Office Hours: To be announced and by appointment.

This course will consist of a midterm and a final exam as well as computer exercises. The computer exercises will make use of computer software of your choice. e.g., EVIEWS, Excel, R, Python, SAS, Stata, etc. EVIEWS will be used in class. EVIEWS is a user-friendly program and is available in the Economics Computer Lab in Hill 806. (A student version of EVIEWS can be obtained online and through the “Rutgers Virtual Computer Labs”, but, once again, it is available in Hill 806.)

Prerequisites: Successful completion of both Statistical Methods (220:203) and Introduction to Econometrics (220:303). Some rudimentary knowledge of calculus is expected.

Office Hours will be conducted via Webex. Every student should have a Rutgers version of Webex. You can check with the Office of Information Technology if you have problems acquiring this. You can connect to class office hours at: https://rutgers.webex.com/meet/ploeb. The times for office hours will be announced in class.

More on Software: As mentioned above, students will need to make use of a software package to do regression analysis. There are many such programs and some students may be familiar with their use, e.g., Excel. Students can access a lot of software through the Rutgers Virtual Computer Labs using the following link:: https://it.rutgers.edu/virtual-computer-labs/

Rutgers, as mentioned above, makes available many software packages through the virtual computer labs. To access the use of a free Rutgers version of EVIEWS, for example, follow the directions below:

1. Go to the website: https://it.rutgers.edu/virtual-computer-labs/knowledgebase/accessing-virtual-computer-labs/
2. At the “Logging In” section, click on Navigate to https://labgate.rutgers.edu
3. Click on “OK”
4. On the left-hand side of the screen, double click on “Programs”
5. Double click on “Class Software”
6. Double click on “Eviews9”
7. Double click on “Eviews9(x64)”
8. Click on “Ok”

The reading of Journal Articles will be required and they will be discussed in class. A sample of of articles to be discussed is included in this outline. Additional papers will be assigned as the class progresses.

The final exam date is Tuesday, May 10, 2022 from 8:30-11:30 am. The University determines the date and time for the final exam. (Any conflict must be addressed by the other instructor.)
The course will be composed of advanced topics beyond those covered in Econometrics: 220:303. Estimation techniques beyond Ordinary Least Squares will be developed along with estimation issues not addressed in Econometrics 303. Students will be prepared to read articles using classical econometric techniques and Bayesian methods (to some extent).

**Text:** Any reasonable text on econometrics may be used. Students who have need of an econometrics text may find the following useful: Robert S. Pindyck and Daniel L. Rubinfeld (1998), *Econometric Models and Economic Forecasts*, Irwin McGraw-Hill, Inc. 4th ed. (It is suggested that you rely initially on the text used in the course you took in Econometrics 303 or Introduction to Econometrics. You need not buy an additional textbook.)


**TOPICS (Suggested)**

1. Review of the Classical Linear Regression Model (including the assumptions and the violation of the assumptions).
2. Some additional issues dealing with tests of the classical assumptions, e.g., H-test, issues with the DW test, White Test, White Corrections, etc. (Are t-tests and p-values all that count?)
3. Omission of a regressor(s), and simultaneous equation bias.
4. Simultaneous Equations and Estimation
   a. Simultaneous equations
   b. The Identification Problem in Econometrics and Endogeneity
   c. Recursive equation systems and block recursive systems
   d. Seemingly unrelated equations
   e. Two Stage and Three Stage Estimation
5. Regression Specification Error Test (RESET)
6. Maximum Likelihood Estimation
7. Binary Choice Models
   i. Probit Model
   ii. Logit Model
8. Missing Observations
9. Bayesian Modeling
10. Panel Data - Pooling
i. Fixed Effect Model
ii. Random Effect Model

11. Topics in Applied Economics

Articles for Discussion


