

Mathematics for Economics; QI

This class fulfills the university QI

ECON 3620 Spring 2014

Monday, Wednesday 1:25 PM – 2:45 PM

Instructor: Up Sira Nukulkit

Office: OSH , Economic Department, Cubicle #6

Office Hours: M/W 12.30 - 1.15 pm at OSH 378 or by appointment (at my office)

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Overview:

This course will introduce students on how economists use mathematics as a main tool in their analyses in order to understand, and sometimes apply, economic theory. It is intended to cover several important mathematical concepts that will be studied in the context of their applications to economics. Also, it is aimed to develop students' abilities to use mathematical techniques to solve problems in economics. At the end of this semester, students would be expected to understand basic mathematical techniques used in economics such as linear algebra, derivative, differential, optimization with and without constraints, and matrix algebra. However, students should be aware that the real use of mathematics in economics is far more advanced than what they will see in the class; therefore, the course is merely designed to be the first step for those who are interested in mathematical economics.

Credits: 3 semester credit hours

Prerequisites: College Algebra, ECON 2010 and ECON 2020

Required Books: *Fundamental Methods of Mathematical Economics*, 4th ed., by Alpha C. Chiang and Kevin Wainwright.

Course Requirements:

Three Homework Assignments $5 \times 8\% = 40\%$

Three Exams $3 \times 20\% = 60\%$

Policy for Late Assignment

Turning in assignment as hard copy at the beginning of the class is preferable. If you cannot come to the class, you must email me the assignment before the class time. After receiving the assignment, I will email back saying that I already received it. Late assignment will be accepted



within one week after the due date with 20% penalty. Please note that no work will be accepted after one week from the due date

Schedule

Week	Class	Topic	Note
1	6-Jan	Nature of Mathematical Economics	
Ch.1-2	8-Jan	Function	
2	13-Jan	Constructing a Model; Single Commodity	Assignment1
Ch.3	15-Jan	Constructing a Model; General Market	
3	20-Jan	Martin Luther King Jr. Day	
	22-Jan		Assignment1 Due
4	27-Jan	Difference Quotient and Slope	
Ch.6-7	29-Jan	Rules of Differentiation	
5	3-Feb	Rules of Differentiation	Assignment2
Ch.9	5-Feb	Optimization; First Derivative	
6	10-Feb		Assignment2 Due
	12-Feb	Optimization; Second and Higher Derivative	
7	17-Feb	Presidents' Day	
	19-Feb	Review for Exam 1	
8	24-Feb	Exam1	
Ch.7	26-Feb	Partial Differentiation and Multivariable Calculus	
9	3-Mar	The Uses of Partial Differentiation	
Ch.7-8	5-Mar	Total Derivatives, and Differential	Assignment3
10	10-Mar	Spring Break	
	12-Mar		
11	17-Mar	Optimization; Second-Order Partial Derivatives	Assignment3 Due
Ch.9	19-Mar	Optimization of Multivariable Functions	Assignment4
12	24-Mar	Effects of a Constraint; Lagrange-Multiplier	Assignment4 Due
Ch.12	26-Mar	Review for Exam2	
13	31-Mar	Exam2	
Ch.4	2-Apr	Matrices, Matrix Operations, and Determinants	
14	7-Apr	Matrix Inversion	Assignment5
Ch.4	9-Apr	Solving Linear Equations with Matrix Inversion	
15	14-Apr	Cramer's Rule	Assignment5 Due
	16-Apr		
16	21-Apr	Review for Exam 3	
	23-Apr	Exam 3	

University policies

The University expects regular attendance at all class meetings. Instructors must communicate any particular attendance requirements of the course to students in writing on or before the first class meeting. Students are responsible for acquainting themselves with and satisfying the entire range of academic objectives and requirements as defined by the instructor.

The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in alternative format with prior notification to the Center for Disability Services.