Psy 412/512, Fall 2008

CRN 14617 (412) /14630 (512), 4 credits

Tues/Thurs, 4:00-5:20 in 246 Gerlinger Hall, Lab Fri 9:00-9:50 in 180 Straub

Instructor	Office	E-mail	Phone	Office Hours
Holly Arrow	357 Straub	harrow@uoregon.edu	346-1996	Mon 10:00-11:00; Wed 8:00-9:00
Karyn Lewis	408 Straub	klewis3@uoregon.edu	346-4852	Mon 12:30-1:30; Tues 9:30-10:30

Class Blackboard site: http://blackboard.uoregon.edu/

Course Goals:

This course is designed to sharpen your quantitative and analytical reasoning skills. It should improve your ability to identify patterns in data, relate these patterns to substantive issues about the topic under investigation, and communicate your results and your interpretation in writing. By the end of the course you should be able to:

1. Generate a plan for data analysis that is appropriate to your research questions and the structure of the data
2. Execute your data analysis plan using statistical software
3. Understand and summarize the results of the statistical tests
4. Interpret the results in light of your research questions
5. Clearly communicate what you did, what you think the results mean, and why

Course Description: We will cover the concepts and methods of descriptive and inferential statistics at an intermediate level with a focus on correlation and regression as the underlying statistical machinery. Topics include ANOVA, ANCOVA, several varieties of regression, log-linear models & logistic regression. By the end of the course, you will have some level of understanding of each of these methods. The level will vary across topics, which is fine; statistical training is a lifelong process. We will treat you as colleagues in training and see our roles as guides, coaches, and fellow travelers. The course is designed to be both difficult and rewarding. You will not understand everything, and that is okay! We are still learning, too ☺

Graduate students taking the course as 512 will have some additional responsibilities: they will periodically be asked to explain concepts from the readings to the class, the first part of

their homework should both summarize AND critique the readings, and their final exam will have some different requirements than the 412 final.

Learning Adjustments: Contact Holly right away if you have special needs (confirmed by the Academic Learning Center) that may require adjustments for you to learn/understand the material effectively. Disability Services web site: http://ds.uoregon.edu/.

Class Requirements and Activities:

1. Readings. The primary text is Howell, D. C. (2007), *Statistical Methods for Psychology* (6th edition), which is also used in the psych department's graduate-level statistics course. Our course covers a different subset of chapters, and in a different order. The earlier edition (5th) does not seem to be dramatically different so you can use that instead if you can find it cheap. Supplemental readings will be available as PDFs via the course Blackboard site.

2. Participation. Missing class may leave you confused, and missing lab will make it VERY difficult to complete the homework correctly. Do not expect the instructors to repeat material they already presented in class; office hours are best used for review and discussion of material after doing the reading and attending lecture, and for help with homework. Slides from lecture will be posted on Blackboard, and you might also arrange to share notes with a classmate. If you have to miss a class, you are still responsible for turning homework in on time.

3. Homework. Homework is assigned on Thursday (including the first week, but not Thanksgiving week), and is due one hour before class **(3:00 PM)** on **Tuesdays.** Submit to **Karyn** as an email attachment in **MSWord or RTF format**, All written work should follow **APA 5th Edition style.** The UO server timestamps all email, so sending homework from your UO account is the best way to ensure that the submission time is correctly reflected. **Late homework earns ½ credit, and will not be accepted if more than a week overdue**, with the exception of Homework #9, which will not be accepted after Tuesday Dec 9 at 3 PM.

Homework will generally consist of two parts: First, you will write **a brief response** to the readings for the week, summarizing what you see as the "key points" and noting connections among them. Provide a single response, which should be between 1/3 and 1/2 of a page, that covers all readings. Write the response entirely on your own, though you are free to discuss the readings with one other before doing so. Second, several questions will address the material covered in lecture; this is the **"problem set,"** and you will typically use a computer program to complete it. You may discuss and compare notes with other 412/512 classmates on the problem set. However, you should generate your own analyses and write up the results yourself in APA style. Do not cut and paste other student's words, tables, or statistical output. Crunching numbers is of limited use if you cannot present and interpret your results clearly. Answer keys will not be provided, but common mistakes will be discussed in class or lab.

Writing Skills: Strunk & White's *The Elements of Style* can help you write concise, precise sentences to communicate scientific information. Review the eight elementary rules of usage and the ten elementary principles of composition at http://www.bartleby.com/141/. Consult the *Publication Manual of the American Psychological Association* (5th ed) for APA style in reporting statistical results.

4. Quizzes. Short quizzes every Thursday will cover the readings for that week. Quizzes provide you with feedback about what you do and do not yet understand. Two "pop" quizzes

will review material covered in previous quizzes that confused many students. So study any questions you miss. The class will decide the grading scheme for quizzes.

5. Final. The take-home final exam will include: (a) conceptual questions about different techniques (e.g., assumptions, associated problems), (b) "generate a plan" questions that ask you how you would analyze a data set, and (c) statistical analysis and interpretation of one or more data sets (following the format established by the homework).

Grad student (512) final . The 512 final exam will include a short paper (2-3 pages) that gives your analysis plan for a data set you are (or will be) working with.

Weighting of assignments for course grade
Homework: 50% (best 8 out of 9, all 9 must be turned in)
Quizzes: 20% (8 total, class to decide grading rule)
Final exam: 30%

Cheating, if detected, will earn **a failing grade** in the course. The University may impose additional penalties in accordance with the student conduct code. Don't do it! Cheating = turning in the work of others as your own, copying other people's quiz answers, or copying from someone else's final exam. For the **final,** providing or asking for help from *other students in the class* = cheating. See below for legitimate input on the final.

What is NOT cheating? Collaborative learning; that is, getting or providing help on the **homework**. Meeting to compare notes on homework (in person or on Blackboard) can help everyone do well. However, don't just copy what someone else has done—complete the homework yourself. For the **final:** It is fine to have someone ***outside the class*** read a draft of your final to see if it is clearly written. When writing academic papers, scholars should get feedback from colleagues before submitting the final product to a journal ☺

Class Etiquette & Norms

Come to class on time, and stay for the whole class or lab
If you must miss a class or leave early, let us know so we don't wait for you or worry about you
Treat your fellow students and your instructors with respect
Turn the ringer off on your cell phone during class
Ask questions and speak up during class
Ask questions on Blackboard site—that way everyone can see the answers
Stop by and see Holly and Karyn during office hours

Guidelines for Teaching and Learning:
Guidelines developed by the Undergraduate Education Committee (UEC) of the psychology department are available online at http://psychweb.uoregon.edu/guidelines/index.htm

Schedule	Readings: Chapters in Howell + *supplementary* Read by TUESDAY	Topics Covered	Assignments & Activities: Homework due dates & quizzes
Week 1 Sept 30, Oct 2, 3	Chs 1 & 2 Judd 2000 (for Thurs)	Exploratory data analysis (EDA)	Tues: Diagnostic Test Thurs: Be ready to discuss Judd
Week 2 Oct 7, 9, 10	Chs 3 & 4	Distributions, covariance	Tues: Homework #1, Thurs: Quiz #1
Week 3 Oct 14, 16, 17	Chs 9 & 10	Correlation & univariate regression	Tues: Homework #2, Thurs: Quiz #2
Week 4 Oct 21, **23,** 24	Ch 15 (all except 15.14)	Multiple regression	Tues: Homework #3, Thurs: Quiz #3
Week 5 Oct 28, 30, 31	Reread Judd	Review & General linear model (GLM)	Tues: Homework #4, Thurs: Quiz #4
Week 6 Nov 4, 6, 7	Ch 16	GLM applied to categories; ANOVA	Tues: Homework #5, Thurs: Quiz #5
Week 7 Nov 11, **13,** 14	Ch 13	Continuous and categorical interactions, ANOVA cont.	Tues: Homework #6, Thurs: Quiz #6
Week 8 Nov 18, 20, 21	Ch 14	Repeated measures	Tues: Homework #7, Thurs: Quiz #7
Week 9 *Nov 25 only*	Ch 14 cont	Repeated measure cont.	Tues: Homework #8 NO CLASS T-DAY! NO LAB FRIDAY!
Week 10 Dec 2, 4, 5	Ch 17 & 15.14 George & Mallery (2001)	Logistic regression / loglinear analysis	Fri, by 3 PM: Homework #9 due Thurs: Quiz #8 Lab will be used for review
Finals Week: **Take-Home Final Exam:** Due via email by 1 PM, Thurs, Dec 11 to Karyn.			