

Introduction to Statistics — Stat 1040, Section 008, Spring 2008

Instructor: Dr. Jürgen Symanzik
Office: Lund 325
Phone: 797-0696
FAX: 797-1822
e-mail: symanzik@math.usu.edu
WWW: <http://www.math.usu.edu/~symanzik/>
http://www.math.usu.edu/~symanzik/teaching/2008_stat1040/stat1040.html

Office Hours: MWF 9:00am – 10:00am and by appointment.

Classes & Rooms:

Section 008: MWF 11:30am – 12:20pm, Mo 1/7 – Fr 4/25, 2008: ENGR 101.

Please note that there are no classes on Mo 1/21 (Martin Luther King Day) and on Mo 2/18 (Washington and Lincoln Day). However, Monday classes will be held on Tu 2/19 (i.e., no regular Tu classes will be held during that week). There are also no classes during Spring Break (Mo 3/10 – Fr 3/14).

Text: *Freedman, Pisani, Purves: “Statistics”, FOURTH Edition, W.W.Norton & Company, 2007.*

Additional Course Material (Workbook): Bound packet of fill-in lecture notes, copies of old exams and old quizzes, solutions to review questions, etc., will be 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 Section 008.**

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 (first 9 quizzes) or on Wednesday (last 3 quizzes): 1/11 (Fr), 1/18 (Fr), 1/25 (Fr), 2/1 (Fr), 2/8 (Fr), 2/22 (Fr), 2/29 (Fr), 3/7 (Fr), 3/21 (Fr), 4/9 (Wed), 4/16 (Wed), and 4/23 (Wed).

The last 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 regular exercises from the book (with solutions at the end of the book), by working through the (special) review exercises from the book (with solutions for the exercises listed below available in our workbook), and by working through the old quizzes from the workbook (with solutions available on the course Web page). Each quiz will be graded out of 20 points. 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. This will also allow you to miss up to two quizzes for whatever reason (sickness, travel, snowed-in ;-) without noticing any consequences for your course grade. Therefore, make–ups will in general not be permitted. However, if you expect to miss more than two quizzes (e.g., as an USU athlete or for musical performances, job and job–related travel, etc.), please contact me as soon as possible and we will work on a make–up solution for you.

2 Midterms: The 2 midterms (and the final exam) will be closed–book and closed–note, but formulas will be provided. You should prepare for the midterms (and the final exam) as for the quizzes, but also work through the old midterms (and final exams) from the workbook (most recent ones) and the course Web page (older ones) — with solutions also available on the course Web page. Each midterm will be graded out of 200 points. Exam policy is *no make–ups* 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 1–10	Fr 2/15, in class
Second Midterm:	approximately Chapters 11–20	Fr 3/28, in class

Final Examination: There is a common final exam for *all* sections of Stat 1040. The exam will be on **Thursday, May 1**, from 1:30pm through 3:20pm. **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 graded out of 400 points. The final will be held in the regular classroom unless you are told otherwise in the last week of classes.

Calculators and Cell Phones: Calculators are required for most quizzes, both midterms, and the final exam. You are not allowed to use a cell phone, pager, headphones or any other electronic device during any of the exams. Please place all electronic devices (other than your calculator) into a bag during all exams and only take them out *AFTER* you have left the room. Calculators must be stand–alone devices and cannot be part of any communication device. Any cheap calculator should be fine for this class.

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 on the review exercises suggested below. These will generally be more challenging than the exercise set problems. Exercises preceded by the letter "S" refer to special review exercises that cover an entire part and not just a single chapter of the textbook. When you are done, check your answers against those available in the workbook. If you are not yet comfortable with the material, you may want to look at some of the remaining problems as well (or work through additional questions from quizzes, old midterms, and old finals from the course Web page).
5. Reread the summary to make sure you now understand the key words.

<i>Chapter</i>	<i>Suggested Review Exercises</i>	<i>Chapter</i>	<i>Suggested Review Exercises</i>
Part I	2 1,4,5,7,9,10,11,12	Part V	16 1,3,4,6,7,9,10
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	2,3,5,12
	9 2,8,11,12	23	2,3,6,8,9,10,11,12
	10 1,2,3,4	Part VIII	26 1,3,5,6,8,10,12(a)
	11 1,2,3,4,6,7,12	27	1,3,7,8,10
Part IV	12 2,3,5,8,9,10,11,12	28	1,2,3,7,8
	13 2,3,6,7,8,9,10,12	29	4,5,7,9
	14 1,4,6,7,8,9,10,11		
	15 S1,S3,S4,S5,S6,S9,S12		

In case you own the **THIRD** Edition of the textbook (and not the **FOURTH** Edition), go to this Web page to access related review exercises and their solutions:

http://www.math.usu.edu/~symanzik/teaching/2002_stat1040/solutions/solutions.html

Courtesy: Please turn off pagers and cell phones before class, and please keep conversations to a minimum during lectures. I will not keep track if you come to class or not. However, I would highly recommend to attend all lectures.

Americans with Disabilities Act: If a student has a disability that will likely require some accommodation by the instructor, the student must contact the instructor and document the disability through the Disability Resource Center, during the first week of the course. Any requests for special considerations relating to attendance, pedagogy, taking of examination, 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.