

**ECO-4401 & ECO-5403**  
**Introduction to Mathematical Economics**  
**Static Optimization**  
**Fall 2009**

**Professor:** Tim Salmon  
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**Meeting Times:** T TH 9:30-10:45 AM  
**Location:** BEL 204  
**Office Hours:** T TH 11AM - Noon

**Course Description:**

Mathematics is the foundation of modern economic analysis. This class is intended to bridge the gap between the informal and graphical treatment of economics seen in most undergraduate economics courses and the rigorous and formal treatment that would be found in a graduate program. This class is aimed at two types of students. The first includes those students intending to or thinking about going on to pursue a graduate economics degree. This course is designed to prepare these students for what they will see there. The second type of student is one who is interested in economic analysis, although maybe not to the point of attending grad school, but is not content with the less rigorous approach in most undergraduate courses. The approach of the course will be to teach much of the same material that would be found in a standard intermediate microeconomics course but to present the material in a significantly more mathematically rigorous manner.

**Prerequisites:**

ECO 2013 and ECO 2023 as well as a course in college calculus are required. ECO 4101 is recommended. There should be no mistake made about the fact that this class will be taught using a fair amount of calculus. Most of the mathematics needed for the course will be taught in a self-contained manner, meaning that any mathematics used in the course will be taught in the course, but the more familiar you are with basic calculus, the more smoothly this course will go.

**Course Texts:**

Required texts

1. Mathis, Steven A. and Janet Koscianski, *Microeconomic Theory: An Integrated Approach*, ISBN 0-13-011418-9. (You will find a supplemental chapter and selected solutions to practice problems at <http://www.prenhall.com/mathis/> )

**Grading:**

Grading for this course will consist of two midterm exams (25% each), one final exam (30%) and problem sets (20%). Problem sets will likely be given out every other week and are intended to be used to practice the concepts covered in class. It should be expected that numerical grades on exams will be low, but the letter grades will be adjusted accordingly. Also, note that the grading standards for those registered under the graduate section are higher.

## **Course Outline:**

1. Optimization
  - a. Math and Calculus Review – Chapter 1
  - b. Unconstrained Optimization – Chapter 2
  - c. Constrained Optimization – Chapter 2

### **Midterm I**

2. Consumer Theory
  - a. Introduction to Modeling
  - b. Consumer Preferences – Chapter 3-4
  - c. Individual and Market Demand – Chapter 5-6
  - d. Elasticity – Chapter 7

### **Midterm II**

3. General Equilibrium in Exchange Economy– Chapter 23
4. Topics (we will cover as many of these as class interest and time allow)
  - a. Monopoly and Oligopoly – Chapters 15 –19
  - b. Choice Under Uncertainty – Chapter 3AW  
<http://www.prenhall.com/mathis/>
  - c. Public Goods

**Final Exam**, Monday December 7<sup>th</sup> 7:30-9:30 AM

HONOR CODE: Academic dishonesty as it relates to tests in this course will not be tolerated in any form. The Academic Honor system of the Florida State University is based on the premise that each student has the responsibility to:

1. Uphold the highest standards of academic integrity in the student's own work;
2. Refuse to tolerate violations of academic integrity;
3. Foster a high sense of integrity and social responsibility.

Put simply, cheating will not be tolerated. If an instance of academic dishonesty takes place, all students involved will receive a zero for that exam and the grade may not be dropped.

AMERICAN DISABILITIES ACT STATEMENT: Students with disabilities needing academic accommodations should:

1. Register with and provide documentation to the Student Disability Resource Center (SDRC);
2. Bring a letter to the instructor from SDRC indicating that you need academic accommodations. This should be done within the first week of class.