

Stat 200: Elementary Statistics (Spring 2008)

Sections 10 - 12: Course Syllabus

COURSE DESCRIPTION

Statistics is the art and science of using sample data to make generalizations about populations. The topics covered in this course include:

- methods for collecting and summarizing data
- methods for evaluating the accuracy of sample estimates
- techniques for making statistical inferences

Students of statistics -- researchers, government agencies like the Census Bureau and the Bureau of Labor Statistics, companies like the pharmaceutical and drug industry, etc. -- make extensive use of the computer in applying statistical methods to their problems. So will you. You will have lots of practice in analyzing data from a variety of areas and should be well prepared for problem-solving involving statistics in your college courses, as well as gaining an understanding of the role of statistics in your daily life.

COURSE WEB SITE

The course web site, ANGEL, will contain important course materials, so you should plan to access the site regularly. In particular, it contains readings and homework assignments and contain links to datasets for use in the computer labs.

REQUIRED RESOURCES

- The textbook, **Mind on Statistics**, 3rd Edition, by Utts and Heckard. It can be purchased at the usual bookstores.
- A *simple* (low-cost) scientific calculator (for exams)—to do square roots and arithmetic.

COURSE FORMAT

There will be Individual and Group Readiness Quizzes (RAQs). These will be given in the labs on pre-announced dates. The Individual RAQs will consist of 20-25 multiple choice questions. The Group RAQ will be on the same set of questions and be given immediately after the Individual RAQ. About half of the items will be on previously discussed topics and the other half on new material not previously covered.

One lecture and two labs are scheduled each week; portions of a lab may be devoted to lectures as needed.

In the computer labs you will be working on 'activities' in pairs or small groups to apply what was learned in the readings. RAQs, Quizzes, and Exams will be based to a large extent on the concepts and applications covered in activities, in addition to those covered in the text.

Short quizzes will be given in most lab meetings. They will be based on topics covered in the labs and assigned readings specified in the weekly class schedules.

Some labs will be reserved for group projects involving the integration of course content, such as evaluating scientific articles or completing group projects concerned with data analysis and interpretation. Some of the labs may be used to provide assistance with homework problems. They may also be used to get answers to questions about the reading assignments prior to the quizzes. They are not designed as 'lectures' or to solve homework problems, but rather to give you feedback on the material.

SUMMARY OF COURSE REQUIREMENTS

What?	When	Points	Percent?
Term Exam	Date to be determined.	100	10%
Exam	See University Schedule	200	20%
Projects (3)	Dates to be determined.	160	16%
Individual RAQs (4):	Dates to be determined-- Drop lowest 1 of 4	200	20%
Group RAQs (4)	Dates to be determined-- Drop lowest 1 of 4	100	10%
Homework (Handed in)	Each week--between 12-14--Drop lowest 2	60	6%
Homework (Quizzes)	Each week--between 12-14--Drop lowest 2	60	6%
Quizzes	1 or 2 per week – Count 15 highest	120	12%
Total		1000	100%

THE DETAILS ABOUT COURSE REQUIREMENTS

Business Assessment Quizzes (RAQs)

There will be four Readiness Assessment Quizzes during the semester. You should refer to the course web site to determine when they will take place and what will be covered on each of the RAQs.

RAQs, which will contain only multiple-choice and true-false questions, will be conducted as follows:

About 25% of the questions will be on material that you have been asked to read previously and 75% on previous material discussed in LGMs and labs, and one or two questions related to homework. You are expected to read and review topics before each quiz so that you will understand the basic concepts, and the questions on the RAQs will determine how well you understand those concepts. Each student will take the test individually, with responses on a Scantron (bubble) sheet. Students will then take the same quiz but will be permitted (encouraged) to confer with members of a 'group' (to be established in the labs) on answers to the questions. Students will again submit their answers on a bubble sheet.

At the end of the semester, each student will receive an Individual RAQ (IRQ) Grade and a Group RAQ (GRQ) Grade.

Group Projects

Some of the class meetings in the course will be reserved for group project work involving the integration of course content, such as evaluating scientific articles, analyzing experimental data, and discussing case studies. Groups will be given time to work on the projects during the labs. For each assigned project, each group will be asked to submit one written report. All members of groups will receive a score. For some projects individual responses may be required in addition to the group report.

Homework

Collectively, it is anticipated that there will be about 11 or 12 homework assignments to be handed in during the semester, plus a 'special assignment' that will count as two assignments. Each homework will be graded on a 10 point basis. At the end of the semester, the 2 lowest scores will be dropped in calculating an overall 'Homework Score'. HW questions may be chosen for inclusion on RAQs.

Academic Integrity

Academic integrity, which is the pursuit of scholarly activity free from fraud and deception, is an educational expectation at Penn State. We will follow the guidelines found in Section 49-20 of the University Faculty Senate Policies for Students.

COURSE GOALS

At the end of this course, you should be able to:

- Understand the reasoning by which findings from sample data can be extended to larger, more general populations.
- Critically evaluate the results of scientific studies.
- Design, conduct, and analyze a scientific research study.
- Read statistical summaries.
- Analyze data using statistical software.
- Study and understand examples and applications from a variety of fields.
- Learn independently and work cooperatively.

FINAL GRADE

Final Grade	Cut Points	Cut Percents
A	930 and 450 on Exams/Individual RAQs	93
A-	900 and 435 on Exams/RAQs	90
B+	880 and 420 on Exams/RAQs	88
B	820 and 405 on Exams/RAQs	82
B-	800 and 390 on Exams/RAQs	80
C+	770 and 375 on Exams/RAQs	77
C	700	70
D	600	60
F	below 600	below 60

Lower bounds could be lowered if the course work is judged to be different than in previous semesters. This judgment will be made in consultation with the other Stat 200 instructors after all of the course work is graded.

COURSE RULES

Students will adhere to the following:

- Make-up policy. Generally, no "make-ups" will be given for missed Lab quizzes. For RAQs and Midterm Exams you must submit documentation of reasons for missing them.
- Homework assignments **will not be accepted after the announced due date** unless a change is made.
- Students are responsible for all announcements and supplements given within any lecture.
- Cheating will be punished in accordance with University guidelines.

IMPORTANT COURSE ADMINISTRATION DATES

Please note that as a student registered for this course, you are responsible for taking care of certain administrative details *before* the following university-wide deadlines:

Registration Deadline	January 13
Drop/Add period	January 14-23
Drop in Luther King Day—No Classes	January 21
Registration & Drop Period Begins	January 24
Exam Conflict-Filing Period	February 18-March 2
Spring Break—No Classes	March 10-14
Drop Deadline	April 11
Classes End	May 2
Exams	May 5-9
