ECONOMETRICS 120A - FALL 2004

Classroom: York Hall 2622 *Class Time:* MWF 11:00 a.m. - 11:50 a.m.

Instructor: Zhigang Li *Email:* zhigangli2000@yahoo.com (Emails to my other email accounts will not be considered)

Office: Sequoyah Hall 207 *Office Hours:* MWF 9:45 a.m - 10:45 a.m. (i.e. *before* each class)

Course Webpage : www.econ.ucsd.edu/~zli/120a.htm

Teaching Assistants:

Capistran, Carlos Email: ccapistr@econ.ucsd.edu Office: Economics 116 Session: TBA

Chalak, Karim Email: kchalak@ucsd.edu Office: Economics 122 Session: TBA

Kebabci, Deniz Email: dkebabci@econ.ucsd.edu Office: Sequoyah 140 Session: TBA

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Note: Sequoyah Hall is the building facing and connected by a bridge to the Economics Building.

Course Description:

As the first of the *Econometrics* sequence, this course is designed to provide you building blocks necessary to construct rigorous econometric tools. These building blocks include basic statistics, probability rules, and the methodology of inferring the truth from the observed. Besides laying a groundwork for sophisticated econometrics, this course also provides you some tools that are ready to be used in analyzing *quantitatively* interesting economic problems. For example, this course teaches you how to judge statistically whether two variables are the same on average; this tool has wide applications in economic and business practices.

Texts

Wonnacott, T.H. and R.J. Wonnacott, (1990) Introductory Statistics for Business and Economics, Fourth Edition, John Wiley and Sons:New York.

Software

All of the statistics in this course can be done using the Microsoft Excel spreadsheet program, which is available in the computer laboratory in Econ 100. You may use other econometric or statistical software.

Teaching Format

My teaching format is normal lecturing (i.e. I will write everything important on the blackboard). I post my notes used in previous quarters and my teaching content this quarter will be similar. The notes list materials I think are the most important, but the notes do not explain much, so class attendances are considered necessary for full understanding of the materials. According to my experience, students who get good grades are those who attend most classes, do all the exercises I recommend, not reluctant to ask questions when they are confused, and most importantly, think hard.

My Assumptions

You are not required to know statistics already, but you should be familiar with basic concepts you learned in introductory microeconomics and macroeconomics. The more you know about economics, the better, since this will increase your chance to get a good grade out of a two-page empirical project at the end of the class. A question you will want to ask frequently throughout this class is: what is economics? So start thinking about it now.

Accommodations for students with disabilities

I am available to discuss appropriate academic accommodations that may be requested for student with disabilities. Requests for academic accommodations are to be made during the first two weeks of the quarter, except for unusual circumstances, so arrangements can be made.

Tentative Course Outline

The course is organized around the following topics. Class notes will be posted in order.

Introduction (PDF)

Part One --- the Basics

Topic 1 Describing Data --- Single Variable PDF Notes

Topic 2 Describing Relationship in Data --- Two Variables PDF Notes

Homework 1 (Oct. 8 Friday in class)

Topic 3 Basics of Probability PDF Notes

Midterm 1 (Oct. 15 Friday in class)

Part Two --- Inference about the Mean

An Application: Inferring the Truth --- the Fairness of a Coin PDF Notes

Topic 4 Distributions of Sample Mean PDF Notes

Homework 2 (Oct. 29 Friday in class)

Topic 5 Confidence Interval PDF Notes

Homework 3 (Nov. 8 Monday in class)

Midterm 2 (Nov. 12 Friday in class)

Topic 6 Basics of Hypothesis Testing PDF Notes

Part Three --- Applications, Generalization, and the More Advanced

Topic 7 Point Estimation --- Bias, Consistency, and Efficiency PDF Notes

Homework 4 due (Nov. 29 in class)

Topic 8 Common Probability Distributions PDF Notes

- Bernoulli Distribution
- Binomial Distribution
- Poisson Distribution

Topic 9 Two Random Variables PDF Notes (instruction ends on Friday, December 3)

Final (Date to be determined)

Optional Bonus Project due during the final.

Problem Sets and Practice Exams

Tips for Using the Excel

My tips for drawing a histogram: First turn your data into a five-bin frequency table with a MIDPOINT for each bin in the first column and the corresponding frequencies in the second column. On an Excel worksheet input the frequency table. Click the "Chart Wizard" button, choose the "Column" chart type, click "next", highlight the "frequency" column of the data, now you should see a five-bin bar chart on the mini-window. Click the "series" button close to the upper right-hand corner, click the small open window next to "Category (X) axis labels", highlight the "bin" column of the data. Click "next" and fill in any information you want. Finally, click "finish".

Bonus Project for the Final

Four Homework Assignments	20%