mathematical Economics, 4th edition, 2005, McGraw-Hill. *ISBN*: 0-07-010910-9

The textbook can be purchased at the UConn Bookstore or directly from McGraw-Hill here.

The Chiang and Wainwright textbook may be rented from Amazon for 30% of the purchase price.

Additional course readings and media are available within HuskyCT, through either an Internet link or Library Resources.

Course Description

This is a one-semester course in *mathematical economics*. It provides a basic introduction to the application of mathematical techniques to economic problems. Methods studied: set theory, linear algebra, equilibrium analysis, unconstrained and constrained optimization, comparative statics, and linear programming.

Course Objectives

By the end of the semester, students should be able to:
- Appreciate the applied nature of basic mathematical methods as indispensable tools for a proper understanding of current economic literature.
- Understand major types of economic analysis: statics (equilibrium analysis), comparative statics, optimization problems (as a special type of statics), dynamics, and dynamic optimization.
- Use the following mathematical methods to tackle various types of economic analysis: matrix algebra, differential and integral calculus, differential equations, difference equations, and optimal control theory.
- Translate an understanding of class material into creative, independent problem-solving skills.
- Work through problems in a collaborative manner.

Course Outline and Calendar

Week	Topic	Assignments
1. Monday, August 27	Course overview, requirements, logistics, etc. Chapter 1 – The Nature of Mathematical Economics Chapter 2 – Economic Models	Exercises 2.3., 2.4, 2.5
2. Monday, September 10	Chapter 3 – Equilibrium Analysis in Economics	Exercises 3.2, 3.3 (problems 1, 2, 6, 7) 3.4 (problem 3), 3.5
3. Monday, September 17	Chapter 4 – Linear Models and Matrix Algebra	Exercises 4.1, 2, 3, 4, 5, 6, 7
4. Monday, September 24	Exam # 1 – Take home	Chapters 1-4
5. Monday, October 1	Chapter 5 – Linear Models and Matrix Algebra (Continued)	Exercises 5.1, 2, 3, 4, 5, 6, 7
6. Monday, October 8	Chapter 6 -- Comparative Statics and the Concept of Derivative	Exercises 6.2, 3, 4, 5, 6, 7
7. Monday, October 15	Chapter 7 – Rules of Differentiation and Their Use in Comparative Statics	Exercises 7.1, 2, 3, 4, 5, 6
8. Monday, October 22	Exam # 2 – Take home	Chapters 5-7
9. Monday, October 29	Chapter 8 – Comparative-Static Analysis	Exercises 8.2, 3, 4, 5, 6 Preparation for Exam #2
10. Monday, November 5	Chapter 9 -- Optimization	Exercises 9.2, 3, 4, 5, 6
11. Monday, November 12	Chapter 12 – Optimization with Equality Constraints	Exercises 12.2, 3, 4, 5, 6, 7
12. Monday, November 26	Chapter 15 – First-Order Differential Equations	Exercises 15.1, 2, 3, 4, 5, 6, 7
13. Monday, December 3	Chapter 17 – First-Order Difference Equations	Exercises 17.2, 3, 4, 5, 6 Preparation for the Final
14. Monday, December 10	Final Exam – in class	Chapters 8, 9, 12, 15, 17

Course Requirements and Grading

Summary of Course Grading:

Course Components	Percentage	
Participation	25	Participation is **consistent** attendance, preparedness, engagement, and punctuality.
Exam #1	25	Take-home
Exam #2	25	Take-home
Final Exam	25	In class
Total	100	

Participation

Students are expected to come to class regularly, be prepared to participate in class discussions, and to take part in small-group problem-solving activities that will involve reporting out to the larger group. Active participation is

essential for creating an engaging classroom environment by offering meaningful contributions to class discussions.

Exams

Exams will consist of problems to be solved in class. These problems will be consistent with problems we practice solving during class and problems assigned as homework. Practice makes it perfect!

Grading Scale:

Grade	Letter Grade	GPA
93-100	A	4.0
90-92	A-	3.7
87-89	B+	3.3
83-86	B	3.0
80-82	B-	2.7
77-79	C+	2.3
73-76	C	2.0
70-72	C-	1.7
67-69	D+	1.3
63-66	D	1.0
60-62	D-	0.7
<60	F	0.0

Due Dates

The instructor reserves the right to change dates accordingly as the semester progresses. All changes will be communicated in an appropriate manner.

Email

I will communicate with you via your UConn email address (usually firstname.lastname@uconn.edu). It is your responsibility to check this email account for messages. If you have a personal email address that you prefer to use, forward your UConn email to that address.

Student Responsibilities and Resources

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. Review these important standards, policies and resources, which include:
- The Student Code
  - Academic Integrity
  - Resources on Avoiding Cheating and Plagiarism
- Copyrighted Materials
- Netiquette and Communication
- Adding or Dropping a Course
- Academic Calendar
- Policy Against Discrimination, Harassment and Inappropriate Romantic Relationships

- Sexual Assault Reporting Policy

Students with Disabilities

Students needing special accommodations should work with the University's Center for Students with Disabilities (CSD). You may contact CSD by calling (860) 486-2020 or by emailing csd@uconn.edu. If your request for accommodation is approved, CSD will send an accommodation letter directly to your instructor(s) so that special arrangements can be made. (Note: Student requests for accommodation must be filed each semester.)

Blackboard measures and evaluates accessibility using two sets of standards: the WCAG 2.0 standards issued by the World Wide Web Consortium (W3C) and Section 508 of the Rehabilitation Act issued in the United States federal government." (Retrieved March 24, 2013 from Blackboard's website)

Software Requirements

The technical requirements for this course include:

- Word processing software
- Adobe Acrobat Reader
- Reliable internet access

Help

Technical and Academic Help provides a guide to technical and academic assistance.

Minimum Technical Skills

To be successful in this course, you will need the following technical skills:

- Use electronic mail with attachments.
- Save files in commonly used word processing program formats.
- Copy and paste text, graphics or hyperlinks.
- Work within two or more browser windows simultaneously.
- Open and access PDF files.

University students are expected to demonstrate competency in Computer Technology. Explore the Computer Technology Competencies page for more information.

Evaluation of the Course

Students will be provided an opportunity to evaluate instruction in this course using the University's standard procedures, which are administered by the Office of Institutional Research and Effectiveness (OIRE).

Additional informal formative surveys may also be administered within the course as an optional evaluation tool.