

**Mathematics for Economics**  
**ECON 3620-090 (Online) Summer 2015**

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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:** Michael Hoy et al.’s *Mathematics for Economics* , 3<sup>rd</sup> ed.

Edward Dowling’s *Schaum’s Outline of Introduction to Mathematical Economics*, 3<sup>rd</sup> ed.

Both textbooks are available in the university’s bookstore.

## Tentative Schedule

Week	Date	Topics
1st	5/18/2015	Introduction and Prerequisite Reviews
2nd	5/25/2015	Linear Equation and Equilibrium Analysis
3rd	6/1/2015	Matrix Operations and Determinants
4th	6/8/2015	Minor, Cofactor and Matrix Inversion
5th	6/15/2015	Using Matrix to Solve Linear Equation with Multi-Variables
6th	6/22/2015	<b>Midterm Exam</b>
7th	6/29/2015	Limit Theorem and Rules of Differentiation
8th	7/6/2015	Concavity and Convexity
9th	7/13/2015	Partial Differentiation
10th	7/20/2015	Total Derivatives and Total Differentials
11th	7/27/2015	Optimization with Constraints: Lagrangian Multiplier
12th	8/3/2015	<b>Final Exam</b>

## Course Requirement

<i>Discussions</i>	<i>(10%)</i>
<i>Weekly Practice Problems</i>	<i>(5%)</i>
<i>Weekly Homework</i>	<i>(20%)</i>
<i>Learning Plan</i>	<i>(5%)</i>
<i>Reflection</i>	<i>(10%)</i>
<i>Midterm Exams</i>	<i>(20%)</i>
<i>Final Exam</i>	<i>(30%)</i>

All exams will be closed books and closed notes. A simple 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. You must schedule for the date and time with the Online Center.

**Tentative Grading Scale:**

93% and above	A	73%-75%	C
90%-92%	A-	70%-72%	C-
86%-89%	B+	67%-69%	D+
82%-85%	B	64%-66%	D
79%-81%	B-	60%-63%	D-
76%-78%	C+	Below 60%	F

*If overall class score is lower than expected, this grading scale would be replaced by the curving system. Students will be notified.*

**Course Policy:**

Academic dishonesty (cheating, plagiarism, etc) or disruptive behavior in the classroom will not be tolerated and might lead to expulsion, failure of the course and other possible penalties. Any behavior judges by the instructor as disrespectful or not adequate for the class environment could force him to ask the responsible student to leave the classroom immediately.

The instructor reserves the right to make adjustments to this syllabus. Any change will be notified at least one week in advance. But it is your responsibility to stay informed if you do not attend all the classes.

**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 information in this course can be made available in alternative format with prior notification to the Center for Disability Services.**