

**The Johns Hopkins University, Applied Economics Department**  
**Syllabus for Microeconometrics (440.648)**  
**Spring 2008**

**Instructor:** Dr. Edward Seiler

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**Class Meetings:** Thursdays 6:00–8:45 pm.

Note that there is no class on March 20<sup>th</sup> (spring break).

This course covers a number of advanced microeconomic techniques frequently encountered in applied econometric analysis. Tentative topics include:

- A review of basic OLS techniques
- Instrumental variable estimation
- Panel data
- Maximum likelihood estimation
- Qualitative dependent variable analysis (Logit, Probit)
- Limited dependent variable analysis (Tobit models, Heckman two-stage selection models, duration models)
- Seemingly unrelated regression

**Requirements and Grading**

The emphasis in the course will be on the application of the above techniques in the form of three computer-based problem sets and two term papers. Each problem set will account for 10% of the final grade. The first term paper will require that students choose a published article, summarize the article and replicate the main results. Each student will then present the article summary and results in class. The first term paper and presentation will account for 30% of the final grade. The second term paper will require that students use a dataset of their choice to investigate a research question that can be analyzed using the econometric tools covered in class. The second term paper will account for 40% of the final grade.

**Readings**

The main textbook for this course is:

- **A Guide to Modern Econometrics** (2<sup>nd</sup> ed.) by Marno Verbeek

In addition the following texts will be helpful:

- **Econometric Methods** (4<sup>th</sup> ed.) by Jack Johnston and John DiNardo
- **A Guide to Econometrics** by Peter Kennedy
- For STATA users: **Statistics with STATA** by Lawrence Hamilton
- For SAS users: **The Little SAS Book : A Primer** by Lora D. Delwiche, Susan J. Slaughter
- For SAS users: **A Handbook of Statistical Analyses using SAS** by Geoff Der and Brian Everitt

**Questions**

The best way to get in touch with me is by email. I will set aside some time each weekday morning to answer mail. I will also be happy to meet with students by appointment and informally during class breaks.

**Guidelines for Term Paper 1**

The purpose of the paper is to utilize the techniques developed in this and earlier courses to conduct research. The first paper will replicate academic work and lay the groundwork for the second term paper.

To complete the first paper I suggest the following steps:

1. Go to the library and browse through some recent economic journals. I suggest you stay away from top tier journals (Econometrica, American Economic Review, Journal of Political Economy, Journal of Economic Theory and Quarterly Journal of Economics). Alternatively, you can browse the web and find published papers or working papers at authors' websites.
2. In selecting an article pay particular attention to the data and models that are used. Make sure that the data is publicly available and that the econometric techniques fall within the scope of the course. I would suggest that you don't use one of the publicly available panel or large household datasets unless you are ready to spend a great deal of time reading the documentation.
3. Try to replicate the results reported in the paper. This is not easy to do, but try to get approximate results.

The format of the term paper should be as follows:

1. Introduction: A brief statement of the problem and a brief summary of the main results
2. A quick review of the article, both the theory and the empirical results
3. The data and model used
4. Your results
5. Conclusions and suggestions for further work

Please keep your paper brief. I suggest 3-5 pages.

Timeline:

- By the start of class on 3/6/2008 choose your article and email me a copy (or hand in a hard copy) of the journal article to me
- By the start of class on 3/27/2008 submit your completed paper

Presentation:

The purpose of the presentation is to provide students an opportunity to share their chosen research article with classmates. Presentations will take place in the second half of class on the weeks of March 27, April 3 and April 10. Each presentation should take approximately 15-20 minutes. Sign up for presentation slots will be on March 13.

### **Guidelines for Term Paper 2**

This paper is, in many respects, a continuation of the first term paper. The main innovation is that this exercise will give you an opportunity to ask a question of interest to economists and use one of the tools learned in class to answer it. I suggest that you use one of the main topics of the course in this research (panel data, qualitative dependent variable analysis, and/or limited dependent variable analysis). I advise against undertaking new data collection for the sake of this paper. Instead I recommend that you choose a dataset available at work or download a publicly available set of data from the internet

The format of the term paper should be as follows:

1. Introduction: A clear statement of the question being asked and why it is of interest
2. Model Specification: Provide a formal description of the economic and statistical aspects of the model you are employing. If you have some specific hypotheses that you will be testing this is a good place to describe the hypotheses and the model restrictions they imply
3. Data Description: Where the data comes from, how it was collected, variable definitions, and summary statistics
4. Results: providing tables of the estimated model(s) and your interpretation of your findings
5. Conclusions: Describe what you have learned from this exercise and, perhaps, what further analysis or data collection might be suggested by your results

Please keep your paper brief. I suggest 5-7 pages (including tables). In addition to the paper please submit the computer output that generated the results described in the paper, labeling the results so that I can readily match the output with the results reported in the paper's tables.

I will be happy to discuss paper topics with you. For this purpose I will have extended class breaks on April 17 and April 24.

The paper itself is due May 1, 2008.