STATISTICAL METHODS IN PSYCHOLOGY (PSY 302)

University of Oregon
Summer 2019
♦ Lecture: MTWTh 10:00-10:50 am, Location: 112 ESL ♦
♦ Labs: Fridays @ Scheduled Time, Location: 006 STB ♦
http://canvas.uoregon.edu

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Office Hours:

Lab Instructor: Xi Yang
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Office Hours:

REQUIRED MATERIALS

- **Textbook:** Corty, E. W. (2016). *Using and Interpreting Statistics* (3rd ed.) New York, NY: Worth Publishers. **This is bundled with Launchpad as an e-book. A physical copy of the textbook is optional.**

- **Access to Online Homework:** Launchpad for Corty: Using and Interpreting Statistics
  This is an online program that you will use to access the eBook version of the textbook and complete online homework assignments. **Purchase is required.** The most economical purchase is to purchase the digital access (e-textbook + LaunchPad) via the Duck Store. You can get 3 weeks of free trial access before you buy.

- **iClicker**: You will need to purchase (if you don't already own one) **and register** an iClicker by the **beginning of the third day of class**. An iClicker is necessary to get credit for class participation. **Required.**

- **Calculator**: You will need a calculator for in-class work. It does NOT need to be a graphing calculator. Please bring it to class.

COURSE DESCRIPTION

Welcome to Statistical Methods! This course is the second course in the PSY 301-303 sequence for psychology majors. In PSY 301, you built critical thinking skills for interpreting and understanding psychological research. In 302, you will be trained on how to perform various statistical analyses. In PSY 303, you will use the skills you gained in PSY 301 and PSY 302 to design, analyze, and present your own scientific research study.

This course will introduce you to various statistical techniques that you will then know how to use to analyze your own future datasets. This course heavily focuses both on the concepts underlying statistical techniques in addition to the mathematical calculations needed to actually perform the different analyses. In addition to learning concepts and calculations by hand, in lab you will also learn how to use the statistical software package Jamovi. Knowing how to use at least one statistical analysis software is essential for being a psychological research in modern times. Otherwise, you would spend hours – even days – attempting to

calculate some of these analyses by hand! The topics we will cover include descriptive statistics, probability, hypothesis testing, correlation, ANOVA, and regression.

Prerequisites: MATH 243 or one from MATH 241, MATH 246, MATH 251; PSY 301, WR 121; Pre- or coreq: PSY 201, 202

LEARNING OUTCOMES

By the end of this course you should be able to:

♦ Read a description of a research study and identify the appropriate statistical technique needed to answer the research question.

♦ Use hypothesis-testing procedures to conduct statistical tests (by hand and using statistical software), draw conclusions, and write up the results in APA style based on your analyses.

COURSE EXPECTATIONS

The summer version of PSY 302 moves at a fast pace. We will be covering key concepts in every class, and most, if not all, of the concepts that we cover will build off each other. In order to succeed in this course, attendance at all lectures and labs is e*ssential* as well as **mandatory**. Attendance will be tracked using iClickers in lecture and using sign-in sheets in lab. The best way to learn statistics is through thinking deeply about the concepts, asking questions, and practicing problems on your own – we will do all of these in this class!

Canvas: Canvas will be used as an online resource for the syllabus, lecture slides, assignments, and lab materials. It is recommended that you frequently check Canvas to stay up to date on the course materials that are posted. Important announcements will also be sent via e-mail, so it will benefit you to get in the habit of checking your e-mail daily. If you send an e-mail to the instructor on a weekday, expect a response within 48 hours. If you send an e-mail to the instructor on the weekend, expect a response on the next weekday.

COURSE REQUIREMENTS

Class Participation

To get credit for each day you attend lecture, you must participate in class exercises using your iClicker. **You are required to have an iClicker and register it on Canvas by the start of Day 3, or you will begin to lose participation points.**

You get 1 free miss day – use this miss day only when it's completely necessary. For any lecture or lab that you miss, *you will miss essential information*. It will be up to you to catch up on that material on your own via the materials posted on Canvas and your textbook. Myself and the TA will not repeat a missed lecture or lab during our office hours.

Homework

There are **two** types of homework assignments each week:

- Corty Launchpad Online Homework Assignments **(due Saturdays at 11:59pm)**
  - These become unavailable when due so **can't be turned in late**.
  - **Make sure to purchase and register your online access to the Corty Launchpad by the third day of class so that you do not lose points for assignments.**
- Jamovi Homework **(due Thursdays at 11:59pm)**

- Complete the Jamovi portion of the homework as an electronic document. Download this from Canvas (see "Assignments"), fill out your responses & paste appropriate output, then upload back to Canvas.
- Jamovi assignments will typically be due Thursdays at 11:59pm, ***except* for the last week of class, when the assignment will be due Tuesday at 11:59pm**.
- Jamovi assignments will lose 10% of points every day they are late, including weekend days.

Midterms

There will be 2 midterms in this course. Midterms will be multiple-choice, short answer, and by-hand problems. The first midterm is on Monday, July 15th and covers the material from Ch. 1-7. The second midterm is on Tuesday, July 30th and focuses on the material from Ch. 8-11, but because concepts in this course build off each other, you will still need to know content from previous chapters. **Make-up exams will only be given in cases of documented emergencies.** If you miss an exam for non-emergency reasons, you will receive a zero for that assignment.

Final Exam

The final exam will be cumulative and held on the final day of class (August 15th). A major component of the final will be selecting the appropriate statistical test to answer a given research question. Knowing when to use which statistical test (i.e., how to appropriately analyze your data) is one of the fundamental goals of this course. The questions on the final exam will be in similar format to the formatting of questions on the midterms.

STUDENT WORKLOAD

Overall: For a 4 credit class, the university expectation is that you spend approximately 12 hours per week in class and outside of it.

GRADING

Final grades in this course will be determined by the following:

- Class/Lab Participation 10%
- Online Homework: 15%
- Jamovi Homework: 15%
- Midterms: 30% (15% each)
- Final Exam: 30%

Grades will be distributed as follows:

A+	99-100%	B+	88-89%	C+	78-79%	D+	68-69%	F	0-59%
A	92-98%	B	82-87%	C	72-77%	D	62-67%		
A-	90-91%	B-	80-81%	C-	70-71%	D-	60-61%		

Please see the psychology department guidelines for a description of the type of achievement that each grade signifies: http://psychology.uoregon.edu/courses/department-grading-standards/

SPECIAL ACCOMMODATIONS

Accessible Education Center (AEC)

If you have a documented disability and anticipate needing accommodations in this course, please notify me as soon as possible. Also, please request that a counselor at the Accessible Education Center (uoaec@uoregon.edu, 541-346-1155) send a letter verifying the type of accommodation that is appropriate. For a list of resources provided by the Accessible Education Center, please see http://aec.uoregon.edu

Students for Whom English is a Second Language

Foreign language dictionaries are permitted during exams. If you find that you do need additional time to complete the first exam, please let me know, and we will make arrangements ahead of time for all future exams.

ACADEMIC INTEGRITY

We take academic integrity seriously. **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 (e.g., lying about having turned in an assignment on-time) is considered academic dishonesty and will be treated as cheating. Discovery that a student has cheated will lead to a grade of F in the course for that student. All academic misconduct and suspected misconduct will be reported to the Office of Student Conduct. we will inform UO's student conduct coordinator.

For more information about academic misconduct, see the University Student Conduct Code at http://dos.uoregon.edu/conduct.

COLLABORATION

We encourage collaborative learning, but you must produce (and we must assess) individual work.
You may discuss homework problems with other students and the instructors. Talking over problems and discovering why you got different answers can help promote deeper understanding of concepts. **However, each student must submit individual homework assignments. You should not just copy the work that someone else did and submit it as your own.** You also must show your own work for hand calculations.

CLASSROOM ETIQUETTE

As a courtesy to your instructors and to your fellow classmates, please arrive on time for class and stay for the duration of the class period. Getting up in the middle of class is very disruptive. Please turn off cell phones and any electronic devices that might be distracting to others at the beginning of class. Be attentive (i.e., no texting, watching videos, web-surfing, etc.). It is the policy of the University of Oregon to support and value diversity, and I expect you to treat your fellow students and your instructor with respect.

Course Schedule*

Week	Date	Topic	Reading	Assignments/Exams
1	6/24 - 6/27	Introduction, Variables, Frequency Distributions, Central Tendency, Variability	Ch. 1-3	Online: Ch. 1-3 due 6/29
Lab	6/28	Lab 1: Intro to Jamovi & z-Scores		Jamovi HW1 due 7/4
2	7/1 - 7/3 **No Class 7/4**	z-Scores, Normal Distribution, Probability, Sampling, & Confidence Intervals	Ch. 4-5	Online: Ch. 4-5 due 7/6
Lab	7/5	**No Lab**		No Jamovi HW
3	7/8 - 7/11	Introduction to Hypothesis Testing, Single-Sample z-Test, Single Sample t-Test	Ch. 6-7	Online: Ch. 6-7 due 7/13
Lab	7/12	Lab 2: Single-sample z-Test & t-Test		Jamovi HW2 due 7/18
4	7/15 - 7/18	Independent Samples t-Test, Paired-Samples t-Test	Ch. 8-9	**MIDTERM I – Monday, 7/15** Online: Ch. 8-9 due 7/20
Lab	7/19	Lab 3: Independent & Paired Samples t-Tests		Jamovi HW3 due 7/25
5	7/22 - 7/25	Between Subjects One-Way ANOVA, Repeated Measures One-Way ANOVA	Ch. 10-11	Online: Ch. 10-11 due 7/27
Lab	7/26	Lab 4: Between & Repeated Measures ANOVA		Jamovi HW4 due 8/1
6	7/29 - 8/1	Factorial ANOVA	Ch. 12	**MIDTERM 2 – Tuesday, 7/30** Online: Ch. 12 due 8/3
Lab	8/2	Lab 5: Factorial ANOVA		Jamovi HW5 due 8/8
7	8/5 - 8/8	Factorial ANOVA, Correlation & Regression	Ch. 13-14	Online: Ch.13-14 due 8/10
Lab	8/9	Lab 6: Correlation & Regression		Jamovi HW6 due 8/13
8	8/12 - 8/15	Correlation & Regression, Chi-Square 8/14 – Final Review **8/15 – Final Exam: 10 – 11$_{AM}$**	Ch. 15	
	8/16	No Lab		

**Changes may be made to the course schedule*