

COURSE SYLLABUS
API-202B,C,D
Empirical Methods II (B, C and D Sections)
Spring 2001

FACULTY INFORMATION

<u>Section</u>	<u>Professor</u>	<u>Office</u>	<u>Assistant</u>
B	James Stock	L304	Jean Reed, L105B
C	Suzanne Cooper	L311	Barbara Slater, L316
D	Susan Dynarski	L116	Helen Hawkins, L349a

Class Time: Tu., Th. 10-11:30

Review Session: To be announced

COURSE DESCRIPTION

The purpose of this course is to equip students with the tools necessary to tackle issues that involve the empirical analysis of public policy problems of the sort they might encounter in a professional environment. Specifically, the course introduces students to the use of multiple regression analysis for analyzing data in the social sciences. The emphasis is on empirical applications.

The course is designed with twin objectives in mind. The first is to provide students with the ability to analyze critically empirical analysis done by others at a level sufficient to make intelligent decisions about how to use that analysis in the design of public policy. The second is to provide students with the skills necessary to perform empirical policy analysis on their own or to participate on a team involved in such an empirical analysis. An important segment of the course focuses on program evaluation. This includes both the design and analysis of experiments that aim at measuring policy effectiveness and the use of non-experimental data to evaluate policy effectiveness.

PREREQUISITE

A knowledge of statistics at the level of API-201 is assumed.

READINGS

The course material is self contained and there is no required textbook for the course. A draft textbook (Stock and Watson) covering most of the material in the course will be made available at CMO for a small charge to any interested student. However, some might find it useful to have a published textbook as an additional reference. Two such books are:

D.N. Gujarati, *Basic Econometrics* (third edition), McGraw-Hill.

J.M. Wooldridge, *Introductory Econometrics*, South-Western College Publishing.

Supplemental readings will be available from the CMO. All textbooks and supplementary readings will be on reserve at the KSG library.

ASSIGNMENTS

Homework assignments must be handed in before class on the day they are due. Assignments will be discussed in class on their due date; consequently **late assignments will be marked down by 50%**.

Students are encouraged to work in small groups; **the maximum group size is 3** for all assignments. For all assignments but the last, each student must write up his or her answers separately. The answers for the final exercise will be a group product (one copy handed in per group). Please append your "log" files to your assignments when appropriate.

The data for the assignments will be available in the computer lab in STATA format. STATA (a statistical software package) is available in the PC Lab. You may wish to purchase your own copy of STATA, which is available at the CMDO.

There will be a midterm exam and a final exam. Both the midterm and the final will be open book / open notes.

GRADING

The class grade is a weighted average of homework, the midterm, and a final exam.

Homework Assignments (excluding final exercise): 20%

Midterm Exam: 25%

Final exercise: 20%

Final Exam: 35%

SCHEDULE

Thurs., Feb. 1

Introduction and Review of Statistics
Stock and Watson (SW), Ch. 2

Tues., Feb. 6 Bivariate Regression I
SW, Ch. 4
Gujarati, Chs. 2-4
Wooldridge, Ch. 2

Thurs., Feb. 8 Bivariate Regression II
SW, Ch. 4
Gujarati, Ch. 5
Wooldridge, Ch. 2

Tues., Feb. 13 Multiple Regression I
SW, Ch. 5
Gujarati, Chs. 6, 7, 10 & 11
Wooldridge, Chs. 3, 4, 6, & 8

ASSIGNMENT 1 DUE

Thurs., Feb. 15 Multiple Regression II
SW, Ch. 5
Gujarati, Chs. 6, 7, 10 & 11
Wooldridge, Chs. 3, 4, 6 & 8

Tues., Feb. 20 Tests of Joint Hypotheses
SW, Ch. 6
Gujarati, Ch. 8
Wooldridge, Ch. 4

ASSIGNMENT 2 DUE

Thurs., Feb. 22 Nonlinear Regression Models I
(functional form)
SW, Ch. 7
Gujarati, Chs. 6, 7, 15
Wooldridge, Ch. 6

Tues., Feb. 27 Nonlinear Regression Models II
(binary regressors and interactions; nonparametric regression)
SW, Ch. 7
Gujarati, Ch. 15

Wooldridge, Ch. 6
ASSIGNMENT 3 DUE

Thurs., Mar. 1 Nonlinear Regression Models III and Panel Data
SW, Ch. 7
Gujarati, Ch. 15
Wooldridge, Chs. 6 & 13

Tues., Mar. 6 Binary dependent variables I
Gujarati, Ch. 16
Wooldridge, Chs. 7 & 17

ASSIGNMENT 4 DUE

Thurs., Mar. 8 Binary dependent variables II
Gujarati, Ch. 16
Wooldridge, Chs. 7 & 17

Tues., Mar. 13 Midterm Review
ASSIGNMENT 5 DUE

Thurs., Mar. 15 **MIDTERM EXAM**

Tues., Mar. 20 Internal and External Validity and Instrumental Variables I
SW Ch. 8
Gujarati, Ch. 18 & 20
Wooldridge, Chs. 15 & 16

Thurs., Mar. 22 Instrumental Variables II
Gujarati, Ch. 18 & 20
Wooldridge, Chs. 15 & 16

Tues., Mar. 27 **SPRING BREAK**

Thurs., Mar. 29 **SPRING BREAK**

Tues., Apr. 3 Instrumental Variables III
Angrist and Krueger (1991), "Does Compulsory School Attendance
Affect Schooling and Earnings?" *Quarterly Journal of Economics*.

Thurs., Apr. 5	<u>Program Evaluation I</u> Randomized controlled experiments Krueger, Alan (1999), "Experimental Estimates of Educational Production Functions", <i>Quarterly Journal of Economics</i> .
Tues., Apr. 10	<u>Program Evaluation II</u> Problems with controlled experiments Bloom, Howard S. et. al., <i>The National JTPA Study Overview: Impacts Benefits and Costs of Title IIA</i> , January 1994. ASSIGNMENT 6 DUE
Thurs., Apr. 12	<u>Program Evaluation III</u> Natural Experiments Card, David and Alan B. Krueger, "Employer Responses to the Minimum Wage: Evidence from the Fast-Food Industry," in <i>Myth and Measurement</i> , Princeton University Press, 1995.
Tues., Apr. 17	<u>No Class: Group Meetings for Projects</u>
Thurs., Apr. 19	<u>Discussion of Final Exercise</u>
Monday Apr. 23 - Friday May 4	Spring Exercise
May (date TBA)	FINAL EXAM Exam date and time are subject to change by the registrar.