ECON 3620:

Mathematics for Economists

Spring 2017

Chomchak Amonvatana

H / 06:00 PM-09:00 PM, BEH S 109

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Office: Building 72 (1st floor), table no. 31

Office hours: H 4.00 PM- 5.00 PM 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.

Objectives

1. Students will be able to recognize components of functions.

2. Students will be able to integrate Math skills in solving Economic problems.

3. Students will be able to build confidence in using Math skills to help complete advanced economic classes.

4. Students will be able to recognize how Math and previously learned theories integrate in academic journals or contemporary researches.

5. Students will be able to think about and develop strategies for learning Math, e.g., to solve problems, and develop good study habits and skills.

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)

- You can either submit homework assignments as a hard copy or submit scanned homework assignments on Canvas.

- Late assignments will not be accepted.

Tentative schedule

Week	Date	Themes	Announcements
1	1/12/2017	Chap 1 and Chap 2	
2	1/19/2017	Chap 3	
3	1/26/2017	Chap 10 and Chap 11	HW1 is due on Thursday, January 26, 2017
4	2/2/2017	Review study guide	HW2 is due on Thursday, February 2, 2017
5	2/9/2017	Review HW1 and HW2	
6	**2/16/2017**	**Exam 1**	
7	2/23/2017	Chap 4	
8	3/2/2017	Chap 5	
9	3/9/2017	Chap 6	
10	3/16/2017	**Spring break**	
11	3/23/2017	Review HW3 and study guide	HW3 is due on Wednesday, March 22, 2017
12	**3/30/2017**	**Exam 2**	
13	4/6/2017	Chap 12	
14	4/13/2017	Chap 13	
15	4/20/2017	Review HW4 and study guide	HW4 is due on Wednesday, April 19, 2017
16	**4/27/2017**	**Exam 3**	

Note:

- For more details in each chapter, please see *Schaum's Outline of Introduction to Mathematical Economics.*

- All exams will be held in the regularly scheduled classroom.

Important Dates

Last day to add without a permission code: Friday, January 13

Last day to add or drop: Friday, January 20

Last day to withdraw from classes: Friday, March 3

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= E

Topics

1. Review Prerequisite Skills

2. Linear Equation

3. Matrix Algebra

4. The Derivatives and Rules of Differentiation

5. Calculus of Multivariable Functions

6. Optimization of Multivariable Functions in Economics

7. Constrained Optimization and Lagrange Multipliers

8. Special Determinants and Matrices (The Hessian)

9. Comparative Statics

Course Policies

Attendance: "The University expects regular attendance at all class meetings. Instructors must communicate any particular attendance requirements of the course to students in writing on or before the first class meeting. Students are responsible for acquainting themselves with and satisfying the entire range of academic objectives and requirements as defined by the instructor." PPM, Policy 6-100III-O)

ADA Statement: The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you 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, including making all written information available in alternative format.

Canvas: The course will employ Canvas software to share information about newsworthy events and articles, provide many of the course readings, and facilitate discussions outside of class. You have "constructive notice" of any information posted on the course Canvas site during the semester. That means I will assume you have received information posted to the site, and that you take responsibility for the consequences if you choose to not check the site regularly.

Tech Support: Though I hope you do not have any technical difficulties, they sometimes happen in online courses. Send me a Canvas message or email with any issues I can solve (dead links, for example), but for larger tech issues, contact the UIT Help Desk.

Academic Misconduct: Academic misconduct includes cheating, plagiarizing, research misconduct, misrepresenting one's work, and inappropriately collaborating. Definitions of these and other terms are in the Student Code at http://www.regulations.utah.edu/academics/6-400.html (Links to an external site.). The Student Code (at section 6-400(V)) also specifies the required procedures that must be followed when disciplinary actions are taken in response to instances of academic misconduct. A second occurrence of academic misconduct will result in

the student's dismissal from their academic program. I will assume that each student has read both the statement from the Handbook and the AICP Code.

Addressing Sexual Misconduct: Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, color, religion, age, status as a person with a disability, veteran¹s status or genetic information. If you or someone you know has been harassed or assaulted on the basis of your sex, including sexual orientation or gender identity/expression, you are encouraged to report it to the University's Title IX Coordinator; Director, Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or to the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to police, contact the Department of Public Safety, 801-585-2677(COPS). Additional information regarding reporting and victim supportive resources are available at the offices listed above.