Psychological Methods: Statistical Procedures
MTWR 11:20am-12:50pm   GEOL 1408

Professor: Peggy Kern
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Email: mkern001@ucr.edu
Office Hours: T 1:00 – 2:00pm, Th 10 - 11 am and by appointment
Final Exam: Friday, July 27, 1 - 3pm

Teaching Assistants:

TA:	**Sarah Fairborn** (section 21)	**Ryne Sherman** (section 22)	**Daniel Miramontez** (section 23)
Section:	Fri 9:10am - 12:00pm, OLMH 420	Fri 11:10am - 2:00pm, OLMH 1318	Fri 1:10pm – 4:00pm, OLMH 420
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Course Webpage:
http://www.ilearn.ucr.edu

Prerequisites:
PSYC 001 and MATH005 with grades of C- or better, or PSYC 002 and MATH004 or MATH008a with grades of C- or better. Enrollment priority is given to Psychology majors.

Required Textbook:
Spatz, C. (2005). *Basic Statistics: Tales of Distributions* (8th Ed.). Belmont, CA: Wadsworth/Thomson. (ISBN: 0-534-61137-0)

Required Materials:
You should have a calculator and an email address that has been registered with UCR (for iLearn purposes). You will need access to a computer and the internet outside of class (if you do not have a computer, there are plenty available in the libraries and computer labs on campus). Additional lecture handouts will be supplied in class; you are responsible for receiving and keeping these materials. Some handouts from previous lectures will be made available on iLearn.

Course Objectives:
This course surveys basic elements of data analysis in Psychology, including measures of central tendency, variability, correlation, sampling distributions, statistical inference, and hypothesis testing, and offers an introduction to specific applications of various statistics.

Grading:

Midterm Exam 1	100 points
Midterm Exam 2	100 points
Final Exam	150 points
"How-to" Sheets	40 points (8 total, 5 points each)
In-class assignments	50 points (10 total, 5 points each)
Discussion attendance & assignments	40 points (10 points per week)
Homework	20 points
Total	**500 points**

Exams:

There will be two mid-term exams and one final exam. Each will cover one section of the material (see Schedule). Although the exams are not cumulative per se, statistical skills build on one another, so you will need to carry skills you learn throughout the course into each exam. Graded exams will not be returned. If there are any questions or you would like to see your graded exams, please see your TA during their office hours. Exam 1 and 2 are worth 20% of your grade (each), and the final is worth 30% of your total grade.

"How-to" sheets:

For each major topic, you will create your own "How to". You should include definitions of terms, important formulas, and any other information you think is helpful to aid your understanding (for example, a sample problem). These can be up to 1 page each (front-side only), and you can use these on the exams. The assigned How-to's for the week are due at the beginning of your weekly discussion section (in the last week your TA will check off what you have at the end of the last class).
1. Descriptive statistics
2. Correlation
3. Probability and Z-scores
4. t test (one and two samples)
5. One-way ANOVA
6. Factorial ANOVA
7. Correlated samples t test and repeated measures ANOVA
8. Chi square

In-class assignments:

There are multiple ways of learning (auditory, visual, hands-on), and we will be incorporating these different methods into the course to aid your learning. Lecture periods will often consist of lectures on each topic and in-class assignments that will allow you to practice the skills we cover. Bring your calculator and notes to class each day. You will receive 5 points per assignment for attending class and working on these assignments (note: you must be present on the days we do these to receive points – no make-ups allowed).

Discussion section attendance and assignments:

You are expected to attend your assigned section each of the four weeks (the last Friday is your final exam, so there will be no section that day). You must attend the section you are assigned to. In section, your TAs will be helping you understand and practice with the material you have been exposed to during the week. Bring your class notes, book, and calculator to section (this will help with the assignments). You will receive 10 points for attending and participating in each section.

Homework:

The best way to learn statistics is to practice. You will be assigned homework problems to be completed between each class period. If you have questions, feel free to post questions on the discussion board on iLearn or talk to your TA. You are encouraged to work with other people in the class, but the work you turn in must be your own. Homework assignments completed for the week are due at the beginning of lab section each Friday. No late homework assignments will be accepted.

Attendance Policy:

You are expected to attend lecture and discussion section classes. If you choose not to come to a class, that is your choice; you will only receive points for being there and completing in-class and in-lab assignments on the assigned day (you will not be allowed to make up these points, regardless of your reason for missing class). A make-up exam may be offered in extreme cases, such as familial death or severe personal illness; you must have valid documentation for your absence to be allowed to do a make-up. No late homework assignments will be accepted.

Some tips for succeeding in this class:

Regardless of your background, statistics is quite doable, and can actually be enjoyable. Here are a few pieces of advice to help you succeed in the course.

1. **Come to class.** There is no substitute for attending class, seeing and hearing the material and examples presented, and having the chance to ask questions and practice problems. I will present material both from the text and additional information.

2. **Participate in class**. Coming to class only contributes to your learning if you participate actively. During lectures, I will ask questions during the lecture – the more you participate, the more enjoyable it will be, and the more you will learn. Further, during many class periods, you will be asked to work on activities designed to help you learn the material and to explore the concepts and methods of statistics. You will learn the most if you actively engage in these activities.

3. **Work together.** For the in-class and lab activities, you can and should work with your peers. You can learn a lot from one another. I also encourage you to study and work together outside of class. Note that for the homework and how to's, you need to individually write up your answers.

4. **Ask questions.** There are no dumb questions. If anything is unclear or you don't understand something, feel free to stop me during class or talk to me or your TA before and after class, or during our office hours. Many people often have the same question! You can also post questions on the iLearn discussion board – I will check and respond to this daily.

5. **Review your notes.** My intention is to enable you to put together a very extensive and useful set of class notes. I urge you to keep thorough notes and to review them often, particularly before starting homework assignments and while studying for exams.

6. **Check iLearn and discussion board regularly.** Many students often have similar questions and additional insights that you can learn from. Lecture notes will be posted prior to class each day. Additional materials and interesting website will also be noted.

7. **Start the assignment NOW.** This is an intensive course, and as you will see in the syllabus, there are a lot of assignments to do. If you stay on top of things, you will find that the workload is quite manageable and that you will better understand things. Keep in mind that the material in this course builds cumulatively over the course of the quarter.

8. **Take the course seriously.** This is a challenging course. You will be asked to do a lot of problems, think about things conceptually, and find ways to write out and present your results. It will take time, but I guarantee that you can and will understand the material if you put in the time and effort to learn things.

9. **Have fun with the material.** It may sound odd, but statistics really is an interesting subject. It is all around us, and we will be using real life data and problems. My hope is that I can convey some of my excitement for the topic to you. Try to find ways to apply what you learn to what you see and read about in your daily life. Also, feel free to suggest ways that would make the course more interesting.

10. **Think!** Do not treat the course as an exercise in mere "plug-and-chug" number-crunching, and do not try to apply formulas simply to solve problems. Statistics is not simply a math problem – it's about thinking how to solve a problem.

Above all, **you are responsible for your own learning.** As your instructor, I aim to provide you with contexts and opportunities to facilitate the learning process. Please call on me to help you with this learning in whatever ways I can.

Course Schedule

	Date	Topic	Chapter	Homework Problems & Assignments
M	6/25	Introduction, basic concepts	1	Chap 1: 1, 2, 3, 5, 6
T	6/26	Descriptive statistics: Experiment design, central tendency, variability	2 & 3	Chap 1: 7, 8; Chap 2: 1, 3 Chap 3: 1, 4, 7, 11, 13, 15, 17, 24, 26
W	6/27	Descriptive statistics: Other descriptive statistics; graphing	2 & 4	Chap 2: 6, 13, 14, 17 Chap 4: 1, 5, 7, 8, 11, 13 *How to* #1: Descriptive statistics
Th	6/28	Correlation	5	Chap 5: 2, 5, 9, 14 *How to* #2: Correlations
F	6/29	*Focus on descriptive statistics*		***How to* 1 & 2 due** **Homework week 1 due**
M	**7/2**	Exam 1: Descriptive Statistics		
T	7/3	Introduction to inferential statistics	6	Chap 6: 4, 8, 10, 13, 17, 19
W	7/4	July 4th holiday – no class		
Th	7/5	Probability and distributions	6 & 7	Chap 7: 4, 7, 12, 13, 17, 19, 20, 25 *How to* #3: Z-scores & probability
F	7/6	*Exam 1 review; Focus on probability & distributions*		***How to* 3 due** **Homework week 2 due**
M	7/9	Hypothesis testing; 1 sample t test	8	Chap 8: 4, 6, 9, 11, 12, 14, 17, 21, 22, 26, 28
T	7/10	2 sample t test	9	Chap 9: 2, 3, 7, 10, 13, 17, 18, 19, 22, 24, 25, 26 *How to* #4: t tests
W	7/11	One-way ANOVA	10	Chap 10: 5, 7, 9, 11, 13
Th	7/12	One-way ANOVA	10	Chap 10: 17, 18, 19, 22 *How to* #5: One-way ANOVA
F	7/13	*Focus on t tests and ANOVA*		***How to* 4 & 5 due** **Homework week 3 due**
M	**7/16**	Exam 2: Inferential Statistics, Probability, t tests, one-way ANOVA		
T	7/17	Factorial ANOVA	11	Chap 11: 1, 4, 6, 9, 12
W	7/18	Factorial ANOVA	11	Chap 11: 15, 17, 19 *How to* #6: Factorial ANOVA
Th	7/19	Repeated measures designs	10 & 12	Chap 12: 5, 6, 7, 10 *How to* #7: Repeated measures designs
F	7/20	*Exam 2 review; Focus on factorial ANOVA & repeated measures design*		***How to* 6 & 7 due** **Homework week 4 due**
M	7/23	Regression	5	Chap 5: 16, 20, 22
T	7/24	Chi square	13	Chap 13: 1, 3, 14, 18, 20 *How to* #8: Chi square
W	7/25	Computer Applications		
Th	7/26	Course recap, review, & practical applications	15	***How to* 8 due** **Homework week 5 due**
F	**7/27**	1 – 3 pm: Final Exam: Factorial ANOVA, Repeated Measures designs, Chi Square		

* Note: This syllabus tentative schedule for the quarter; the instructor has the right to change it at anytime. *Last updated June 25, 2007*

University standards for academic honesty are applicable to all class-related activities with the following exceptions:
1) You may use any kind of assistance for completing the assigned homework problems; however, if you are turning in work that is not completely your own, please explicitly acknowledge the contribution of others. This will not impact your grade.
2) You may use your "How to:" notes on every exam (Calculators will be necessary for all exams).