

QUANTITATIVE FOOD AND AGRICULTURAL POLICY ANALYSIS (AGEC 56203)

FALL 2026

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University of Arkansas

Meeting Times and location: Tuesday and Thursday 8:00 – 9:15 AM. Room HOEC 217.

Office hours: 2:00-4:00 PM Tuesday and Thursday or by appointment

Course description

Introduction to applied quantitative analysis of agricultural policies. Students will learn first-hand how to organize and conduct agricultural policy research analysis using mathematical programming. Students will learn the basics of coding in GAMS (*General Algebraic Modeling System*).

This course syllabus/outline is subject to change throughout the semester. Materials for this course can be found on Blackboard. You can access Blackboard at <http://learn.uark.edu>.

Computer and internet access: this is a hands-on course in which students will learn policy modeling by building models and analyzing the results. Hence, having access to a computer is essential.

Recommended Text: there are numerous books that cover the topics developed in this course. Some of the recommended books include:

Takayama, T., and G.G. Judge. 1971. Spatial and Temporal Price and Allocation models. North-Holland Publishing Company. Amsterdam, London.

Francois, J.F., and K.A. Reinert. 1997. Applied Methods for Trade policy Analysis: a Handbook. Cambridge University Press. Cambridge, U.K.

VII. Student evaluation

Table 1. Estimation of final grade for the class

Class Component	Contribution to Final Grade
Homework	60%
Final research project	40%

Table 2. Grading system

Points	Final Grade
90-100	A
80-89	B
70-79	C
60-70	D
<60	F

VIII. Class Attendance, Office Hours, Disabilities, and Course revisions

Attendance is expected, as class interaction is one of the best ways to learn and challenge our thoughts. Please come ready to participate. If you expect to miss a class please inform the instructor beforehand.

Disabilities. If you need to request accommodations for this class due to a disability, you must first register with the Center for Students with Disabilities (CSD) and hand-deliver an official Accommodation Letter from the CSD to me during my office hours or after class.

Inclement Weather Policy. This course will follow University policy regarding class cancelation if the University is closed. Class periods will be rescheduled to avoid you missing course material or an exam. If an exam is being given, a student who is unable to get to class because of inclement weather will be given the opportunity to make up the exam or take the score received for the final exam as a proxy for the missed exam.

Academic Honesty/Integrity. As a core part of its mission, the University of Arkansas provides students with the opportunity to further their educational goals through programs of study and research in an environment that promotes freedom of inquiry and academic responsibility. Accomplishing this mission is only possible when intellectual honesty and individual integrity prevail. Each University of Arkansas student is required to be familiar with and abide by the University's 'Academic Integrity Policy' which may be found at <http://provost.uark.edu/>. Students with questions about how these policies apply to a particular course or assignment should immediately contact their instructor.

Use of Generative Artificial Intelligence (AI). The use of generative artificial intelligence tools in any capacity while completing academic work that is submitted for credit, independently or collaboratively, **will be considered academic dishonesty in this course** and reported to the Office of Academic Initiatives and Integrity.

Syllabus Updates. The instructor reserves the right to revise this syllabus/outline during the course of the semester with adequate notice to the students.

Table 3. Course outline.

Section 1
Introduction to food and agricultural policies

Introduction to mathematical programming Linear programming Integer programming Quadratic programming Nonlinear programming Introduction to GAMS
Section 2
Linear programming models Linear distribution models
Section 3
Spatial price equilibrium models
Section 4
Overview of other policy analysis methods Input-output models General equilibrium models Household models
Section 5
Class presentations – final project