

# ECON 301

Collection and Use of Data in Economics

Spring 2007: TTH 12:30 – 1:45

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**Office Hours:** Tuesday and Thursday 11-12am, Wednesday 11-12am and by appointment

## Text

There are no required textbooks for this class. However, I do have two optional textbook recommendations. If you are not familiar with Excel, I recommend - *Data Analysis with Microsoft Excel*, Berk and Carey, Thompson Publishing, 2004. If you do not feel comfortable with the material that was presented in Econ 201, I recommend – *Modern Business Statistics with Microsoft Excel: 2<sup>nd</sup> Edition*, Anderson, Sweeney and Williams, Thompson Publishing, 2006.

The other book I recommend is *Freakonomics* by Steven Levitt and Stephen Dubner. You will have a five point question on each exam over chapters specified in class.

## Other Materials

In addition to the optional textbooks listed above, you will need a personal computer with Internet access, Microsoft Excel, and word processing software. All PCs in the student computer labs have these attributes. You should also have a calculator to use in class, on homework, and on exams. The calculator needs to have an exponent key (often marked  $y^x$ ). You should also have access to Blackboard as I will post outlines of lecture notes, announcements, and links to economic data sources. I strongly encourage you to print out the lecture notes before coming to class.

## Prerequisites

A grade of C or better in Economics 101 and 102; Economics 201 or Statistics 119; and Information and Decision Systems 180 or three units of Social Science 201A, 201B, 201C, 201D including a spreadsheet application. Anyone who has not completed all of the prerequisites (including those who are concurrently enrolled in one or more prerequisite courses) should not enroll in this course.

## Course Goals

This course has three primary goals. (1) Develop an ability to search for and obtain economic and business data. (2) Be able to gather data into Microsoft Excel and produce relevant graphs and tables. (3) Be able to statistically analyze data including the appropriate use of summary statistics, hypothesis testing, confidence intervals, and regression analysis. Upon completion of this course you should be able to find a data set, present appropriate graphs and tables, and provide a statistical analysis of relevant issues associated with the data set. This course is designed to prepare you for research projects in other upper division courses as well as develop skills attractive to potential employers.

## Course Grading

Grades will be based on the following allocation:

Problem Sets	20%
Midterm 1	20%
Midterm 2	20%
Final	30%
Case Studies	10%

## Homework

There will be approximately six problem sets during the semester and you are allowed to drop your lowest grade. The problem sets are designed to supplement the material presented in class and to provide students with practical experience in the subject area. I recommend that you start the homework as soon as it is given to you as this will allow you to ask questions in class or come to my office hours if you need assistance. Assignments are due by the beginning of class on the due date announced in class (usually you are given a week to complete each homework assignment). Assignments must be submitted in hard copy form (no faxes or emails will be accepted). **Late assignments will not be accepted.**

## Case Studies

There will be three case studies throughout the semester. These will differ from the homework in that they will be real world applications of the tools we learn in class. The case studies will ask you to analyze an economic or business problem and produce a recommendation using the statistical tools you will learn about during the semester. The case studies will require you to submit a one to two page typed report of your recommendations along with supporting graphs and statistics. The first two case studies are required and the third one is optional.

**Please do not cheat!** Students violating section 41301 of Title V of the California Code of regulations definition of academic misconduct will **receive an F in Econ 301** and will also be turned into the Office of Student's Rights and Responsibilities for further action. You may ask your fellow classmates questions about the homework and the case studies, but you may not copy anyone else's work. You are also forbidden from looking at the answer keys that I provided for the students for last year's Econ 301 classes. In previous semesters, students who were caught cheating typically did homework or case studies together on the computer and then changed a few words before turning the work in as their own. This is not acceptable. All of the homework and case studies must be done wholly on your own. It is usually obvious when students do not work by themselves and the penalty, an F in Econ 301, is not worth the risk.

## Exams

Midterm 1 is scheduled for Thursday, March 1, Midterm 2 is scheduled for Thursday, April 12, and the Final Exam is scheduled for Tuesday, May 15 from 1-3 pm. The exams will be graded on a curve with an average score in the C range. There will be no makeup exams. If you need to be excused from an exam due to an extreme emergency you must contact me ahead of time and bring a note that independently verifies the emergency.

## **Attendance and Classroom Behavior**

There is no attendance requirement. However, you are responsible for all information presented during class and I strongly encourage your attendance. The vast majority of the students that did well in Econ 301 consistently came to class. If you miss a class, it is your duty to contact a classmate and get their lecture notes. Last semester, I asked students in the C range how they could have improved their grade and their response was not to miss class. Please be on time to class and do not leave early. Do not talk during class and turn off you cell phones before class begins. Students who are involved in classroom disruptions will be asked to leave the class and will be reported to the Office of Students Rights and Responsibilities.

## **Course Outline**

**I. Working with Data** – Learn how to read data into Excel and manipulate data once it is there.

**II. Working with Charts** – learn how to create scatter plots, time series graphs, and pie charts in Excel. One hint, chart wizard rules!

**III. Describing your Data** - Learn how to calculate means, standard deviations, medians, five number summaries in Excel and by hand. Create and interpret histograms.

**IV. Probability Distributions** – The normal, t and F distributions.

**V. Statistical Inference** – Confidence intervals and hypothesis testing by hand and in Excel.

**VI. Regression and Correlation** – Correlation coefficients, what they mean and how to calculate them. Simple linear regression by hand and in Excel.

**VII. Multiple Regression** – Learn how to run a multiple linear regression in Excel and interpret the results.

**VII. Time Series** – The components of time series data, moving averages and simple exponential smoothing.

**IX. Data collection** – Different types of macroeconomic and microeconomic data, how they are collected and where you can find them on the internet.

This course outline is tentative in nature and may be modified at the instructor's discretion.