Statistical Methods in Psychology
Spring 2019

Course Professor: Dr. Sara Weston
Straub Hall, Rm 325 (sweston2@uoregon.edu)
Office hours: Friday 12a - 2p

Lab Instructors:

Sara Lieber	Xi Yang
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Tuesday 10a - 12p	Friday 10a - 12p

Meeting time and room: Mondays & Wednesdays, 12:00-1:20pm, Chapman 220

Lab sections:

35030	Monday	2-3:20p	Straub 008
35031	Monday	4-5:20p	Straub 008
35032	Tuesday	10-11:20a	Straub 006
35033	Tuesday	12-1:20p	Straub 006
35034	Tuesday	2-3:20p	Straub 006
35035	Tuesday	4-5:20p	Straub 006

Required Materials:

1. *Corty: Using and Interpreting Statistics (3rd Edition)* and the LaunchPad for this textbook
   You can buy the textbook as an e-book and LaunchPad (on online program) bundle at the Duck Store. If you are unsure about whether you will drop the course, there is a 3-week free trial available before you purchase. If you would prefer a physical copy of the textbook, these are available for purchase as well, but please be sure you have access to the online LaunchPad program.
2. iClicker
3. Calculator (exams and classroom activities will involve working problems)

Course Description:

Statistics can help improve your logic, critical thinking, and analytical skills. With regard to psychology, knowledge of basic statistics is critical to understanding, interpreting, and conducting research. In this course, we will cover basic statistical techniques that are commonly used in psychology and the social sciences, as well as how they are applied in analyzing and interpreting data. Specifically, we will focus on exploratory data analyses, measures of central tendency, correlation and regression, hypothesis testing, t-tests, analysis of variance and chi-square tests. The primary goal of this course is for you to be able to select, apply, and understand basic statistical techniques in research and in daily life.

This course is the second in the PSY 301-303 sequence for Psychology majors. In PSY 301, you built critical thinking skills and gained an understanding of how knowledge is generated in psychological research, which has prepared you for acquiring data analysis skills in PSY 302. In PSY 303, you will be using the skills in you gained in the prior two courses to design and implement a research protocol, analyze the data collected, draw conclusions from your analyses, and write and present your research.

Course Objectives:

1. Understand statistical analysis presented in journals and reports.
2. Select and perform the correct statistical analysis for given data and research questions, by hand (for basic statistics) and using a computer software program
3. Articulate basic principles of statistical inference and sampling

Course Requirements:

1) Class attendance and participation

Attendance and participation are required for both lectures and labs. During lectures, attendance will be taken using *ungraded* class exercises which you will answer with an iClicker. Your iClicker must be registered on Canvas by the beginning of Week 2. You may miss one lecture and also one lab without losing attendance points.

2) Homework

All homework assignments are due Sunday by 11:59pm, electronically. There are two components to homework: the LaunchPad assignments and jamovi assignments.

2a) LaunchPad is the online program that accompanies your textbook. There are at least two LaunchPad assignments for every chapter. Assignments vary widely in the amount of time they take to complete, so be sure to start them early. The LaunchPad homework assignments are due the Sunday after they are covered in class.

2b) Problem sets are written to be completed with the statistical software called **jamovi.** Each week, there will be a worksheet on Canvas with analyses to complete and questions to answer. You may copy and paste the relevant jamovi output into the documents. Please upload your responses to Canvas.

Please note that jamovi can be downloaded for free (www.jamovi.org) and is available on the computers in Straub 237A. However, I am aware that many students will work in labs and for faculty who prefer other statistical software. So, if you would prefer to use either **SPSS** or **R** to complete your homework assignments, you may do. Please email your Lab Instructor with your decision to use one of these software programs, and specify which one, before completing the first homework assignment.

There is a computer lab in Straub 237A that is open from 10am to 5pm on weekdays. Peer tutors for PSY 302 will be available in that room during most of that time.

3) Your Turn Assignments.

The last 20-30 minutes of most lectures will be devoted to Your Turn assignments, which allow you to practice hand calculations or learn a concept through activity. You will receive 5 points for completing each Your Turn Assignment. To earn points, show the completed assignment to your Lab Instructor. You must show work (where applicable) – assignments with answers and no work will not be given credit. You have until the last lab session (for the section you are signed up for) of the term ends to turn in these assignments and receive full credit.

4) Exams

There will be 2 in-class midterms and a final exam. Midterms will be in multiple-choice and short-answer format and will cover material since the beginning of the term (cumulative), although most questions will focus on new material covered since the previous quiz/exam. Exams will focus on conceptual understanding of the material, with a few simple calculations by hand. The final exam will be cumulative.

The test dates are listed on this syllabus and will not change – plan accordingly. Missed exams will be given a score of 0. If you must miss an exam due to University sponsored events such as athletic trips, you may take the exam in advance by arranging it with the Professor. You must inform the Professor at least two weeks prior to the exam. If you are ill and you contact the Professor and inform her of this fact prior to the exam, a make-up exam will be considered. The form of this make-up exam is at the discretion of the Professor.

Grading:

Your final grade is made up of the following components:

Attendance/participation	10 %	jamovi Assignments	15%
Your Turn Assignments	10%	Midterms	30%
LaunchPad Assignments	15%	Final exam	20%

Final grades will be assigned as follows (fractions of a percent are rounded down to the nearest full percent):

97-100%	A+	87-89%	B+	77-79%	C+	67-69%	D+	0-59%	F
93-96%	A	83-86%	B	73-76%	C	63-66%	D		
90-92%	A-	80-82%	B-	70-72%	C-	60-62%	D-		

Grading Disputes:

If you feel that an item on your test has been graded incorrectly, you may submit the Item Review Form (posted on Canvas). The procedure is as follows: The Lab Instructor will examine your request and determine whether to change your grade. You can accept that decision as final or appeal to the Professor. If you appeal to the Professor, she will re-grade the entire exam (meaning you may end up with a higher or a lower score than you were initially assigned).

While we are happy to explain why a particular answer is correct (or incorrect), please be aware that neither the Professor nor the Lab Instructor will debate points (in class or in office hours). If you have a question or concern about the grading of a particular item, the only way to have your grade reviewed is to fill out the Item Review Form. You must fill out an Item Review Form for each item that you would like to have reviewed. Finally, Item Review Forms must be submitted before the next scheduled exam. So, if you would like to have an item reviewed from Exam 1, you must submit the form before Exam 2.

Generally, we will not accept grade dispute for homework assignments. However, if upon receiving your grade, you discover that you mistyped a number into jamovi and this was the cause of receiving all points off, you may appeal to your Lab Instructor. If the Lab Instructor agrees that this was the case, you have one opportunity to redo the homework assignment. You may receive *up to half* of the points you missed. For example: if you missed 6 points on a 20-point assignment, the maximum amount of credit you can receive is 17 (the 14 points you received initially, plus half of the points you missed). You have one week from the time grades are posted to request a homework redo.

Additional Resources:

There are a number of additional resources available on Canvas. The course is organized by modules, with one module for each week. In those modules, you will find abbreviated versions of the lecture presentations. Prior to exams, there will be a formula sheet posted in the module corresponding to the week the exam takes place. There will also be a link to a dataset generator, which will be helpful for practicing hand calculations or jamovi calculations.

There are additional resources on LaunchPad, including videos, apps, and practice quizzes.

Student Workload:

When you complete this course, you will earn 4 credits toward your degree. According to the University principles governing credit and contact hours, each credit equals 30 hours of work for the term. Four credits are thus equivalent to 120 hours of work for the term, or 12 hours for each of 10 weeks. You will spend 4 hours in lecture and lab each week, so expect to spend an additional 8 hours reading, studying and completing homework assignments.

Academic Honesty:

Academic dishonest in any guise, including plagiarism, fabrication, and cheating, will not be tolerated. All work submitted in this course must be your own and produced exclusively for this course. Cheating is defined as providing or accepting information on a quiz or exam, plagiarism or copying anyone's written work, or allowing someone else to copy your work. In addition, lying to try to get points is considered academic dishonesty and will be treated as cheating. Consequences of academic dishonesty range from receipt of a failing grade on an assignment to an F in the course. All violations will be taken seriously and noted on a student disciplinary record. For further information, refer to the University Student Conduct Code: http://dos.uoregon.edu/conduct.

Collaboration:

We strongly encourage collaborative learning, but you must produce individual work. Discussing homework with other students and Professors is encouraged, as are homework and study groups. Talking over problems and reworking them when you get different answers promotes deeper understanding of concepts. However, each student must submit individual homework assignments. You must also show your work for hand calculations. Thus, while we encourage you to work together to solve problems and check answers, the actual writing of answers needs to be done independently. No collaboration is allowed on exams and quizzes.

Access and Accommodation:

If you have a documented disability and anticipate needing accommodations in this course, please email or meet with the Professor as soon as possible. Also, please request that a counselor at the Accessible Education Center (uoaec@uoredon.edu, tel. 541-346-1155) send a letter verifying your disability and needed accommodations. For a list of resources provided by the Accessible Education Center, please see aes.uoregon.edu.

English as a Second Language:

If you are a non-native English speaker and think you may have trouble in this course due to language difficulties, please see me as soon as possible to make any necessary arrangements. If you need to use a dictionary for in-class exams, you must ask to have your dictionary checked by me or one of the GTFs prior to the exam. Electronic dictionaries are not permitted.

Emailing the Professor and Lab Instructors

We are more than happy to help you work through difficult material throughout the course. However, we have other responsibilities to the university that we are attending to when in not in class or office hours. We can commit to responding to emails within 24 hours (48 hours if you email us between 5pm on Friday and 5pm on Sunday). In addition, we will not respond to questions that can be answered by reading the syllabus, nor will we explain course concepts to you through email. Please come to office hours or schedule a meeting with us if you would like to discuss course content.

Schedule of Lectures and Assignments

Week	Lecture	Lab	Reading (Corty Chapters)	HW (due by Sunday at 11:59pm)
1	4/1 – Introduction, variables and their visualization 4/3 – Central tendency, variability *Your Turn: Shapes of distributions*	Introduction, variables	1, 2, 3	LaunchPad Ch 1 LaunchPad Ch 2 LaunchPad Ch 3 jamovi HW #1
2	4/8 – z-scores and the normal distribution *Your Turn: z-scores* 4/10 – Sampling and confidence intervals *Your Turn: M&M samples*	Means, variability, z-scores	4, 5	LaunchPad Ch 4 LaunchPad Ch 5 jamovi HW #2
3	4/15 – Introduction to hypothesis testing *Your Turn: NHST and Error* 4/17 – **MIDTERM #1**	Sampling distributions	6	Launchpad Ch 6 jamovi HW #3
4	4/22 – One-sample *t*-test *Your Turn: One-sample t-test* 4/24 – Independent samples *t*-test *Your Turn: Independent samples t-test*	One-sample t-tests	7, 8	LaunchPad Ch 7 LaunchPad Ch 8 jamovi HW #4
5	4/29 – Paired-samples *t*-test *Your Turn: Paired-samples t-test* 5/1 – *p*-values *Your Turn: p-values*	Two-sample t-tests (independent and paired)	9 Online articles (see Canvas)	LaunchPad Ch 9 jamovi HW #5
6	5/6 – One-way ANOVA *Your Turn: One-way ANOVA* 5/8 – **MIDTERM #2**	One-way ANOVA	10	LaunchPad Ch 10 jamovi HW#6
7	5/13 – Repeated-measures ANOVA *Your Turn: Repeated-measures ANOVA* 5/15 – Factorial ANOVA *Your Turn: Factorial ANOVA*	Repeated Measures ANOVA	11, 12	LaunchPad Ch 11 LaunchPad Ch 12 jamovi HW #7
8	5/20 – Correlation *Your Turn: Correlation* 5/22 – Regression *Your Turn: Regression*	Factorial ANOVA, Correlation	13, 14	LaunchPad Ch 13 LaunchPad Ch 14 jamovi HW #8
9	5/27 – Memorial Day (No Class) 5/29 – Chi-square test *Your Turn: Chi-square test*	*No lab*	15	LaunchPad Ch 15 jamovi HW #9
10	6/3 – Which test? 6/5 – Review	Regression, Chi-Square	16	LaunchPad Ch 16 jamovi HW #10

***** The final exam will be: Monday, June 10, 10:15am – 12:15pm