

New School University
Department of Economics

Professor Michael Binder
Spring 2006

Syllabus – Version January 29, 2006

GECO 6181: Introduction to Econometrics

Class Time and Location:

Lectures (Michael Binder): Friday, 2:00 pm – 3:50 pm, Room: F 204.
Discussion Sections (Stephen Kinsella): Monday, 8:00 pm – 9:50 pm, Room: F 313.

Classes will start on January 27, 2006.

Course Description:

This course will provide a thorough yet accessible presentation of some of the fundamental methods that econometrics currently has to offer to analyze cross sectional and time series data sets, giving considerable weight to the hands-on application of these methods to empirical problems in macroeconomics, finance and labor economics/public finance. The course will also provide an introduction to working with the software package *STATA*, and course participants will be asked to work through empirical exercises using *STATA* (or some other software package of their choice). At the end of the course participants should feel comfortable to do independent empirical work using cross sectional and time series data sets, and to interpret their results in terms of economic theory.

Course Website:

<http://www.wiwi.uni-frankfurt.de/binder/teaching/geco6181>

The course website will contain further updates of this syllabus, course news/administrative announcements, class notes, assignments and data sets. I encourage you to check the website regularly.

A word of caution regarding the web site: Do *not* view the course website as a substitute for attending class. In particular, the class notes are not meant for self study, but are rather distributed to make it easier to follow the classes. On occasion I will present additional material in class that is not covered in the class notes.

Course Requirements:

Grading will be based on a midterm examination (35%), a final examination (45%) and problem sets (20%). The midterm examination is scheduled for March 27, 2006 (in class), and the final examination is scheduled for May 12, 2006 (in class).

Texts:

I suggest that you consider purchasing the following book (which will serve as the main textbook for the course):

- Heij, C., P. De Boer, P.H. Franses, T. Kloek and H.K. Van Dijk (2004): *Econometric Methods with Applications in Business and Economics*, Oxford: Oxford University Press.

Further books containing a sizeable amount of material to be covered in this course and/or constituting valuable sources for further reading include:

- Wooldridge, J.M. (2006): *Introductory Econometrics*, Third Edition, Mason: Thomson South Western.
- Verbeek, M. (2004): *A Guide to Modern Econometrics*, Second Edition, New York: John Wiley.
- Enders, W. (2004): *Applied Econometric Time Series*, Second Edition, Chichester: John Wiley.

A quite comprehensive (yet still manageable) introduction to *STATA* is given by:

- Kohler, U. and F. Kreuter (2005): *Data Analysis Using STATA*, College Station: *STATA* Press.

Course Prerequisites:

I will presume knowledge of mathematical methods as covered in GEEO 6189: Mathematics for Economics. A review of the mathematical methods required for this course may also be found in Appendix A of the course textbook, Heij, De Boer, Franses Kloek and Van Dijk (2004).

Office Hours:

Instructor:

Michael Binder, Room: 355, Time: Friday, 11:00 am – 11:50 am and 4:00 pm – 5:00 pm;
mbinder@wiwi.uni-frankfurt.de.

Teaching Assistant:

Stephen Kinsella, Location: In Front of Department of Economics, Time: Monday, 6:00 pm – 8:00 pm; stephen.kinsella@gmail.com.

Course Outline:

1. Simple Regression Analysis

- Ordinary Least Squares
- Significance Tests
- Prediction
- Units of Measurement

Applications: Bank Wages; Stock Market Returns; CEO Salary and Return on Equity; Pension Plan Participation.

2. Multiple Regression Analysis

- Ordinary Least Squares and its Properties
- Significance and Other Parameter Hypothesis Tests
- Model Selection

Applications: Bank Wages; Gasoline Consumption; Industrial Production; CEO Salary and Return on Equity; Pension Plan Participation; Market Efficiency; Housing Price Assessments.

3. Nonlinear Regression Analysis

- Nonlinear Least Squares
- Maximum Likelihood and Likelihood Ratio-, Wald- and Lagrange Multiplier-Tests

Applications: Coffee Sales; Stock Market Returns; Food Expenditure.

4. Model Diagnostics

- Functional Form
- Varying Parameters
- Heteroskedasticity
- Serial Correlation
- Disturbance Distribution
- Regressor Endogeneity

Applications: Bank Wages; Coffee Sales; Interest and Bond Rates; Industrial Production; Food Expenditure; Stock Market Returns; Gasoline Consumption; Salaries of Managers; U.S. Presidential Election; Pension Plan Participation; Housing Price Assessments.

5. Dynamic Regression Analysis (If Time Allows)

- Autoregressive Models with Distributed Lags
- Forecasting
- Regression Models with Trend
- Spurious Regression

Applications: Industrial Production; Interest and Bond Rates; Mortality and Marriages.