Syllabus: Fall 2019 Psychology 302 Statistical Methods CRN (15314 MW) 4 Credits with Lab

Time & Location: MW 14:00-15:20 (145 STB)Instructor: Theodore Bell, Ph.D. tbell1@uoregon.eduOffice: Straub 385, Office hours: Tues 10:00, Wed 10:00 & By Appointment, please arrive at 10Lab Locations and GEs:S. Lieber. M 16:00; T 10:00, 12:00 STB 006 slieber@uoregon.eduX. Yang, T 8:30, 14:00, 16:00 STB 006 xiy@uoregon.edu

Texts & Required Materials:

Textbook: *Learning Statistics with Jamovi* (Free and available online as a .pdf here:<u>https://blog.jamovi.org/2018/10/25/learning-statistics-with-jamovi.html</u>

Online Homework: Assignments will be handled through Canvas.

iClicker: Please register your iClicker on the Canvas site for this. You will need an iClicker to get credit for class participation

Calculator: We will often work out problems in-class, please bring a calculator or use an app on your phone. It does not have to be a graphing calculator.

Canvas: Canvas will be used in this course as an online resource for the syllabus, lecture slides, and lab materials. It is recommended that you frequently check Canvas to stay up to date on the course materials that are posted from week to week. Important announcements will also be sent via email, so it is best to get into the habit of checking your email daily. If you send an email to the instructor, expect to receive a reply within 24 hours.

<u>Course Description</u>: This class is a foundational course for statistical methods in psychology. It is the second part of a three-part series. Building on the Scientific Thinking course (Psy 301), this course will deepen your understanding of statistical methods and validity and give you practical experience with a range of statistical methods and help prepare you for the Research Methods course (Psy 303). Topics include descriptive statistics, probability, hypothesis testing, correlation, ANOVA, regression.

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

Expected Learning outcomes:

Mastery of the basic goals, terminology, and notation used in inferential statistics Develop and show facility in organizing and summarizing results obtained from research using APA format Demonstrate ability to formulate and test scientific hypotheses in a statistical framework Articulate the basic principles of statistical inference and sampling Demonstrate ability to select appropriate statistical analyses for specific research designs Interpret statistical analyses presented by other researchers in the primary literature Conduct statistical analyses by hand or using statistical software (typically SPSS)

Student Workload:

Lectures: Students will typically have two chapters per week assigned as reading. The first few weeks are partial review and will have more chapters assigned. Attendance is expected and mandatory for lectures.

"Quiz" Online Homework: Each week you will have online problem sets due in the form of a Canvas "Quiz". These are untimed but are due by 11:45 Sunday. They cannot be turned in late as they become unavailable after the due date.

You will need to be working on these throughout the week in order to keep pace. Generally these can be completed in an hour.

Exams: This class will have two major midterms and 1 final, listed on the Course Schedule (below).

Lab and Lab Assignments with Jamovi: Attendance at lab is mandatory, and each week you will be assigned homework. Each assignment may take anywhere from 1-2 hours to complete. We will use Jamovi to conduct analyses. Overall: For a 4 credit class, the university expectation is that you will spend approximately 12 hours per week in class and outside of it. Your mileage may vary. Please arrange to meet with me if you have workload concerns, I can help you become more efficient in planning your studies and work.

Grading:

Attendance and Class participation:	%	
Midterms x 2:		20% (10% each)
Final Exam:		20%
"Quiz" Homework Problems:	25%	
Lab Assignments with Jamovi:	25%	

Grade Distribution in percentages:

A+ 99-100	B 83-87	C- 70-72	F 0-59%
A 93-98	B- 80-82	D+ 67-69	
A- 90-92	C+ 77-79	D 63-66	
B+ 87-89	C 73-76	D- 60-62	

Class Participation: To get credit, you must participate in class exercises using iClicker. You are allowed one miss. You must have iClicker registered by the beginning of Week 2 to obtain full credit.

Midterms: Midterms will cover material in the same way as quizzes but will be held in class. You will have 2 midterms (see schedule). Format of Midterms will be mainly multiple choice and some short answer. You will will have a formula sheet available to you, and you may bring a basic calculator with you.

Final Exam: The final exam will be similar in format to the midterms and will be cumulative over the whole course.

"Quiz" Homework: Assignments are due each week (see schedule for times). Each homework will have several components, you must complete them all for full credit. They are designed to help you master the materials, not to burden you, do not put them off.

Jamovi Lab Homework: Jamovi is a statistical program we will use to help us conduct our analyses. Each week, there will be assignments to download from canvas with instructions and problems to complete. You will be uploading your responses to Canvas by the due dates (see schedule). Lab assignments will lose 10% for each late day.

Week	Торіс	Read	LAB	Labs due 11:45 pm
				Saturdays. Quiz
				HW due 11:45 PM
W/1 0/21 10/4		$C_{1} 1 2 (maximu)$	I - L 1. Inter lasting 0	Sundays
W1 9/31-10/4		Ch = 2 (review)	Lab I: Introductions &	Quiz HW I
D1		CII 5 (LAD!)	Jamovi	
DI	No classes			Destintes ICI: 1-20
D_2	Introduction	Ch 4 5 7	Lah 2 Descriptions &	Register IClickers
W2 10//-11		Cn 4-5, /	Standard scores	Quiz H w 2
D1	Descriptive statistics:			
	Central tendency &			
	variability			
D2	Z-scores & Normal			
	distribution, probability			
W3 10/14-18			Lah 3. Sampling	Ouiz HW 3
WO 10/11/10			Distributions	
D1	Sampling & Confidence	Ch 8		
	Intervals			
D2	Midterm I			
W4 10/21-25		Ch 9, Ch 11	Lab 4: One-Sample T- tests	Quiz HW 4
D1	One-sample t-test			
D2	Independent samples t-test			
W5 10/28-11/1		Ch 11	Lab 5: Independent & Paired T-tests	Quiz HW 5
D1	Paired-samples T-test			
D2	P-values			
W6 11/4-8			Lab 6: One-way ANOVA	Quiz HW 6
D1	One-way ANOVA	Ch 13		
D2	Midterm II			
W7 11/11-15		Ch 14	Lab 7: Repeated Measures ANOVA	Quiz HW 7
D1	Repeated-Measures			
D2	Factorial ANOVA			
W8 11/18-22		Ch. 12	Lab 8: Factorial	Ouiz HW 8
			ANOVA	
D1	Correlation			
D2	Regression			
W9 11/25-27		Ch 10	Lab 9: no-lab	Quiz HW 9
D1	Chi-Square			
D2*	Review			
W10 12/2-6			Lab 10: Regression	Quiz HW 10*
D1	Which test & Overview			
D2	Final Review			
Finals week				

12/9-13			
Final: 12/11/19	14:45 WEDNESDAY		

Course Policies:

Collaboration

We strongly encourage collaborative learning, but you must produce (and we must assess) individual work. Discussing homework with other students and instructors 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** (i.e., written independently with no word-for-word copying). You also must 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.

Academic Dishonesty Policies

Plagiarism will result in a zero on any assignment.

Cheating on any exam, or assignment will result in a failing grade in class.

All academic misconduct and suspected misconduct will be reported to the Office of Student Conduct, this is mandatory and not at the discretion of the instructor.

Teaching Philosophy: A teacher is part coach, part actor, part bandit (lifting from anywhere that will help), and part student (still always learning). A student is open to new ideas, diligent in effort to master new things, eager to surpass themselves, is an active partner in the process.. *Lecture slides are not a substitute for the text, nor can they be relied upon as a substitute for missing class.* Many things are discussed in lecture, only bullet points are on slides.

Classroom interactions: We are all adults, and I would like to emphasize that all communications should be respectful of the participants. It is extremely important to me that we maintain a respectful environment while promoting a diversity of opinions and ideas. Participants should feel free to offer up their ideas and should expect that those ideas be the focus of any critical analysis rather than the person discussing them. In other words, ideas are fair game for criticism, but personalizing attacks will not be tolerated, nor will any form of bigotry or intimidation.

Also, if you find yourself distracted by, or become a distraction with your cell-phone, please put it in airplane mode...likewise for your laptops. If you are aware that you may need to come to class late, or leave early, please let me know beforehand, and sit by the door if possible.

Communication Policy: Please use Canvas email to communicate, or your UO email address with the course number (PSY 302) in the subject line. This will help ensure that we are able to respond efficiently.

Student Accommodations

Students with Disabilities: If you have a documented disability and anticipate needing accommodations in this course, please make arrangements to meet with me. Also, please request that the Accessible Education Center (164 Oregon Hall, http://aec.uoregon.edu/contact.html) send me a letter verifying your disability. The phone number for AEC is 346-1155 and the email address is uoaec@uoregon.edu

Students for Whom English is Not Their Native 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.

Study skills resources: Teaching and Learning Center offers various programs and workshops throughout the term. [stp]http://tlc.uoregon.edu

Peer Tutoring: The Department of Psychology has established outside Peer tutoring for Psy 303. There will be announcements made in class and in lab regarding this, but the Peer Tutoring is generally available weekdays in the lab in Straub 237A and is an excellent resource.