

**COURSE SYLLABUS
SOUTHEAST MISSOURI STATE UNIVERSITY**

Department: Economics and Finance
Course Title: Applied Economic Models

Course No EC351
Spring 2010

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. *BSBA Goal: Effective Use of Technology. Use the Internet, spreadsheet, database, word processing, statistical, and presentation software effectively.*
2. Construct and test a model. *BSBA Goal: Effective Use of Technology. Use the Internet, spreadsheet, database, word processing, statistical, and presentation software effectively.*
3. Distinguish between "good" and "bad" models. *. BSBA Goal: Application of critical thinking skills to business problems and ethical dilemmas. Use critical thinking to reach decisions by, identifying the problem/issue(s), presenting plausible alternatives, evaluating the alternatives and resolving the problem/dilemma with justification based on ethical principles, discipline-specific understanding, and professional judgment.*
4. Identify the assumptions implicit in an economic model. *. BSBA Goal: Application of critical thinking skills to business problems and ethical dilemmas. Use critical thinking to reach decisions by, identifying the problem/issue(s), presenting plausible alternatives, evaluating the alternatives and resolving the problem/dilemma with justification based on ethical principles, discipline-specific understanding, and professional judgment.*

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(s) or Other Required Materials or Equipment

VI. Course Outline	Class Periods
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	
i. mean, median, mode	
ii. Variance, standard deviation	
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	
e. Bayes Theorem	
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	
Price Elasticity	
Income Elasticity	
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. Energy and the environment	
ii. immigration	
iii. education	
iv. retirement	
v. discrimination	
vi. voting	
vii. crime	

VII. Basis of Student Evaluation

Tests:	40%
Project:	40%
Homework	20%