**Economics 353 Prof. Stephen Schmidt**

**Seminar in Econometrics MWF 1:50-2:55**

**Lippman Hall 201** **Spring 2016**

Office: Lippman Hall 209

Office Hours: Tuesday/Thursday 10-12 and by appointment

Office Phone: 388‑6078

Email Address: [schmidsj@union.edu](mailto:schmidsj@union.edu)

**Course Objectives:**

This course is a seminar in applied econometrics. Students will learn common extensions to the least-squares model covered in Economics 243; these will include time series methods, error correction models, endogenous and instrumental variables, limited dependent variable models, and panel data models. The class will also focus on the construction of proper regression equations that can describe data sets appropriately, and on developing practical skills in developing regression equations and giving economic interpretations to the results. We will also read several papers and discuss the use of econometrics in those papers, and the links between economics and econometrics in those papers.

**Prerequisites:**

Students taking this course should have already taken Economics 243, Introduction to Econometrics, and either Economics 241, Intermediate Microeconomics, or Economics 242, Intermediate Macroeconomics. Concurrent registration in Economics 243 is not sufficient; Economics 243 must be completed before you take Economics 243. Concurrent registration in either Economics 241 or 242 is permitted but discouraged, since the material covered in Economics 241 and Economics 242 will be very useful, especially on the group project.

**Enrollment:**

This course is a seminar and is limited to a total enrollment of 15 students. Students who registered for this course last term are on the current class roster. Students who did not register, or for some other reason are not on the current class roster, must join the waiting list. If spaces become available in the class, they will be filled from the waiting list. Students will be admitted to the class in the order in which they joined the waiting list except in unusual circumstances. The class roster will be finalized by the end of the third class meeting.

**Course Requirements:**

The main requirements of this course will be computer-based problem sets and a group research project. The problem sets will require the use of Eviews or a comparable econometrics software package, and will also require drawing economic conclusions from the results of the statistical work. There will be four of these problem sets, and they will count for 40% of your grade.

The group research project will involve determining a topic, identifying a research question to be answered, collecting data and entering it into the computer, using the techniques of the course to analyze that data, and using the results to find the answer to the research question. Students will work on these projects in groups of two or three students; groups will be assigned at the start of the term. In the first half of the term there will be meetings with the professor to discuss the group's project and determine the group's research question and a strategy for answering it. Groups will submit a rough draft of their paper at the end of the 7th week, and will make an oral presentation to the class in the 9th or 10th week, describing their research and the answer to their research question. The oral presentation will count 20% of your grade. The final draft of the paper will be due during finals week, and will count for 30% of your grade. Members of a group will not necessarily receive the same grades on either the oral presentation or the final paper. The quality of the rough draft and oral presentation, and the quality of revisions made to the final paper based on the feedback from the draft and the presentation, will influence the grade you receive on the final paper. There will be regular readings and those readings will be discussed in class. Your participation in discussions and computer exercises will contribute the final 10% of your grade. There will not be any examinations.

**Project Timeline**

Groups produce a project report which is normally around 25 pages long, including a rough draft and a final draft, and present their project to the class. To get all this done requires steady effort throughout the term – picking a topic, collecting literature, finding a model and data, estimating the regression, analyzing the results, and preparing the paper and presentation. I will meet with each group three times during the term, to make certain that the group is proceeding on schedule. Below is the schedule each group should follow in order to make sure that the rough draft is ready on time, and the group is prepared to give its presentation by 9th week.

1st week – Form groups

2nd week – Meet with Prof. Schmidt to discuss topics and questions

4th week – Present summary of literature and possible data sources

5th week – Meet with Prof. Schmidt to discuss model, data, regression, hypothesis

7th week – Rough draft due

9th, 10th week – Presentations

Finals week – Final draft due

**Textbook and Readings**

*Introduction to Econometrics*, James Stock and Mark Watson. This book is available at the College bookstore. If you used a different book in Economics 243 and you still have it, you may use that book instead of this one, if it covers the same material. If you have a different book you’d like to use, bring it to me in my office hours and I will check its coverage.

Papers assigned for class discussions will be available on reserve at the library. You might want to make photocopies of these papers for yourself so that you can bring them to class on the day of the discussion. The reading list is attached at the end of the syllabus; however, I expect to revise this list substantially, so some of the readings assigned may not be on this list.

**Syllabus**

A. Review of OLS and hypothesis testing

1. The OLS model

2. Hypothesis testing

3. Omitted variable bias, irrelevant variables, and model determination

Readings: Chapters 4, 5

B. Determining the proper regression equation

1. Choosing a functional form

2. Dummy variables and interaction terms

3. Multicollinearity

4. Nonlinear functional forms

5. Panel data

Readings: Chapters 6, 7, 8

C. Time-series Regression

1. Stationarity and spurious regression

2. Estimation in first differences and detrended regressions

3. Cointegration

4. Vector autocorrelation

5. Vector error correction

Readings: Chapters 12, 14

D. Structural estimation and simultaneous equations

1. Seemingly unrelated regressions

2. Economic models and prediction

3. Endogenous variables, instruments, and two and three stage least squares

Readings: Chapter 10, 11

E. Binary, index, and limited variables as dependent variables

1. Probit models

2. Logit and multivariate logit models

3. Tobit models

Readings: Chapter 9

Papers from the reading list will be assigned as the course goes along.

**Reading List**

Note: I may make additions to this reading list as the term progresses.

Alexander, Donald L, Joseph E. Flynn, and Linda A. Linkins. “Innovation, R&D Productivity, and Global Market Share in the Pharmaceutical Industry.” Review of Industrial Organization, vol. 10, no. 2 (April 1995), p. 197-207.

Bishop, John A., and Jang Yoo. "'Health Scare', Excise Taxes, and Advertising Ban in Cigarette Demand and Supply." Southern Economic Journal, vol. 52, no. 2 (October 1985), p. 402-411.

Christensen, Lauritis, and William H. Greene. "Economies of Scale in US Electric Power Generation." Jounral of Political Economy, vol. 84, no. 4 (1976), p. 655-676.

Danziger, Sheldon, et. al. ""Work and Welfare as Determinants of Female Poverty and Household Headship." Quarterly Journal of Economics, vol 97 (1982)

Dasgupta , Partha. “The Population Problem: Theory and Evidence.” Journal of Economic Literature, Vol. XXXIII (December 1995), p 1879-1902

Goldin, Claudia, and Kenneth Sokoloff. "Women, Children, and Industrialization in the Early Republic." Journal of Economic History, vol. 52, no. 4 (December 1982), p. 741-774.

Hendry, David. "Econometrics - Alchemy or Science?" Economica, vol. 47 (November 1980), p. 387-406.

Jones, Ethyl B., and John D. Jackson. "College Grades and Labor Market Rewards." Journal of Human Resources, vol. 25, no. 2 (Spring 1990), p. 253-266.

Landes, Elisabeth M., and Andrew M. Rosenfield. “The Durability of Advertising Revisited” Journal of Industrial Economics vol XLII no 3 (September 1994).

Poterba, James M. “Stock Market Wealth and Consumption.” Journal of Economic Perspectives, vol. 14 no. 2 (Spring 2000), pages 99-118

van der Gaag, Jacques, and Wum Vijverberg. "Wage Determinants in Cote d' Ivoire: Experience, Credentials, and Human Capital." Economic Development and Cultural Change, vol. 37, no. 2 (January 1989), p 371-381.