

Statistics 36-201
Statistical Reasoning and Practice

Summer 1 2005

Class Time: 10:30-11:50AM MWF 235A Baker Hall
10:30-11:50AM TR 140E Baker Hall

Instructor

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Office Hours: 1-2PM MW or by appointment

Grader

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Course Description

This course will introduce students to the basic concepts, logic, and issues involved in statistical reasoning, as well as basic statistical methods used to analyze data and evaluate studies. The major topics to be covered include methods for exploratory data analysis, an introduction to research methods, elementary probability, and methods for statistical inference. The objectives of this course are to help students develop a critical approach to the evaluation of study designs, data and results, and to develop skills in the application of basic statistical methods in empirical research. An important feature of the course will be the use of the computer to facilitate the understanding of important statistical ideas and for the implementation of data analysis. In addition to three lectures a week, students will attend a computer lab twice a week. Examples will be drawn from areas of applications of particular interest to H&SS students.

I will assume that you know basic arithmetic, algebra, and are comfortable navigating the web and using a Windows computer.

Due to the nature of the summer term, this class will move extremely fast. It is of the utmost importance that you keep up with the coursework. If you feel you are lost or falling behind, please come talk to me so we can resolve problems before they get out of hand.

Text

Introduction to the Practice of Statistics, Fourth Edition, by Moore and McCabe. You do not need to bring the book to class everyday although you may find it helpful. Feel free to consult other texts or webpages as well.

Calculators and Software

Calculators are allowed on all homeworks, quizzes, and exams. You must bring your own calculator, they will not be provided for you.

The computer lab portion of the course will introduce you to the MINITAB statistical software package. You are encouraged to use MINITAB for calculations and graphs on written homework as well.

How to access MINITAB software:

1. MINITAB is available on all PCs in the University computer clusters.
2. CMU also has a limited number of MINITAB licenses available for students to download; for details go to: <http://www.cmu.edu/myandrew>
3. You can download a free 30-day demo of MINITAB from <http://www.minitab.com>

You can 'rent' MINITAB for \$26 (5-month copy) at <http://www.e-academy.com/minitab>

Grading Policies

Your course grade will be determined using the following formula:

Class Participation	5%
Labs	10%
Homework Average (drop lowest)	15%
Quizzes (drop lowest)	15%
Exam 1	15%
Exam 2	15%
Final	25%

The scale that will be used for assigning end-of-semester letter grades is as follows:

90-100: A
80-89: B
70-79: C
60-69: D
0-59: F

I reserve the right to change this scale but only in a way that will benefit you.

Class Participation

To be determined by the instructor. If you attend class regularly and participate this will be an easy A.

Labs

Labs will take place on Tuesdays and Thursdays. Labs are intended to reinforce material in lecture as well as giving you experience using Minitab. Assignments will be completed in teams of 2, but every student will be graded individually, according to the following scale:

1 = Completed all or most of the lab, and worked seriously on the questions

½ = Failure to complete most of the lab or to display serious work. Also may be given for tardiness or being off task (i.e. Checking e-mail, surfing the web)

0 = Did not attend

Homeworks

Homework will be due by 5PM on the due date. Homework must be submitted in hardcopy form. Homework can be turned in during class, or after class it can be turned in directly to the grader. Homework turned in after 5PM will not be graded.

Homeworks are expected to be reasonably neat. This class is not only about learning statistical techniques but also presenting statistical ideas in a manner that is easily understandable. Homeworks that are not legible or difficult to follow will be penalized at the discretion of the grader.

I encourage you to work and study together but you are expected to turn in your own work. Copying problems or assignments is unacceptable and will result in a 0 for the assignment in question.

Your lowest homework grade will be dropped when calculating your final grade.

Quizzes

Quizzes will be given at the end of class on Fridays when there is not an exam. The quizzes will be short (approx. 15 minutes) and will cover the material from that weeks' homework. No make up quizzes will be given unless there is an acceptable excuse (i.e. Medical emergency).

Your lowest quiz grade will be dropped when calculating your final grade.

Exams

There will be two midterm exams. You will have a full class period to complete the exam. For each exam you are allowed to bring a scientific or graphing calculator and one standard size sheet of paper with notes. Exams are otherwise closed book and closed notes. No make up exams will be given unless there is an acceptable excuse (i.e. Medical emergency)

Final

The final exam will be cumulative but will be weighted more toward the material covered after the second midterm. You are allowed a calculator and 3 standard size pages of notes.

I think this covers anything but if you are unsure of any aspect of this document or have further questions do not hesitate to ask. Welcome to 36-201, I hope you have an enjoyable term.