220:303 Econometrics Prof. Peter D. Loeb
COURSE OUTLINE, Fall 2020
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This course is offered as an online – synchronous – course. There are two exams as well as required homework and computer exercises. The first exam (the midterm) will count 40 percent, the homework will count 10 percent, and the last exam will count 50 percent of the grade. There will be no make-up exams. Attendance is required. Homework handed in late will be penalized by one letter grade for each day tardy. Students must master a regression program of their choice. Such programs, needed for much of the homework, include: EVIEWS, Stata, Excel, R, Python, etc. Some of this software is available at no cost from Rutgers. More information regarding free access to EVIEWS will follow. Assignments will be posted on Blackboard. (The final exam, as of 8/5/20, has not been made available. It will be announced sometime in the future. I will also announce the final exam date in class as soon as I am made aware of it. Let me emphasize, the date and time for the final exam are fixed by the university. Any conflict with other exams must be addressed by the other instructor.)

This course will develop the basic concepts and tools of introductory econometrics at the undergraduate level. The classical linear regression model will be developed, and violations of the classical assumptions will be addressed. Students should be able to read articles using basic econometrics and regression analysis after completing the course.

Prerequisite: 21:220:203, Statistics.

Cheating will not be tolerated and may result in disciplinary action. (See the Policy on Academic Integrity in the Student Handbook.)

Visit this site often.

REQUIRED TEXT: Robert S. Pindyck and Daniel L. Rubinfeld (1998), Econometric Models and Economic Forecasts, Irwin McGraw-Hill, Inc., 4th ed., ISBN: 0-07-050208-0, (Students may wish to purchase a copy of the student version of EViews, but this is not required.)
Recommended: A.H. Studenmund (2017), Using Econometrics, A Practical Guide, Pearson, 7th ed. Earlier editions are useful as well. Also: Damodar Gujarati and Dawn Porter (2010), Essentials of Econometrics, Irwin McGraw-Hill, Inc., 4th ed. ISBN: 978-0-07-337584-7.

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. I will be using in class a software package called: EVIEWS. It is very user friendly and powerful. A student version can be order if desired. However, Rutgers allows student access to this program online for **free**. I urge you to make use of it.

To access this free version of EVIEWS 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, click on "Programs"
5. Double click on "Class Software"
6. Double click on "Evies9"
7. Double click on "Eviews9(x64)"
8. Click on "Ok"

TOPICS: (Chapters and pages refer to Pindyck and Rubinfeld)

I. Introduction and Review of Math and Statistics Prerequisites: Ch2, pp19-28, 33-43, 48-51
II. Introduction to the Regression Model: Introduction, Ch. 1
III. The Two-Variable Regression Model: Ch2, pp 26-33, Ch3
IV. The Multiple Regression Model: Ch4
a. t-tests: Ch 3&4
c. F-test: Ch 3&4
d. Correlation: Ch 3&4
e. Multicollinearity: Ch 4
f. The general linear model and transformations: Ch 5, pp 117-120
g. dummy variables: Ch 5, pp 122-128
V. Serial Correlation and Heteroscedasticity: Ch6, pp 178-187
VI. Simultaneous Equation Models: Instrumental Variables and 2SLS: Ch7; Ch12, pp 337-353
VII. Additional Topics in Econometrics