

# Introduction to Statistics — Stat 1040, Sections 003 & 004, Spring 2003

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[http://www.math.usu.edu/~symanzik/teaching/2003\\_stat1040/stat1040.html](http://www.math.usu.edu/~symanzik/teaching/2003_stat1040/stat1040.html)

Text: *Freedman, Pisani, Purves: "Statistics", Third Edition, W.W.Norton & Company, 1998.*

Additional Course Material: Bound packet of fill-in lecture notes, copies of old exams and old quizzes, solutions to review questions, etc., available at the bookstore for about \$ 13.00. **Please note that there are different sets of Stat 1040 notes available at the bookstore — you need the notes for Sections 003 & 004.**

## Classes & Rooms:

Section 003: MWF 10:30am – 11:20am, Mo 1/6 – Fr 4/25, 2003: FAV 262.

Section 004: MWF 12:30pm – 1:20pm, Mo 1/6 – Fr 4/25, 2003: NR 105.

Please note that there are no classes on Mo 1/20 (Human Rights Day) and Mo 2/17 (President's Day). However, Monday classes will be held on Tu 2/18 (i.e., no regular Tu classes will be held during that week).

Office Hours: MWF 9am – 10am and by appointment.

## **Course Objectives:**

- Developing statistical literacy needed to properly understand and use information in media and in everyday life.
- Becoming familiar with statistical methods used for collecting, analyzing, and interpreting data.
- Developing critical thinking and reasoning capabilities.

## **Topics:**

Design of experiments: controlled experiments and observational studies  
Descriptive statistics: histograms, the average, the standard deviation  
The normal approximation for data  
Correlation and regression  
Brief introduction to probability  
The law of averages, the central limit theorem  
Sample surveys, chance errors in sampling  
Chance models: examples  
Tests of significance.

**12 Quizzes:** Usually on Friday (except first week of class, days of midterms, and Spring Break): 1/17, 1/24, 1/31, 2/7, 2/21, 2/28, 3/7, 3/21, 4/4, 4/11, 4/18, and 4/25.

The first 10 minutes of class on these 12 days will consist of a brief quiz on the material covered up to the previous class (usually Wednesday). These quizzes will consist of about two questions. Typically, one question will be a fairly straightforward calculation, while the other question will generally be more conceptual, generally requiring a short answer of several sentences. The quizzes will be closed–book and closed–note, but formulas will be provided. You should prepare for the quizzes by doing the exercises from the book and by working through the old quizzes from the workbook. Calculators may be necessary. Each quiz will be graded out of 20 points. Makeups will only be permitted if you *e-mail me in advance*, stating the reason for your absence. Overall, there will be 12 quizzes. At the end of the semester, your two lowest quiz scores will be dropped, i.e., only your 10 best quizzes count towards your final grade.

**2 Midterms:** The 2 midterms (and the final exam) will be closed–book and closed–note, but formulas will be provided. Calculators are required. Each midterm will be graded out of 200 points. Exam policy is *no makeups* unless you have a very good reason and notify me *by e-mail in advance* that you will not be able to attend a scheduled exam.

**First Midterm:** approximately Chapters 1–12 Fr 2/14, in class

**Second Midterm:** approximately Chapters 13–23 Fr 3/28, in class

**Final Examination:** There is a common final exam for *all* sections of Stat 1040. The exam will be on Monday, April 28, from 9:30am through 11:20am. **If you have ANY problem with the day or time the final exam is scheduled, you should drop the course and take it another semester. You will not be allowed to take the final at another time because of vacation or any other plans. In the case of a last–minute (medical) emergency, you will be given an incomplete and you are required to take the common final the next time the class is offered.** The final will be held in the regular classroom unless you are told otherwise in the last week of classes.

**Grades:** Your grade will be calculated as 20% quizzes, 20% each midterm, and 40% final exam. The average grade profile for Stat 1040 is approximately 15% A’s, 25% B’s, 40% C’s, and 20% D’s and F’s. However, there is considerable variation among sections, so the grade profile for this section may be higher or lower than the overall grade profile for the course. If every student does satisfactory work, every student will pass the class.

**Tutoring Labs:** Tutors will be available. They will answer questions and help explain difficult points in the text. More details will be provided later this week.

**Reading and Exercises:** Each week, you are expected to read 2 to 3 chapters from the book. This material will be discussed in the lectures. Homeworks will *not* be collected, but part of your reading responsibility is doing the exercise sets at the end of each section and at least some of the review questions at the end of each chapter. Your ability to do these is a measure of your understanding of what you have read. Solutions to the suggested review questions are available in the additional course material. A suggested reading program for each chapter is as follows:

1. Read the summary at the end of the chapter, taking careful notice of the key words which are in italic type.
2. Read the entire chapter without looking at the exercise sets, but paying attention to

the key words. This much, at least, you should do before the lecture on a given chapter. The remaining steps you should try before the lecture, but may need to wait until after the lecture to complete.

3. Reread the chapter, this time doing the exercise sets. Whenever necessary, look back at the chapter to find the ideas that will help you to do the exercises. Check your answers against those in the back of the book when you have finished a problem. Do not get in the habit of looking at the answers before you attempt the problems!

4. Work the review problems suggested below. These will generally be more challenging than the exercise set problems. When you are done, check your answers against those available in the recommended course material and on the course Web site. If you are not yet comfortable with the material, you may want to look at some of the remaining problems as well.

5. Reread the summary to make sure you now understand the key words.

	<i>Chapter</i>	<i>Suggested Review Problems</i>		<i>Chapter</i>	<i>Suggested Review Problems</i>
Part I	2	1,4,5,7,9,10,11,12	Part V	16	1,3,4,6,7,8,9,10
Part II	3	2,4,6,10		17	4,7,9,11
	4	1,3,6,7		18	2,4,6,9
	5	1,3,4,5,7,8,9	Part VI	19	5,6,9,12
	6	4,S6,S8,S10,S13		20	3,4,6,7
Part III	8	1,2,4,11		21	1,2,4,11
	9	2,8,11,12		23	2,3,6,8,9,10,11,12
	10	1,2,3,4	Part VIII	26	1,2,3,5,6,8,10,12(a)
	11	1,2,3,4,6,7,12		27	1,3,7,8,10
	12	2,3,5,8,9,10,11,12		28	1,2,3,7
Part IV	13	2,3,6,7,8,9,11,12		29	4,5,7,9
	14	1,4,6,7,8,9,10,11			
	15	S1,S3,S4,S5,S6,S9,S12			

**Courtesy:** Please turn off pagers and cellular phones before class, and please keep conversations to a minimum during lectures. I will not keep track if you come to class or not, or if you leave immediately after the quizzes on Fridays. However, I would highly recommend to attend all lectures.

**Disability Policy:** If a student has a disability that will likely require some accomodation by the instructor, the student must contact the instructor and document the disability through the Disability Resource Center, preferably during the first week of the course. Any requests for special considerations relating to attendance, pedagogy, taking of examinations, etc. must be discussed with and approved by the instructor. In cooperation with the Disability Resource Center, course materials can be provided in alternative formats — large print, audio, diskette, or Braille.

The above schedule and procedures in this course are subject to change in the event of extenuating circumstances.