

**Economics 202**  
*Business and Economic Statistics*  
Spring 2008

Dr. Léonie L. Stone

Office Hours: M 2:30-3, W, 1:30-3, and by appointment on Thursdays and Fridays.  
I'm also around all day on Tuesdays, usually in the South Lab.

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**Catalog Description:**

A survey of the basic statistical tools used in management decision-making and data analysis. Major topics include data organization and presentation, a review of probability concepts, sampling and sampling distributions, statistical estimation and hypothesis testing, and correlation and regression analysis. The course also emphasizes applications of statistical techniques, the use of computerized statistical packages and ethical issues in statistical analysis.

**Course Content and Learning Goals:**

The overall objective of this course is to learn to apply the tools of statistical analysis to a wide variety of problems, and to be able to draw inferences and conclusions from this analysis. By the end of the course, students should be able to:

- ❖ Understand the properties of distributions.
- ❖ Use regression analysis and correlation to understand relationships between variables.
- ❖ Collect and use data for statistical inference.
- ❖ Understand the principles of probability.
- ❖ Understand the concept of statistical confidence and use confidence intervals to make inferences about data
- ❖ Analyze data using single and multiple regression models, and understand the properties of such models.
- ❖ Relate statistical concepts to a variety of business and economic applications.

**Prerequisites:**

Either Math 213 or 221, or an equivalent calculus course.

**Textbook:**

Groebner, Shannon, Fry, and Smith, *A Course in Business Statistics*, 4<sup>th</sup> edition. There is a similar book by the same authors; make sure that you get the right one (this one is paperback) Either way, you **must** have the CD that comes with the book, so if you buy it used, make sure that it has the CD. There is a student solutions manual available, which is optional; it has worked-out solutions to the odd-numbered problems in the text as well as other things. There is also a companion web site for the text at:

[http://wps.prenhall.com/bp\\_groebner\\_coursebus\\_4](http://wps.prenhall.com/bp_groebner_coursebus_4)

This has chapter summaries, online quizzes, and a variety of other resources, some of which are also available via the CD.

**Grading:**

Your grade will be based on homework (15%), exams and final (20/20/30%), and lab assignments/lab participation (15%). There will be two exams and a final.

Make-ups on exams will be given only in the case of **documented** emergencies. Consideration will be given to class participation in the case of borderline grades.

The midterms will be given outside of class, at **4:15 Friday afternoons, February 22<sup>nd</sup> and April 4<sup>th</sup>**. The final is on **Wednesday, May 14<sup>th</sup>, 12-3 a.m.** No early finals will be given under ANY circumstances. If you have a conflict with the midterms, please see me as soon as possible, and we'll work something out. (Please note that you know the dates of these exams NOW. Thus "I didn't realize that the exam was this day" or "I got a plane ticket without noticing the date", etc., are NOT valid reasons.)

#### **Labs and Homework:**

Much of the focus of this class is on problem-solving. In order to solve problems correctly and in a timely fashion, you must practice. **You are responsible for keeping up with the textbook problems as we go along.** Answers to odd-numbered problems are in the text. If you are having trouble, you are responsible for getting help, either from me, from the economics tutor, or from other students.

There will be **homework** every week (beginning in the second week), due AT START OF CLASS on **Wednesday**. If you do not turn the homework in then, you may not turn it in later, under any circumstances, so please don't ask. There will be a total of approximately 14 homeworks, and you may drop **two**. **Your homework must be stapled and legible.**

**Lab assignments**, will usually be completed during the lab period. Lab assignments will be worth varying numbers of points; your lab score is based on percentage of total lab points completed. Longer assignments may have due dates outside the lab time. In general, I don't accept late lab assignments without a very, very good reason. You may drop **two in-class** lab assignments; you may not drop any lab assignments that are due later than the lab period.

Labs begin on Tuesday, January 29. Labs will not meet on G.R.E.A.T Day, which is April 22<sup>nd</sup>.

#### **Frequently Asked Questions about LAB:**

**1. I'm in the 8:30 lab (or the Wednesday lab... or the Friday lab). Can I go to the 11:20 (or 2:10) lab instead? (Or vice versa...)**

Probably not. The problem is that there are about 75 students and 25 computers, so if everyone decides to attend the same lab period, there aren't enough computers, and there aren't enough chairs. Please try to attend lab at the time that you're enrolled for. If you have a good reason some particular week, please check with me ahead of time and be prepared to bring a laptop with you.

**2. Do we have to have lab at 8:30?**

It depends. Everybody hates 8:30. On weeks that we have shorter assignments, we may begin lab at 9 or 9:30 (this will also change the lab time for the other sections). Schedule changes will be announced in email or in class; **make sure that you do check whatever email address that Geneseo lists for you.**

**3. I didn't come to lab, but the assignment is due later... can I turn it in then anyway?**

If the assignment is due during lab, no. If the assignment is due later, yes, but you are responsible for getting the assignment and completing it on time.

#### **4. Do I have to come to lab?**

As with all classes, you have to make your own utility-maximizing choices. But participation is part of your lab grade, and if you do not attend, you cannot participate. Also, if you need help with assignments, I'm not going to be very sympathetic if you haven't been in lab (or class...).

*Please note that getting to drop some number of homeworks and lab assignments is a privilege, not an entitlement. I do so because I don't want to have to judge whether missing class for an athletic event or a family event or because you overslept or because you were abducted by aliens and had your brain sucked out is a good reason... or a better reason than someone else's reason. It's a gift. You can miss four days... or you can have four bad days... or whatever. What you cannot do is take a makeup on anything except an exam.*

#### **Calculators and Formulas:**

You need to be in the habit of bringing a calculator with you ALL the time. You must have a calculator for the midterms and final, and I will NOT provide you with one if you forget yours. I will provide you with a formula sheet for all quizzes and exams (but bear in mind that having the formula is useless if you don't know what to do with it!

#### **Topic Schedule:**

##### **Chapter 1: The Where, Why, and How of Data Collection**

Descriptive statistics, data collection methods, population and samples, data types and measurement levels.

##### **Chapter 2: Graphs, Charts, and Tables—Describing Your Data**

Frequency distributions and histograms, bar charts, pie charts, line charts, scatter diagrams

##### **Chapter 3: Describing Data Using Numerical Measures**

Measures of center and location, measures of variation

##### **Chapter 4: Using Probability and Probability Distributions**

Rules of probability, introduction to probability distributions

##### **Chapter 5: Discrete and Continuous Probability Distributions**

The binomial distribution and its normal approximation; the normal probability distribution

##### **Chapter 6: Introduction to Sampling Distributions**

Sampling error, sampling distribution of the mean, sampling distribution of a proportion

##### **Chapter 7: Estimating Population Values**

Point and confidence intervals, determining the sample size, estimating a proportion