Mathematics for Economics[1]

ECON 3620-090 (Online) Summer 2017

Instructor: Tanadej 'Pete' Vechsuruck

Office: Economic Department, Building 72

Office Hours: Only by appointment

Email: Message in Canvas

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 Book: Edward Dowling's *Schaum's Outline of Introduction to Mathematical Economics*, 3rd ed.

Optional Book: Michael Hoy et al.'s *Mathematics for Economics*, 3rd ed.

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[1] This is the shortened version of the syllabus. See the full version on Canvas.

Course Requirement:

Discussions (10%)

Weekly Practice Problems (5%)

Weekly Homework (25%)

Learning Plan (5%)

Reflection (10%)

Midterm Exams (20%)

Final Exam (25%)

All exams will be closed books/notes and **MUST be taken at the U Online Center**. 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.

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

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.

Tentative Schedule:

Date	Topic
Week 1	Introduction and Prerequisite Reviews
Week 2	Linear Equation and Equilibrium Analysis
Week 3	Matrix Operations and Determinants
Week 4	Minor, Cofactor and Matrix Inversion
Week 5	Using Matrix to Solve Linear Equation with Multi-Variables
Week 6	**Midterm Review and Midterm Exam**
Week 7	Limit Theorems and Rules of Differentiation
Week 8	Concavity and Convexity
Week 9	Partial Differentiation
Week 10	Optimization with Constraints: Lagrangian Multiplier
Week 11	Optimization with Constraints: Lagrangian Multiplier
Week 12	**Final Review and Final Exam**