

***Introduction to Mathematical Economics***  
**ECONOMICS 345, 3 CREDITS**  
**Monday, Wednesday, and Friday 12:00 – 12:50 PM**  
**Social Sciences Building Room 389**

William Foster  
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Office Hours: After Class  
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**"All models are wrong, but some models are useful"**

- Statistician George E. P. Box

**"As far as the laws of mathematics refer to reality, they are not certain;  
and as far as they are certain, they do not refer to reality."**

- Einstein, Albert (1923) from *Sidelights on Relativity (Geometry and Experience)*

## INTRODUCTION

This class focuses on the mathematical analysis of microeconomic theory, specifically the mathematical treatment of price theory and the behavior of consumers and firms. Students in this course should have taken and understood both *Finite Mathematics for Business* (MATH 160) and *Intermediate Microeconomics* (ECON 218 or 220).

## REQUIRED TEXTS

*Mathematics for Economics*

Michael Hoy et al.

Publisher: The MIT Press; Third Edition (March 4, 2011)

ISBN-13: 978-0262015073

*Schaum's Outlines – Introduction to Mathematical Economics*

Edward Dowling

Publisher: McGraw-Hill; Third Edition (August 30, 2000)

ISBN-13: 978-0071358965

Your final grade will be determined by:

	EACH	TOTAL
HOMEWORK	?	25 %
ATTENDANCE/PARTICIPATION	15 %	15 %
MIDTERM EXAMS	20 %	40 %
FINAL EXAM	20 %	20 %

**BLACKBOARD:** Blackboard is an instrumental part of this course. You can access UIC's Blackboard system at: <https://blackboard.uic.edu/webapps/login/>

**ANNOUNCEMENTS:** Check here for periodic announcements about the course.

**COURSE DOCUMENTS:** This will include several different types of documents relating to the course.

**SYLLABUS:** This will be permanently stored here.

**HOMEWORK ASSIGNMENTS:** The instructions for assignments due during the semester will be kept here. Homework WILL NOT be accepted by email except in dire circumstances. If you cannot make it to class, place your work in my mailbox before class. Assignments and due dates are not listed in this syllabus as they will remain flexible due to the nature of the course. All information will be available online.

**MY GRADES:** You will have access to your current grades through this system.

**DISCUSSION BOARDS:** I have created one general discussion board. This is for students to talk to other students about the course. This is not for communication with me. I will not look at this board.

**PLAGIARISM:** Plagiarism is “the unauthorized use or close imitation of the language and thoughts of another author and the representation of them as one's own original work”<sup>1</sup>. If you are suspected of plagiarizing, you will be brought up on charges by the university. If you are found guilty you may be dismissed from the university.

1. **The Random House Dictionary.** (2010). In *Encyclopædia Britannica*. Retrieved August 19, 2010, from Encyclopædia Britannica Online: <http://www.britannica.com/EBchecked/topic/491056/The-Random-House-Dictionary>

**STUDENTS WITH DISABILITIES:** Students with Faculty Contact Sheets for this class need to present them to the instructor as soon as possible. Other students requiring reasonable accommodations, as covered under the Americans with Disabilities Act, should contact the Disability Resource Center (DRC) to open up a DRC file and discuss needed accommodations. Questions and requests for reasonable accommodations should be directed to DRC, 1190 SSB, phone (312) 413-2183 or email [drc@uic.edu](mailto:drc@uic.edu).

## Course Outline

Week	Day	Date		Title	
1	M	August 22, 2011	-----	Chapter 1 and 2 - <i>Introduction and Review of Fundamentals</i>	-----
	W	August 24, 2011	-----		-----
	F	August 26, 2011	-----		-----
2	M	August 29, 2011	-----	Chapter 3 - <i>Sequences Series and Limits</i>	-----
	W	August 31, 2011	-----		-----
	F	September 2, 2011	-----		-----
3	M	September 5, 2011	-----	***** <b>NO CLASS - LABOR DAY</b> *****	-----
	W	September 7, 2011	-----	Chapter 4 - <i>Continuity of Functions</i>	-----
	F	September 9, 2011	-----		-----
4	M	September 12, 2011	-----	Chapter 5 - <i>The Derivative and Differential of One Variable</i>	-----
	W	September 14, 2011	-----		-----
	F	September 16, 2011	-----		-----
5	M	September 19, 2011	-----	Chapter 6 - <i>Optimization of Functions of One Variable</i>	-----
	W	September 21, 2011	-----		-----
	F	September 23, 2011	-----		-----
6	M	September 26, 2011	-----	REVIEW SESSION	-----
	W	September 28, 2011	-----	***** <b>MIDTERM I</b> *****	-----
	F	September 30, 2011	-----	-----	-----
7	M	October 3, 2011	-----	Chapter 7 - <i>Systems of Linear Equations</i>	-----
	W	October 5, 2011	-----		-----
	F	October 7, 2011	-----		-----
8	M	October 10, 2011	-----	Chapter 8 - <i>Matrices</i>	-----
	W	October 12, 2011	-----		-----
	F	October 14, 2011	-----		-----
9	M	October 17, 2011	-----	Chapter 9 - <i>Determinants and the Inverse Matrix</i>	-----
	W	October 19, 2011	-----		-----
	F	October 21, 2011	-----		-----
10	M	October 24, 2011	-----	Chapter 10 - <i>Some Advanced Topics in Linear Algebra</i>	-----
	W	October 26, 2011	-----		REVIEW SESSION
	F	<b>October 28, 2011</b>	-----		***** <b>MIDTERM II</b> *****
11	M	October 31, 2011	-----	Chapter 11 - <i>Calculus for Functions of n-Variables</i>	-----
	W	November 2, 2011	-----		-----
	F	November 4, 2011	-----		-----
12	M	November 7, 2011	-----	Chapter 12 - <i>Optimization of Functions of n-Variables</i>	-----
	W	November 9, 2011	-----		-----
	F	November 11, 2011	-----		-----
13	M	November 14, 2011	-----	Chapter 13 - <i>Constrained Optimization</i>	-----
	W	November 16, 2011	-----		-----
	F	November 18, 2011	-----		-----
14	M	November 21, 2011	-----	Chapter 14 - <i>Comparative Statics</i>	-----
	W	November 23, 2011	-----		-----
	F	November 25, 2011	-----		***** <b>NO CLASS - THANKSGIVING</b> *****
15	M	November 28, 2011	-----	***** <b>FINAL REVIEW</b> *****	-----
	W	November 30, 2011	-----		-----
	F	December 2, 2011	-----		-----
FINAL	T	<b>December 6, 2011</b>	-----	***** <b>FINAL EXAM @ 8:00 AM</b> *****	-----

**EXAM I - SEPTEMBER 30<sup>TH</sup> • EXAM II - OCTOBER 28<sup>TH</sup> • FINAL - DECEMBER 6<sup>TH</sup>**

**ALL HOMEWORK IS DUE BY THE START OF CLASS ON THE DUE DATE**

**OCTOBER 28<sup>th</sup> IS THE LAST DAY FOR UNDERGRADUATE STUDENTS TO USE OPTIONAL LATE DROP IN COLLEGE OFFICE AND RECEIVE GRADE OF W ON ACADEMIC RECORD.**