1 General Information

Instructor:  Kate Cowles
            374 SH
            335-0727
            kate-cowles@uiowa.edu

Office hours:  T  1:30 - 2:20 p.m.
              W  12:30 - 1:20 p.m.
              Th  1:30 - 2:20 p.m.
            Please feel free to make appointments to see me outside of office hours,
            and to send me questions by e-mail.

Department: Statistics and Actuarial Science, 241 SH
DEO:        Dr. Dale Zimmerman, 241 SH, 335-0712
            dale-zimmerman@uiowa.edu

Lectures:   M, W, F  10:30-11:20  140 SH
Lab:        Will replace 1 lecture every other week  41 SH
            Handouts, homework assignments, datasets, etc.
            will be posted on the web page for you to download.

            2007, Freeman


available online through http://infohawk.uiowa.edu

2 Course goals and objectives

Through hands-on experience with real data from a wide variety of applications, students
will learn basic methods required for data analysis and interpretation. The emphasis will be
on formulating questions, choosing appropriate statistical techniques for a given problem,
verifying whether the assumptions behind the techniques are met by the dataset, drawing
appropriate conclusions from the analysis, and communicating the results. Students will
learn the basics of SAS, a statistical software package that is widely used in business,
industry, government, and research.

22S:30 is approved for General Education in the Mathematical Disciplines category.
3 Evaluation of students

3.1 Homework

In general, homework will be assigned each Fri. and will be due in class the following Fri. Exceptions to this schedule will be announced in class.

Show your work when solving written homework problems. For computer problems, turn in printouts of your commands or programs and their output.

You are encouraged to study with others. However, if you do work with others on homework assignments, please: a) write up your own assignment and make sure you completely understand all solutions that you submit, and b) write the names of the others in your study group on your assignment.

Late homework is accepted only as required by university policy, i.e. due to “illness, mandatory religious obligations, or other unavoidable circumstances or University activities.” Documentation must be provided.

3.2 Attendance

Attendance is required and roll will be taken on random dates. Please notify the instructor in advance if you have to absent from class. If you are absent due to illness, please provide documentation when you return.

3.3 Exams

There will be three 1-hour midterm exams and one comprehensive 2-hour final. The midterms will be given in the classroom during a regular lecture period. Students may bring one 8-1/2 x 11 in. sheet of paper with notes to each midterm, and may bring three sheets to the final exam.

| Midterm 1 | week of 2/21 |
| Midterm 2 | week of 3/28 |
| Midterm 3 | week of 4/25 |
| Final exam | Tuesday, 5/10, 12:00 noon |

Missed exams may be made up only with documentation of reasons required by university policy (see “Late Homework” above).

3.4 Projects

Students will work in groups of three to carry out projects involving application of the statistical methods covered in the course to problems of their own choosing. We will be happy to work with you at each stage of your project. Each group of students will:

- Formulate a research question
• Obtain a dataset that can be used to address this question; you may
  – collect your own data,
  – obtain a dataset from the web, from a book, from an instructor in your major
    field, or from some other source, or
  – see us for a choice of datasets

• determine an appropriate method of analysis

• use SAS to check the data

• use SAS to carry out the analysis

• report and interpret the results

We will expect more sophisticated projects from graduate students and other students
registered for 22S:105.

Projects will be carried out in three phases. Please meet with either one of us at least once
while you are working on each phase.

• Project proposal (due 4/04) This is a detailed description of what you plan to do,
  including question(s) to be addressed, dataset to be used, methods to be applied.
  Also specify your intended method of presentation for the final project. (See below.)

• Project interim report (due 4/18) This informal report will indicate that your project
  is “on track.” All computing should be done. Turn in code and output, and a brief
  summary (hand-written is O.K.) of what the results mean and what remains to be
  done.
  In addition, include an itemized list of what specific tasks each member of the project
  team has done to date on the project.

• Project presentation (must be posted or submitted by 5/02)
  Projects must be finalized in a form that can be shared with the entire class, such as:
  – posting a document on the course web page
  – preparing a poster
  – giving an oral presentation with overheads, slides, or computer images

  Posters and oral presentations will be given in class during the week of 5/02. We will
  read the documents posted on the course web page in lab on Wed, 5/04.

Along with the final project, the team must turn in an itemized list of each person’s con-
tributions to the project.
3.5 Grading

The course components will be weighted as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>10%</td>
</tr>
<tr>
<td>Midterms</td>
<td>42% (14% each)</td>
</tr>
<tr>
<td>Project</td>
<td>20%</td>
</tr>
<tr>
<td>Final</td>
<td>28%</td>
</tr>
</tbody>
</table>

An A+ represents an extraordinary level of achievement and is rarely awarded.

4 Extra Help

The Statistics Tutorial Lab, located in 202 CC, gives free tutorial assistance to students in 22S:2, 8, 25, and 39. In addition, several graduate students have volunteered to independently tutor students in various 22S: courses at mutually arranged times and fees. Please check the web site www.stat.uiowa.edu/courses/tutoring.html for tutoring details.

5 College of Liberal Arts and Sciences: Policies and Procedures

5.1 Administrative Home of the Course

The College of Liberal Arts and Sciences is the administrative home of this course and governs matters such as the add/drop deadlines, the second-grade-only option, and other related issues. Different colleges may have different policies. Questions may be addressed in 120 Schaeffer Hall or see the CLAS Student Academic Handbook: www.clas.uiowa.edu/students/academic_handbook/index.shtml

5.2 Electronic Communication

University policy specifies that students are responsible for all official correspondences sent to their University of Iowa e-mail address (@uiowa.edu). Faculty and students should use this account for correspondences. (Operations Manual, III.15.2. Scroll down to k.11.)

5.3 Accommodations for Disabilities

A student seeking academic accommodations should first register with Student Disability Services and then meet privately with the course instructor to make particular arrangements. See www.uiowa.edu/~sds/ for more information.
5.4 Academic Fraud

Plagiarism and any other activities when students present work that is not their own are academic fraud. Academic fraud is a serious matter and is reported to the departmental DEO and to the Associate Dean for Undergraduate Programs and Curriculum. Instructors and DEOs decide on appropriate consequences at the departmental level while the Associate Dean enforces additional consequences at the collegiate level. See the CLAS Student Academic Handbook.

5.5 Making a Suggestion or a Complaint

Students with a suggestion or complaint should first visit the instructor, then the course supervisor, and then the departmental DEO. Complaints must be made within six months of the incident. See the CLAS Student Academic Handbook.

5.6 Understanding Sexual Harassment

Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community have a responsibility to uphold this mission and to contribute to a safe environment that enhances learning. Incidents of sexual harassment should be reported immediately. See the UI Comprehensive Guide on Sexual Harassment at www.uiowa.edu/~eod/policies/sexual-harassment-guide/index.html for assistance, definitions, and the full University policy.

5.7 Reacting Safely to Severe Weather

In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if necessary. The class will continue if possible when the event is over. (Operations Manual, IV.16.14. Scroll down to e. h. and i.)

5.8 Missed Exam Policy

University policy requires that students be permitted to make up examinations missed because of illness, mandatory religious obligations, certain University activities, or unavoidable circumstances. Excused absence forms are required and are available on the Registrar website. www.registrar.uiowa.edu/forms/absence.pdf

5.9 Final Examinations

An undergraduate student who has two final examinations scheduled for the same period or more than three examinations scheduled for the same day may file a request for a change
Final exams may be offered only during finals week. No exams of any kind are allowed during the last week of classes. Students should not ask their instructor to reschedule a final exam since the College does not permit rescheduling of a final exam once the semester has begun. Questions should be addressed to the Associate Dean for Undergraduate Programs and Curriculum.

6 Course schedule

This approximate schedule will be updated as needed during the semester.

1/19 - 1/21 Chapter 1, 2
1/24 - 1/28 Chapter 3
lab 1/26
1/31 - 2/04 Chapter 4, 5
lab 2/02
2/07 - 2/11 Chapter 5, 8
2/14 - 2/18 Chapter 9
lab 2/16
2/21 - 2/25 Chapter 10-11, midterm 1
2/28 - 3/04 Chapter 14, 15
lab 3/02
3/07 - 3/11 Chapter 15, 16
3/14 - 3/18 Spring Break
3/21 - 3/25 Chapter 16, 18
lab 3/23
3/28 - 4/01 Chapter 18, midterm 2
4/04 - 4/08 Chapter 19, 20
Project proposals due 4/04
lab 4/06
4/11 - 4/15 Chapters 20, 21, 23
4/18 - 4/22 Chapter 23, 25
Project interim reports due 4/18
lab 4/20
4/25 - 4/29 Chapter 24, midterm 3
5/02 - 5/06 chapter 26, project presentations
Projects due 5/02
lab 5/04
5/10 noon Final exam