MONTANA STATE UNIVERSITY
AGEC 467
Quantitative Methods in Economics
Fall 2010

M 10:00-10:50 am
Linfield 233
WF 10:00-10:50 am
Johnstone Center

Instructor: Tim Fitzgerald
Office: Linfield 208B
Office Hours: MW 9am – 10am, or by appointment
Email: timothy.fitzgerald@montana.edu
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REQUIRED TEXT:
Chiang, Alpha C. and Kevin Wainwright. Fundamental Methods for Mathematical Economics. 4th ed. McGraw-Hill.

Previous editions are available that may prove to be adequate substitutes for portions of the class, but do not cover other sections. The 4th edition does not address linear programming, as the 3rd and previous editions did—the instructor will distribute notes for that section. However, previous editions do not include a textbook treatment of optimal control.

ADDITIONAL TEXTS:
There are many excellent texts on mathematics for economists. Students may find it helpful to periodically consult another text to gain greater insight into topics. A few texts that have proven useful to students in the past include:

Schaum's Introduction to Mathematical Economics. McGraw-Hill.
Little discussion but many problems with solutions for practice.
Simon & Blume, Mathematics for Economics. Norton.
A more advanced but comprehensive treatment used by many Ph.D. programs.
Hoy et al. Mathematics for Economists. MIT Press.
A simpler text that covers a wide range of topics—lots of examples.
Silberberg. The Structure of Economics: A Mathematical Approach. McGraw-Hill.
Primary text for ECON 401; provides alternative explanation of some topics.

Students are encouraged to find a text that they find useful. Textbooks used for previous classes in calculus, differential equations, and linear algebra may also prove useful. Additionally, there are many good websites that provide some explanation of some concepts. There are many websites with incomplete or incorrect explanations as well, so students should be warned. One that may prove useful is www.mathworld.wolfram.com; so might www.mathpages.com and www.planetmath.org.

COURSE DESCRIPTION & REQUIREMENTS:
This course is intended to serve as an introduction to the most common quantitative tools used by economists today. Students are expected to enter the course with a grasp of the concepts covered in ENCS 594-02 or its equivalent. The course will consist of three weekly lectures in addition to regular assignments and three examinations—two mid-term and one final. Performance on the assignments will account for one-fifth of the final grade, each of the midterm exams one-quarter, and the final exam the balance. The final exam is currently scheduled for 6-7:50pm on December 16th, but is subject to rescheduling later in the semester (if moved, it will be to a time at which all students are available). Although the material covered in the course is not strictly cumulative, a thorough understanding of the material covered earlier in the semester will be critical to success in later sections of the course.

STUDENT CONDUCT:
All activity in this course is governed by the Student Conduct Code, with particular attention to the Academic Conduct Code; students are responsible for familiarizing themselves with these codes. Any questions should be raised with the instructor.

GRADING:
The following guidelines will be used in assessing students' performance in this course.
A: Demonstrated thorough understanding and ability to apply beyond scope of course
B: Demonstrated proficiency over course material
C: Demonstrated familiarity with course material
D: Failed to grasp core course material
F: Failing
Students are welcome to discuss their progress with the course material with the instructor at any time during the semester.

COURSE OUTLINE (subject to adjustment)
I) Constrained Optimization
    1) Method of Lagrange
    2) Introduction to Kuhn-Tucker Theory

II) Linear Programming

III) Differential and Difference Equations

IV) Optimal Control (Dynamic Optimization)

V) Introduction to Dynamic Programming