

SOUTHEAST MISSOURI STATE UNIVERSITY
COURSE SYLLABUS

May 1998

Department of Economics

Course EC351

Title of Course: Applied Economic Models

I. Catalog Description and Credit Hours of Course

Introduction to the process of data collection, model construction, hypothesis testing and prediction used by economists and social scientists. (3)

II. Prerequisites

MA134 College Algebra *and*
Any college-level statistics course *and*
EC101 Economic Problems and Policies *or*
EC215 Principles of Microeconomics *or*
EC225 Principles of Macroeconomics

III. Purposes or Objectives of the Course

After completing the course, the student will be able to:

1. Explain the sources and process of data collection and analysis.
2. Construct and test a model.
3. Distinguish between "good" and "bad" models.

IV. Expectations of Students

The average student should plan on spending two hours outside of class for each hour spent in class. Each student is expected to participate in class discussion and complete all assignments in a timely manner. Each student will complete a project that involves data collection, model construction, estimation, and explanation of results.

V. Text

Maddala, G.S., *Introduction to Econometrics*, Second Edition New York: MacMillan Press, 1992.

VI. Course Outline	Hours
1. Introduction and Purpose of Course	1
a. The Research Project	
b. Time Series and Cross-Section Data Sets	
c. Sources of Data	
2. A Brief Review of Statistics	5
a. Measures of central tendency and dispersion	
b. Distribution Functions and their statistics	
i. t and z statistics	
ii. F-statistic	
iii. Chi-square statistic	
c. Hypothesis testing	
d. Causality vs. Correlation	
3. Regression Analysis	21
a. Ordinary least squares-Two Variables	
b. The multiple regression Model	
c. Prediction and Confidence Intervals	
d. Violations of the assumptions	
i. Heteroscedasticity	
ii. Autocorrelation	
iii. Simultaneous Equation Bias	
4. Data Transformations	3
a. Logarithmic Transformation	
b. First Differencing	
c. Dummy Variables	
d. Lagged Variables	
5. Applied Models	15
(The following are examples; actual models are to be chosen by instructor)	
a. Microeconomic Models	
i. The Production Function	
ii. The Cost Function	
iii. The Profit Function	
iv. Systems of Demand Functions	
(a) Price Elasticity	
(b) Income Elasticity	
(c) Cross-price Elasticity	
b. Macroeconomic Models	
i. Growth Models	

- ii. Consumption Function
- iii. Investment Function
- iv. Demand for Money
- c. Economic Models of Social Issues
 - i. crime
 - ii. immigration
 - iii. education
 - iv. retirement
 - v. discrimination

VII. Basis of Student Evaluation

Tests: 40%

Project: 40%

Homework 20%