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 Text: Weekly Class notes

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

Course Requirements:

Four Homework Assignments	3 × 11% = 33%
Three Exams	3 × 20% = 60%
In class quizzes	7%

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 five days from the due date

Schedule

Week	Class	Topic	Note
1	12-Jan	Nature of Mathematical Economics	
	15-Jan	Function	
2	19-Jan	Martin Lunther King Jr. Day	
	21-Jan	Constructing a Model; Single Commodity	
3	26-Jan	Constructing a Model; General Market	
	28-Jan		
4	2-Feb	Difference Quotient and Slope	
	4-Feb	Rules of Differentiation	
5	9-Feb	Rules of Differentiation	
	11-Feb	Optimization; First Derivative	Assignment1
6	16-Feb	Presidents' Day	
	18-Feb	Optimization; Second and Higher Derivative	Assignment1 Due
7	25-Feb	Review for Exam 1	
	27-Feb	Exam1	
8	2-Mar	Partial Differentiation and Multivariable Calculus	
	4-Mar	The Uses of Partial Differentiation	
9	9-Mar	Total Derivatives, and Differential	
	11-Mar	Optimization; Second-Order Partial Derivatives	Assignment2
10	16-Mar	Spring Break	
	18-Mar		
11	23-Mar	Optimization of Multivariable Functions	
	25-Mar	Effects of a Constraint; Lagrange-Multiplier	Assignment2 Due
12	30-Mar	Review for Exam2	
	1-Apr	Exam2	
13	6-Apr		
	8-Apr	Matrices, Matrix Operations, and Determinants	
14	13-Apr	Matrix Inversion	
	17-Apr	Solving Linear Equations with Matrix Inversion	Assignment3
15	20-Apr	Cramer's Rule	
	22-Apr		Assignment3 Due
16	27-Apr	Review for Exam 3	
	29-Apr	Exam 3	

University policies:

• Academic (Dis)Honesty. Academic dishonesty of any kind is a serious offense, which undermines both the reputation and quality of the degrees issued by the University of Utah. Plagiarism of any kind, intentional and/or unintentional, will result in strict sanctions against the student per university policy. Please meet with me immediately if you are unclear as to what constitutes plagiarism.

• The University Code: Section V. A. Students must adhere to generally accepted standards of academic honesty, including but not limited to, refraining from cheating, plagiarizing, research misconduct, misrepresenting one's work, and/or inappropriately collaborating.

• Section V. B. A student who engages in academic misconduct … may be subject to academic sanctions including but not limited to a grade reduction, failing grade, probation, suspension, or dismissal from the program or the University, or revocation of the student's degree or certificate.

Americans with Disabilities Act (ADA) Statement:

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.