

Mathematics for Economics

ECON 3620-001 Spring 2013

Monday/Wednesday 1:25-2:45 PM OSH 107

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Office:	OSH , Economic Department, Cubicle #2
Office Hours:	M/W 3-4 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. The textbook is available in the university's bookstore.

Tentative Schedule

Week	Date	Topics	Notes
1st	1/7/2013	Nature of Mathematical Economics & Economic Models	
	1/9/2013	Economic Model: Function	
2nd	1/14/2013	Constructing a model: Single Commodity	
	1/16/2013	Constructing a model: General Market	
3rd	1/21/2013	No Class	Martin Luther King Jr. Day
	1/23/2013	Difference Quotient and Slope	
4th	1/28/2013	Rules of Differentiation	
	1/30/2013	Rules of Differentiation	
5th	2/4/2013	Optimization: First Derivative Test	
	2/6/2013	Optimization: Second and Higher Derivatives, and Second Derivative Test	Deadline for Assignment 1
6th	2/11/2013	Review for First Midterm Exam	
	2/13/2013	First Midterm Exam	
7th	2/18/2013	No Class	Presidents' Day
	2/20/2013	Partial Differentiation and Multivariable Calculus	
8th	2/25/2013	The Use of Partial Differentiation in Economics	
	2/27/2013	Total Derivatives	
9th	3/4/2013	Optimization: Second-Order Partial Derivatives	
	3/6/2013	Optimization of Multivariable Functions	
10th	3/11/2013	No Class	Spring Break
	3/13/2013		
11th	3/18/2013	Effects of a Constraint: Lagrange-Multiplier method	
	3/20/2013	Effects of a Constraint: Lagrange-Multiplier method	Deadline for Assignment 2
12th	3/25/2013	Review for Second Midterm Exam	
	3/27/2013	Second Midterm Exam	
13th	4/1/2013	Matrices and Matrix Operations	
	4/3/2013	Determinants	
14th	4/8/2013	Matrix Inversion	
	4/10/2013	Solving Linear Equations with Matrix Inversion	
15th	4/15/2013	Solving Linear Equations with Matrix Inversion	
	4/17/2013	Cramer's rule	Deadline for Assignment 3
16th	4/22/2013	Review for Final Exam	

	4/24/2013	Review for Final Exam	
17th	4/29/2013	Final Exam	1-3 PM

Course Requirement

3 Assignments (3 x 10 = 30%)

I will approximately post the assignment in Canvas a week before the deadline for each assignment. All assignments must be handed in at the lecture class when they are due (See the tentative schedule above) . Late assignment is not accepted. If you cannot come to the class, you may email me your assignment before the class time on the deadline day. After receiving your work, I will email you back saying that I already received it. Otherwise, you must email me if you turn in your work, but you do not receive the confirmation email.

2 Midterm Exams (2 x 20 = 40%)

Final Exam (30%)

All exams will be closed books and closed notes. A calculator is allowed. You need to show solutions on each question in the exams, not just giving the numerical answers. All exams will have no multiple choices.

Grading Policy

Final grades are not curved, but will follow an absolute scale according to university's policy.

93% and above	A
90%-92%	A-
86%-89%	B+
82%-85%	B
79%-81%	B-
76%-78%	C+
73%-75%	C
70%-72%	C-

67%-69%	D+
64%-66%	D
60%-63%	D-
Below 60%	F

Disclaimers

“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 Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations.”

(www.hr.utah.edu/oeo/ada/guide/faculty/)

It is your responsibility to maintain your computer and related equipment in order to participate in the online portion of the course. Equipment failures will not be an acceptable excuse for late or absent assignments.