UCLA, Department of Statistics
Winter 2011

Statistics 112: Statistical Reasoning for Social Sciences

Classroom:	Franz Hall 2258A (Note change as of Jan 19)
Time:	MWF 3:00pm - 3:50pm
Instructor:	Mine Çetinkaya
Email:	*mine@stat.ucla.edu*
Office:	Math Sciences 8141
Office hours:	Mondays and Fridays 1:45pm - 2:45pm or by appointment
Virtual office hours:	Thursdays 7:00pm - 8:00pm
Co-instructor:	Rob Gould
Email:	*rgould@stat.ucla.edu*
Office:	Math Sciences 8945
Office hours:	Fridays 11am - 12pm (starting January 14)
TA:	Jason Somerville -*somerville@stat.ucla.edu*
Required Textbook:	Statistics: From Data To Decision, Watkins, Scheaffer, and Cobb Wiley, 2^{nd} Edition, 2009.
Clicker:	Turning Point Response Card Rf Lcd Clicker
Calculator:	You are required to have a calculator and to bring it to every lecture, discussion, and exam. We will not be providing calculators and you will not be allowed to borrow one from another student or use your phone during an exam.
Course Website:	Our class "business" will be conducted through the Moodle course management system: *http:// ccle.ucla.edu* . You should log in immediately. All assignments and announcements will be posted to this site, and you should check it daily. We will also use Moodle for virtual office hours.
Midterm:	Friday, February 11 - 3:00pm - 3:50pm
Final Exam:	Wednesday, March 16 - 11:30am - 2:30pm
Holidays:	Martin Luther King, Jr. Day - Monday, January 17 Presidents Day - Monday, February 21

Tips for success:

1. Read the assigned chapters before a new week begins. And then read again after the lectures.
2. Be an active participant during the lectures, discussion sections, and labs.
3. Ask questions - during class or office hours, or by email. Ask me, your TA, and/or your classmates.
4. Do the homework - start early and make sure you attempt all questions.
5. Do not procrastinate - don't let a week go by with unanswered questions as it will just make the following week's material even more difficult to follow.

Lectures:

We will have three lectures a week, Mondays, Wednesdays, and Fridays. In order to be able to keep up with the pace of the course and not fall behind it is highly recommended that you attend all the lectures.

You can download podcasts of the lectures at *http://www.oid.ucla.edu/webcasts/courses/2010-2011/2011winter/stats112-1* . Note that the podcasts are meant as a supplement and not a replacement for attending lectures.

Clickers:

We will be using clickers to gauge your understanding of the material throughout the class. You are required to bring your clicker to class every day. Please register your clicker by following the link on Moodle (under Resources) so that you can get participation credit for your responses. I will also be using the clickers to take attendance with a question during the first five minutes of class.

Virtual office hours:

Each week I will be holding virtual office hours on Thursdays between 7pm-8pm. During these times I will be available for answering your questions in a Moodle chat room. You are welcomed (and encouraged) to answer each other's questions. Your participation in these will count towards your class participation grade. You will also be able to view the chat transcripts afterwards. Note that during Week 2, on January 13, virtual office hours will be held between 12pm-1pm.

Discussion Sections and Labs:

Section	Days	Time	Classroom
1A	W	12:50am - 12:50am	Bunche 3170
	F	11:00am - 12:20am	Boelter 9413
1B	W	1:00pm - 1:50pm	Royce 160
	F	1:00pm - 1:50pm	Boelter 9413

In the discussion section your TA will focus more on problem solving related to the concepts that we go over in lecture. It is recommended that you attempt the homework problems before attending section and be active participants. Your TA will also solve questions that most students missed on the Moodle quizzes therefore you are advised to print out a copy of your Moodle quiz and bring it to discussion.

In the lab you will learn to analyze data by using a statistical analysis software called `R` (*http://cran.stat.ucla.edu*) with a graphical user interface called `Deducer` (*http://www.deducer.org*), both of

which are free. During the lab your TA will demonstrate analyses and lead you through activities. For the lab assignments you will be asked to run similar analyses by yourself. There will be a total of four lab assignments, they should be typed and stapled. The lowest lab score for each student will be dropped.

You may use the Boelter Lab while working on your assignment but since the software we will be using is open-source, you can also download it on your personal computer.

Moodle Quizzes:

Moodle quizzes are online quizzes designed to help you find any problem areas, and to help me judge how to pace the course. In order to reach these objectives you must take the quizzes by yourself and revisit the concepts underlying the questions that you miss.

You can take the quizzes from any computer. Moodle does not allow you to save your quiz and come back to finish it later. If you try to do so, you will lose your work and will not get another attempt.

There will be a total of seven graded quizzes and the lowest quiz score for each student will be dropped. There will also be two additional review quizzes, one during the first week and one during the last week. These quizzes are optional and will not be graded however you are strongly encouraged to try them.

Quizzes will open on Friday at 6:00 pm and close on Monday at 8:00 am. There will be no make-ups for Moodle quizzes, if you miss one you will receive a grade of zero for that quiz.

We will discuss common problem areas from the quizzes during Monday's lecture and you will also have a chance to go over the quizzes during the Wednesday discussion section.

Homework:

Homework will be assigned weekly on Moodle. The objective of the homework assignments is to help you develop a more in-depth understanding of the material covered in the lectures. The homework assignments are due at the beginning of Friday's lecture. Your homework must be stapled, legible, and contain your name and discussion section number. There will be seven homework assignments, and the lowest homework score for each student will be dropped.

Each week a number of problems will be selected and graded for accuracy. This will count for 70% of the grade. The remaining 30% of the grade is assigned to trying all of the problems in the homework. Even though your answers to those problems may not be correct or complete, you can still get 30% of the grade simply by attempting every question assigned.

Note that some of the problems have answers in the back of the textbook, so you should use those to check your work as you go. However you must show your work - full credit will not be given to answers that do not show work.

Late homework will not be accepted. If you cannot make it to class the day homework is due, please email me to make arrangements to drop off your homework earlier. There will be no make up homework assignments.

Articles:

You will be asked to work in groups of 4-5 students to read a journal article. You will discuss the article during a discussion section and office hours and turn in a written report answering the questions on the article.

Exams:

The midterm is on Friday, February 11, 3:00pm - 3:50pm and will cover everything we covered up to that date. The final exam is a comprehensive 3 hour exam that will be administered on Wednesday, March 16, 11:30am - 2:30pm. The final exam date cannot be changed. No make-up exams will be given. If you cannot take the final exam on that date you should drop this class.

You are allowed to bring one sheet of notes ("cheat sheet") to the midterm and the final. This sheet must be no larger than $8\frac{1}{2}" \times 11"$ and must be prepared by you.

Grade Breakdown:

Homework (6)	15%	Midterm	20%
Moodle Quizzes (6)	10%	Final exam	35%
Labs (3)	10%	Participation	3%
Article	7%		

Grades will be curved to establish a final letter grade.

Policies:

- Your homework is due at the beginning of Friday's class, late homework will not be accepted.
- There will not be any make-ups for any of the Moodle quizzes, midterm, or the final exam.
- All regrade requests on homework assignments and exams must be discussed with me in a timely manner. You may discuss grading of the labs with your TA, however the TA may direct you to me if the issue is not easily resolved.
- Any instances of academic dishonesty will be taken very seriously. At a minimum you will lose all points for that particular assignment. Additionally, there may be penalties to your final class grade along with being reported to the Dean's Office. Please review the Student Guide to Academic Integrity at *http://www.deanofstudents.ucla.edu/StudentGuide.pdf* .

Week	Date	Chapters	Topics	Activities	Due Date
1	1/3 - 1/9	1 2	Statistical reasoning: randomization tests Exploring distributions: visualization, center, spread, summary statistics, the Normal distribution	Review MQ	Friday 1/7 - Monday, 1/10
2	1/10 - 1/16	4 7	Sample surveys and experiments: sampling, experimental design, causal conclusions Sampling distributions: means and proportions	HW 1 MQ 1	Friday, 1/14 Friday 1/14 - Monday, 1/17
3	1/17 - 1/23	 7 8	**No class on Monday, January 17** Sampling distributions (cont.) Inference for a proportion: confidence intervals (CI), hypothesis testing (HT), errors, power of a test	Lab 1 HW 2 MQ 2	Wednesday, 1/19 Friday, 1/21 Friday 1/21 - Monday, 1/24
4	1/24 - 1/30	8 9	Inference for a proportion (cont.) Inference for the difference of two proportions: CI & HT	HW 3 MQ 3	Friday, 1/28 Friday 1/28 - Monday, 1/31
5	1/31 - 2/6	10 11	Inference for a mean: CI & HT Inference for the difference of two means: CI & HT	Lab 2 HW 4 MQ 4	Wednesday, 2/2 Friday, 2/4 Friday, 2/4 - Monday 2/7
6	2/7 - 2/13	14	One-way ANOVA Review	**Midterm** HW 5	**Friday, 2/11** Friday, 2/11
7	2/14 - 2/20	3 13	Relationship between two quantitative variables: scatterplots, correlation, regression Inference for regression : CI & HT of slope, model fit	MQ 5 Group assignments for article	Friday, 2/18 - Monday, 2/21
8	2/21 - 2/27	 13 15	**No class on Monday, February 21** SLR Multiple regression: 2+ numerical and/or categorical explanatory variables	Lab 3 HW 6 MQ 6	Friday, 2/25 Friday, 2/25 Friday, 2/25 - Monday, 2/28
9	2/28 - 3/6	15 12	MLR Chi-square tests: goodness of fit, homogeneity, independence	Article discussion MQ 7	During Wednesday section, 3/2 Friday, 3/4 - Monday, 3/7
10	3/7 - 3/13	12	Chi-square tests Review / catch-up	Article report Lab 4 HW 7 Review MQ	Monday, 3/7 Wednesday, 3/9 Friday, 3/11 Friday, 3/11 - Wednesday 3/16
11	3/14 - 3/20	**Final Exam - Wednesday, March 16 - 11:30am - 2:30pm**			