

## Economics 4370/7370: Quantitative Economics Fall 2009

**Instructor:** Oksana Loginova, 333 Professional Bldg, (573)882-4229, loginovao@missouri.edu

**Grader:** Chenhang Zeng, czvd7@mizzou.edu

**Office Hours:** Tuesday/Thursday 11am-12pm and 2-3pm

**Class Time and Location:** Tuesday/Thursday 12:30-1:45pm, 132 Middlebush

**Course Description:** The aim of this course is to provide an introduction to the mathematical language of economic theory. Topics include matrix algebra, multivariate calculus, and optimization.

**Textbooks:** Alpha C. Chiang & Kevin Wainwright, *Fundamental Methods of Mathematical Economics*, 4th ed. (required); Knut Sydsaeter & Peter J. Hammond, *Mathematics for Economic Analysis* (recommended).

**Course Requirements and Grading:** There will be a number of homework assignments, a midterm exam (October 8) and a final exam (Wednesday, December 16, 8-10am). Both exams are of the problem-solving type. Your grades will depend on your performance on the homework assignments (15%), the midterm exam (35%) and the final exam (50%).

**Make-Up Exams:** Make-up exams will generally not be given. A request for alternative arrangements must be in writing and must be accompanied by appropriate documentation for not taking the scheduled exam.

**Academic Honesty:** The MU policy on academic honesty will be strictly implemented. Any academic dishonest action will be reported to the university.

**Disabilities:** If you have special needs as addressed by the Americans with Disabilities Act and need assistance, please notify the Office of Disability Services, A048 Brady Commons, (573)882-4696. Reasonable efforts will be made to accommodate your special needs.

### Major Topics:

1. Static (or Equilibrium) Analysis (Ch. 3–5 of Chiang & Wainwright)
  - matrix algebra
  - application to market and national-income models
2. Comparative-Static Analysis (Ch. 7–8 of Chiang & Wainwright)
  - rules of differentiation
  - comparative-static analysis of general-function models
  - application to market and national-income models
3. Optimization Problems (Ch. 9–13 of Chiang & Wainwright)
  - exponential and logarithmic functions
  - optimization with one and more choice variables
  - optimization with equality and inequality constraints
  - utility maximization, least-cost combination of inputs and profit maximization