Statistics 431: Statistical Inference
Syllabus, Fall 2010

Professor:

Sham Kakade
skakade@wharton.upenn.edu
http://stat.wharton.upenn.edu/~skakade
467 Jon M. Huntsman Hall
Office hours: Tue 11-12.

Teaching Assistant:

James Piette
jpiette@wharton
433 Jon M. Huntsman Hall
Office hours: Thurs 10-12

Course description:

This course is about making decisions under uncertainty using statistical methods. The topics include estimation, confidence intervals, hypothesis testing, single and multiple linear regression, one-way and two-way analysis of variance, variable selection, and categorical data analysis.

Interpretation of the results and analysis of assumptions is an important part of the course. Statistical computing package will be extensively used to carry out the computations. However no special emphasis will be made on the details of computations.

Course Materials and Text:

The primary source of material will be presented in the notes, which will be posted after each class. Many homeworks will be assigned from:

• Stine & Foster, Statistics for Business.

These books also provide good supplementary reading.

This site was designed by a Penn undergrad as a senior project and might be helpful in finding cheaper priced books:


Course homepage and Webcafe:

Course homepage:

http://stat.wharton.upenn.edu/~skakade/courses/stat431.inf

Statistics 431 is using webCafe. You can gain access by going to:

https://webcafe.wharton.upenn.edu/stat/

and following the link to your section. All materials including announcements, lecture notes, homework, solutions, etc. will be available on our webcafe. You will be able to monitor your grade entries throughout the semester.

An important feature of webCafe is the discussion board where everybody can place questions and comments. We will be using it extensively for answering your questions about homeworks, exams and scheduling. You are urged to go there first to see whether your question has already been asked and answered, and, if not, to place your question so it can be answered once for everybody.

Note for non-Wharton students: If you do not have a Wharton computing account, you will need to establish one to access the website. The account also provides access to the computing labs in Wharton and to the intranet. To get an account, on or after the first day of classes, go to:

http://accounts.wharton.upenn.edu

After you have obtained your account, allow up to 12 hours for activation. Wharton students and students who have recently taken a Wharton course have existing accounts.

Stat Lab:

The Stat Lab provides help with statistics to anybody on campus. It is located in F96 JMHH and is open on days when classes are in session. Staffing and hours will be posted.
Statistical computing package:

We’ll be using JMP version 8, available in the Wharton Computer Labs, F75/F80 Jon M. Huntsman Hall (Wharton account required:

http://accounts.wharton.upenn.edu)

Individual copies are also available for purchase at:

http://upenn.onthehub.com

Note that the licenses are of different lengths at differing prices (e.g. 3 years, 6 month, and 3 month, all at different prices). Please read system requirements carefully before making a purchase to make sure that it will work on your computer. When buying, make sure that you are downloading a correct (Windows/Mac) version: there were cases when people bought a wrong version.

You may also use R, an open-source statistical software that is available from The R Project for Statistical Computing.

Grading:

- Homework assignments: 20% (lowest score excluded)
- Midterm: 30%
- Final: 50%

Exams:

- In-class midterm: Oct 25.
  No make-up.
- Final: At university scheduled time. No make-up.

Homework sets:

- There will be homeworks assigned weekly with a few exceptions.
- Homeworks will be assigned on webCafe and will usually be due a week later on Friday by 4p.
- Problems involving computer calculations should be worked using JMP or R.
- No extensions to the due date will be given. However, the lowest homework assignment score will be omitted from the final grade calculation. Unsubmitted work counts as a zero score. Back up your work frequently.
• Handwriting is not accepted.

• Hand in your homework solutions always in both of the following ways:
  – Hand in a stapled paper copy of your solutions in the Statistics Department
    (JMHH, 4th floor) in the box marked with your section (not in class and
    not to the TAs), AND
  – Submit your file electronically via Assignment Submission on webCafe.

For re-grades and missing claims, there must be an electronic copy submitted
before the deadline.

• Your solutions must have on the cover page your: name (as it appears on web-
  Cafe), section, school (Wharton/non-Wharton), and year.

• Graded homeworks will be returned in the same boxes in the Statistics Depart-
  ment.

• Scores for homeworks are finalized one week after the graded copies are handed
  back. Thereafter there will be no changes and no re-grading. Do not delay
  checking your graded homeworks to the end of the semester.

Homework Policy:

• Homework is designed to teach, and you are encouraged to seek help from the
  instructor and the TAs if you have questions.

• Assignments are to be completed individually. You may discuss homeworks with
  the other students in this course (any section), but not with students who are not
  currently enrolled in Statistics 431. You may also ask the instructors and the TAs
  if you need help, but you must attempt the questions in JMP or R and submit
  your written solution by yourself. Although you may discuss the problems with
  each other, you should not read each others solutions. Do not copy verbatim. If
  you use material from outside this class, it must be referenced in your solution.
  Honor code applies to these instructions.

• On the HW, please state the names of all people you have discussed problems
  with. Remember, you must write out each solution entirely on your own, and
  (more importantly) believe that you understand everything you have written.

• In writing your solutions, make them complete. You should show your work and
  explain your conclusions clearly and precisely.

• All problems should be solved using JMP, if necessary. You may use R as well.