

ECON 3620:

Mathematics for Economists

Fall 2016

Chomchak Amonvatana

MW / 08:05AM-09:25AM, BUC 106

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Office hours: W 10.30AM- 11.30 AM or by appointment

### **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.

## Prerequisites

College Algebra, ECON 2010 and ECON 2020

## Textbooks

1. Edward T. Dowling. (2011). *Schaum's Outline of Introduction to Mathematical Economics*. 3rd Edition. Publisher: McGraw Hill. **(Required)**
2. Michael Hoy, John Livernois, Chris McKenna, Ray Rees, Thanasis Stengos (2011). *Mathematics for Economics*. 3rd Edition. Publisher: The MIT Press **(Optional)**

The grading scheme is

In-class assignments	10%
Four Homework assignments	20%
Two Midterms	40%
Final	30%

- For in-class and homework assignments, you are allowed to work in a group (limit to 4 members)

-Turning in homework assignment as hard copy at the beginning of the class is preferable or you can submit your work on Canvas.

-Late assignments will be accepted within 3 days after the due date with 30% penalty. Please note that no assignments will be accepted after 3 days from the due date.

## **Grades**

Letter grades will be earned using roughly the following scale:

93-100 = A      90-92.99 = A-

87-89.99= B+    83-86.99= B      80-82.99= B-

77-79.99= C+    73-76.99= C      70-72.99= C-

67-69.99= D+    63-66.99= D      60-62.99= D-

Below 60= F

## **Topics**

1. Review prerequisite skills
2. Linear equation
3. Matrix Algebra
4. Rules of Differentiation
5. Total and Partial Differentials
6. Total Derivatives
7. Optimizing multivariable functions
8. Constrained optimization and Lagrange multipliers
9. Comparative Statics