Mathematics for Economics; QI

This class fulfills the university QI

ECON 3620 Fall 2014

Monday, Wednesday 8.05 am – 9:25 am

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:

Four Homework Assignments	$3 \times 11\% = 33\%$
Three Exams	$3 \times 20\% = 60\%$
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 one week from the due date

Schedule

Week	Class	Topic	Note
1	25-Aug	Nature of Mathematical Economics	
	27-Aug	Function	
2	1-Sep	Labor day	
	3-Sep	Constructing a Model; Single Commodity	
3	8-Sep	Constructing a Model; General Market	
	10-Sep	Difference Qoutient and Slope	
4	15-Sep	Rules of Differentiation	
	17-Sep	Rules of Differentiation	Assignment1
5	22-Sep	Optimization; First Derivative	
	24-Sep	Optimization; Second and Higher Derivative	Assignment1 Due
6	29-Sep	Review for Exam1	
	1-Oct	Exam1	
7	6-Oct	Partial Differentiation and Multivariable Calculus	
	8-Oct	The Uses of Partial Differentiation	
8	13-Oct	Fall Break	
	15-Oct	Fall Break	
9	20-Oct	Total Derivatives	
	22-Oct	Differentials	
10	27-Oct	Optimization; Second-Order Partial Derivatives	
	29-Oct	Optimization of Multivariable Functions	Assignment2
11	3-Nov	Effects of a Constraint; Lagrange-Multiplier	
	5-Nov	Effects of a Constraint; Lagrange-Multiplier	Assignment2 Due
12	10-Nov	Review for Exam2	
	12-Nov	Exam2	
13	17-Nov	Matrices and Matrix Operations	
	19-Nov	Determinants	
14	24-Nov	Matrix Inversion	Assignment3
	26-Nov	Thanks Giving Break	
15	1-Dec	Solving Linear Equations with Matrix Inversion	Assignment3 Due
	3-Dec	Cramer's Rule	
16	8-Dec	Review for Exam3	
	11-Dec	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.