

UPP 503: Data Analysis for Planning and Management, Spring 2007

Time: Monday and Wednesday: 1:00-2:30 pm
Class Room: 2232 2ADH

Instructor: Saurav Dev Bhatta Office: 231 CUPPA HALL
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Office Hours: Tuesday 1-3 pm

Course Description

This course introduces students to data analysis techniques most commonly used in urban planning. Topics to be covered include: presentation of data, measure of central tendency and dispersion, probability concepts, sampling, hypothesis testing and confidence intervals, analysis of categorical variables, and linear regression. Students will also learn to use the statistical computer package to clean, manage, and analyze data.

Text

Alan Agresti and Barbara Finley. *Statistical Methods for the Social Sciences, Third Edition*. Prentice Hall, 1997 (required) ISBN: 0-13-526526-6

In addition, handouts will be given to supplement the text when necessary.

Blackboard CourseInfo

CourseInfo is basically a Web site dedicated to this course. I will post assignments, answers, and announcements on the Blackboard CourseInfo.

Communication

I will use the e-mail feature of CourseInfo to make important announcements regarding assignments and exams. To be included in the CourseInfo e-mail list, you must obtain an UIC e-mail account (with "uic.edu" domain) or if you are using an off-site account, please work with the ACCC to set it up as your UIC account before the first day of the class.

Requirements

- The course will be taught using a lecture format. You will be given weekly homework problems for practice—but these will not be graded. Grades will be based on class participation, quizzes, exams (a midterm and a final), and computer assignments.

Quizzes: (2 x 8 = 16%)—on 2/14 and 4/11

Midterm exam (20%)—on 3/7

Final exam (29%)—TBA

Computer Assignments (2 x 15 = 30% - 2 submittals)—Due on 3/21 and 5/2

Attendance and class participation (5%)

- You are encouraged to form study groups; however, assignments must be done and submitted individually.

- Assignments should be submitted at the beginning of class on the due date. Late submittals **will not be** accepted. If you have to miss a class, submit the assignment in my mailbox **before** the class time.
- You will need a hand calculator with a square root function and power functions. Your first priority for choosing a calculator should be the ease of use.
- Please turn off your cell phones before entering the classroom.

Study Habits

Just like sports, mathematics is learned through practice and repetition. In fact, there is some evidence to suggest that some very smart people have trouble with mathematics in school because it is the first subject where natural intelligence is not enough. In this course, you are expected to spend five to ten hours every week to "practice" statistics.

I have seen two common mistakes that prevent students from doing well in this course. The first is that they try to digest everything by reading textbooks. In this course, you will need to read the textbook and also do the problems to practice the concepts you learn from reading. Reading the textbook for hours until you completely understand the content before doing problems will not help you do well in this course. You should combine reading and doing the problems. Many concepts in statistics are unintuitive, and are difficult to understand without concrete example in front of you. I have chosen this textbook mainly because it contains a lot of good examples. They should provide "recipes" you can use to solve problems. I will also provide plenty of examples in the class. The key to doing well in this course is to use the problems and reading assignments in combination to help you understand the concepts.

The second common mistake is to fall behind by procrastinating. You will find this course to be relatively easy (although time consuming) as long as you stay on top of the materials presented each week. However, once you fall behind, it will be difficult, if not impossible, to catch up. If you have a problem keeping up with the course, please talk to me or the TA before it is too late. Personal attention is a luxury we can provide at graduate level and we are here to help.

Tentative Schedule

Date	Topic	Reading
Week 1 1/15, 1/17	Jan 16, Martin Luther King day, no class Introduction, different areas of statistics, scale	Ch. 1, 2
Week 2 1/22, 1/24	Sampling and measurement, math review, tables and graphs	Hand out, Ch. 3.1, 3.2
Week 3 1/29, 1/31	Tables and graphs, SPSS	
Week 4 2/5, 2/7	Measures of central tendency and variation	Ch. 3.3, 3.4, 3.5, 3.6
Week 5 2/12, 2/14	Probability and sampling distributions Quiz # 1 on 2/14	Ch. 4.1, 4.2, 4.3
Week 6 2/19, 2/21	Probability and sampling distributions (cont.)	Ch. 4.4, 4.5
Week 7 2/26, 2/28	Confidence intervals, sample size requirement	Ch. 5.1, 5.2, 5.3, 5.4, 5.6
Week 8 3/5, 3/7	Wrap up Ch. 5, Midterm exam on 3/7	
Week 9 3/12, 3/14	Hypothesis testing (part 1)	Ch. 6.1, 6.2
Week 10 3/19, 3/21	Hypothesis testing (part 2) Computer assignment 1 due 3/21	Ch. 6.3, 6.4
Week 11 3/26, 3/28	Spring Break, no class	
Week 12 4/2, 4/4	Comparison of two groups	Ch. 7.1 – 7.4
Week 13 4/9, 4/11	Analyzing categorical variables Quiz # 2 on 4/11	Ch. 8.1, 8.2, 8.3, 8.4
Week 14 4/16, 4/18	Analyzing categorical variables, Logic of inquiry	Ch. 8.5, 8.6, 8.8, Handout, Ch. 10
Week 15 4/23, 4/25	Linear regression	Ch. 9.1 – 9.4
Week 16 4/30, 5/2	Inference, multiple regression Computer assignment 1 due 3/21	Ch. 9.5 – 9.7, Ch. 11

Computer assignment 1 due 3/21 (Wed)

Computer assignment 2 due 5/2 (Wed)

Final Exam: TBA