

MONTANA STATE UNIVERSITY
Agricultural and Applied Economics
AGEC 500: Summer Math Review
August 16-27, 2010

9:00-noon M-F
Linfield 206
Instructor: Tim Fitzgerald
Office: Linfield 208B
Office Hours: by appointment
Email: timothy.fitzgerald@montana.edu

This course is intended as a review of mathematical techniques that will be used throughout the graduate program. The purpose is to allow all students to revisit their mathematical proficiency and develop similar expectations about what will be required of them. Parts of this course will present material unfamiliar to some students. During this mini-course, assigned problems are highly recommended but not required; there will not be a graded examination during the course of the review. An open-book problem set will be distributed after the math review. Successful completion of this exercise will be the basis of the graduate credit for this class. Results of this exercise aside, students are considered responsible for the material covered and liable to examination at a later date. Along these lines, forming study groups will help you during this course and throughout the fall semester. However, the assigned exercise must be completed individually. It may be useful for students to work additional problems to increase familiarity and proficiency with the tools.

A bound set of course notes will be provided to each student. These notes will hopefully prove useful during the lectures as well as providing a concise reference during later courses. In addition to this set of notes, much of the material that will be covered is addressed in Fundamental Methods of Mathematical Economics, by Alpha Chiang. Students should acquire this book as soon as possible if you don't have it already. The fourth edition of this text will be the main book for the fall semester AGECE 467 course as well. Numerous other mathematical texts may be extremely useful.

The following is a brief outline of the material that will be covered over the next two weeks.

- I) Preliminary Concepts and Notation (1 day)
- II) Concepts of Proof (1 day)
- III) The Calculus (3 days)
- IV) A Crash Course in Probability Theory (1 day)
- V) Basics of Linear Algebra (3 days)
- VI) Unconstrained Optimization (1 day)