

**Analysis of Behavioral Data
PSYC 218, Section 004
Winter Term 2, 2019-2020
MWF 1-1:50 AERL 120**

Instructor	Teaching Assistant	Teaching Assistant
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Feel free to stop by any of our office hours—we love seeing you! We will also be using Pizza for discussion as well as to answer questions efficiently. If you have a question, odds are that a bunch of your classmates have the same one! Rather than email it to us, we encourage you to post it directly on Piazza, that way we can respond publicly and clear things up for everyone. Enroll at piazza.com/ubc.ca/winterterm2020/psyc218004. When posting a question, please remember to check your syllabus, class notes, announcements on the course website, and past questions on Piazza to see if your question has already been addressed. If you have a question that requires my personal attention, email me. I'll try as hard as I can to answer within 48 hours (not counting weekends), but if your question is very complicated I may ask that you come by my office hours instead.

Course prerequisites

PSYC 217 and a declared major in Psychology, Cognitive Systems, or Speech Sciences.

Course description and goals

Every day bombards us with numbers that contain important information: Research papers report stunning new results, polls predict who will win elections, or we even gather our own numerical information (*Which apartment or car is the best deal? Which of my friends' grades means I should ask them for studying advice?*). In these examples, we need to interpret data to support conclusions backed by evidence. This course teaches statistics as a tool for analyzing quantitative data. We'll cover descriptive statistics (how to look for patterns in a data set), basic principles of probability, and inferential statistics (how to test hypotheses and draw conclusions about data). Learning about these topics will help you to better judge others' claims about data, as well as to design, conduct, and analyze data from your own scientific research projects.

Required Materials

1. Pagano, R. (2012). *Understanding Statistics in the Behavioral Sciences* (10th Edition). Available at the UBC bookstore, bundled with Francis & Neath CogLab (item 2). Alternately, an e-book version of this textbook is available for rental online (go to www.vitalsource.com and enter ISBN 1111837260). The looseleaf version or hardback 10th Edition are both fine.
2. Francis, G., and Neath, I. (2007). *CogLab Online Version 5.0 With Access Code* (5th Edition). An access code for CogLab is available from the bookstore packaged with your Pagano text. Or, purchase access here: www.nelsonbrain.com/webapp/wcs/stores/servlet/en/micrositesca/UBC-PSYC218. To

register on CogLab, please follow the instructions on the course website under “Modules—General Resources.”

3. Cuttler, C. (2014). *A Student Guide to SPSS, including SPSS Student Version 22*. (2nd Edition). Available at the UBC bookstore or as an e-book at www.kendallhunt.com/cuttler. The book (both the hard copy and e-book version) comes with an access code for SPSS, a software package that we will be using throughout the course.
4. Top Hat account. Register at: <https://app.tophat.com/register/student/> with join code 050377; we'll use it right away. Use FirstnameLastname as username (e.g., KristinLaurin).
5. Scientific calculator. You will need a basic scientific calculator (one with inverse and square root functions will be sufficient and should cost about \$15 or less) for exams. Graphing or programmable calculators are NOT permitted during exams.

Course Reserves

A copy of the Pagano text is available on course reserve at Koerner library. SPSS software is available on computers in BUCH B101 and B121 and Koerner library room 218A. Check here for available drop-in times: <http://isit.arts.ubc.ca/support/the-arts-computer-labs/>
<https://services.library.ubc.ca/computers-technology/public-computers/>
Availability of the course reserves varies. You are responsible for timely completion of course assignments. If you are relying on course reserves to complete assignments, *plan ahead!*

Lectures, Readings, and Assignments

Examinations will cover both lecture and textbook material. You are responsible for all material covered in lectures, all material in the textbook Chapters 1-10 and 12-15 (unless specifically informed otherwise in lecture), and lab assignments. If you want to succeed in this course you should definitely come to lecture, and you should also practice and review lecture material outside of class—for most students this means *at least* 3-5 hours of extra work per lecture.

Grading

You can find your grades on Canvas when they're ready. Alert your TAs to any re-grade requests or errors in your posted scores no later than two weeks after the grades are posted. You can find the re-grade request form under “Modules—General Resources”, but know this: If you request a regrade, it is possible that your score will go down rather than up! Your final grade in the course will be based on four course components: exams (70%), lab assignments (24%), research experience component (3%), iClicker participation (3%).

Exams (70%): There will be three quiz exams (12% each) and a final exam (34%). Cheating on exams will result in a score of 0 for that exam.

1. *Quiz exams (3 x 12%):* See the Course Schedule at the end of the syllabus for quiz dates.

2. *Final Exam (34%):* The final exam is cumulative and will cover material from the entire course, with an emphasis on material from Chapters 13-15 of the textbook. Do not schedule travel during the official exam period (April 8 to 26, inclusive), as you are required to be write the final exam at any scheduled time within this period. If you have three or more final exams scheduled to start and finish within a 24-hour period, you may request to write the second exam on a different day; make this request to me at least one month before the exam. If you

must miss the final exam, you or your caregiver must apply for Academic Concession by contacting your Faculty's Advising Office.

Lab Assignments (24%): There are six lab assignments, each worth 4% of your final grade, which are designed to give you practical experience analyzing and interpreting data using SPSS. See the Course Schedule at the end of the syllabus for specific dates and deadlines. Each lab assignment consists of two components to be completed on your own time:

1. *CogLab or Survey:* To generate data that you and your classmates will use for the lab assignments, you will complete online experiments (using "CogLab") or surveys. Each experiment or survey will take 10-20 minutes to complete. These are always due at 9:00 AM; check the Course Schedule at the end of this syllabus for specific dates. If you do not complete this component by the deadline, you will lose 1 mark from a possible 4 for that assignment (this is 1% of your final course grade). For detailed instructions about the CogLab experiments and survey, look on Canvas under "Modules—General Resources."

2. *Lab Assignment:* These assignments involve analyzing and drawing conclusions about the dataset that you and your classmates have generated. About a week before each assignment's submission date, your Tas will hold an in-class demo of the relevant SPSS functions. Assignment files will be posted on the course website in the section called "Assignments." These are always due at 9:00 AM on Canvas; check the Course Schedule at the end of this syllabus for specific dates. Feel free to meet with your TAs during their office hours, and to talk to your classmates, about issues you encounter while completing the assignments.

However, you must complete the analyses and write-ups on your own. You may not share your work with other students or use another student's work. Sharing your write-up or using another student's write-up is cheating and will result in a score of 0 for that assignment.

Missed quizzes or assignments: If you miss a quiz, for any reason, the marks from that quiz will be reassigned and divided among all **subsequent** quizzes and the final exam. For example, if you miss the second quiz, those 12 marks will be reassigned so your third quiz is worth 18%, and your final is worth 40%. If you miss an assignment, for any reason, the marks from that assignment will be reassigned and divided among all **subsequent** assignments (or to the final, if you miss the last assignment). You don't need to tell me that you're missing or why, that decision is yours to make! **You cannot make up the marks for a missed CogLab or Survey.**

Research Experience Component (3%): The Research Experience Component (REC) is designed to help you learn more about psychology by providing first-hand experience in research. For this course, you will be asked to spend a total of three hours participating in psychology studies. Each hour of participation is worth 1% of your final grade. You can locate and sign up for studies by going to the Department of Psychology's Human Subject Pool (HSP) system at <https://hsp.psych.ubc.ca>. Details about how to use the HSP online system can be found at <http://psych.ubc.ca/internal/human-subject-pool/> in the document entitled "Subject Pool Information for Participants." I strongly encourage you to complete these as early as possible in the term. After the subject pool closes (typically during the last week of classes), you will not be able to participate in further studies to earn course credit.

You may opt to fulfill the REC requirement by completing three library-writing projects instead of participating in research. If you choose this alternative, you will be expected to read and summarize three different research articles. Each article summary counts as one hour of research participation. For each summary, you must select a research article (not a letter to the editor, commentary, or review paper) published between 2000 and the present in the journal *Psychological Science*. Each summary should be about 500 words and should describe the research question, methods, and results of the study presented in the article. Complete instructions on how to complete the library-writing projects can be found on p.4 (“The Library Option”) of the guide at <http://psych.ubc.ca/internal/human-subject-pool/> in the document entitled “Subject Pool Information for Participants.” You must adhere to the complete instructions detailed in the guide to receive your credits.

Top Hat participation (3%): To get the most out of this course, to learn the material and to prepare for exams, you’ll need to participate actively during. I’ll incorporate Top Hat questions into each lecture to check for understanding and to encourage active participation and discussion. If you answer at least 80% of the Top Hat questions during 80% of the classes during the term, you’ll earn the full 3% for this course component. Please bring a laptop or mobile device to every class (see [UBC Learning Commons](#) if you need to borrow one).

Resources, accommodations and academic honesty

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious and cultural observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the policies and how to access support are available here: <https://senate.ubc.ca/policies-resources-support-student-success>

Bottom line: If you think you may need an accommodation, for any reason, please get in touch, the sooner the better. You can also consult the resource above (and here’s another link, specifically for students requesting disability-related accommodations: <https://students.ubc.ca/enrolment/academic-supports/academic-accommodations-disabilities>). If you run into more immediate difficulties and need assistance, please contact me. I will do my best to support your success during the term. This includes identifying concerns I may have about your academic progress or well-being through Early Alert. With Early Alert, faculty members can connect you with advisors who offer students support and assistance getting back on track to success. Only specialized UBC advisors are able to access any concerns I may identify, and Early Alert does not affect your academic record. For more information about Early Alert, visit <http://earlyalert.ubc.ca>. For information about addressing mental or physical health concerns, including seeing a UBC counsellor or doctor, visit <http://students.ubc.ca/livewell>.

Psychology Department's Position on Academic Misconduct

Cheating, plagiarism, and other forms of academic misconduct are serious concerns of the University, and the Department of Psychology has taken steps to alleviate them. First, the Department uses software that can reliably detect cheating on multiple-choice exams by analyzing the patterns of students' responses. In addition, the Department subscribes to Turnitin, a service designed to detect and deter plagiarism. All materials (e.g., papers, lab assignments) that students submit for grading may be scanned and compared to over five billion pages of content located on the Internet or in Turnitin's own proprietary databases. The results of these comparisons are compiled into customized "Originality Reports" containing several, sensitive measures of plagiarism; instructors receive copies of these reports for students in their class.

In all cases of suspected academic misconduct, the parties involved will be pursued to the fullest extent dictated by the guidelines of the University. Strong evidence of cheating or plagiarism may result in a zero credit for the work in question. According to the University Act (section 61), the President of UBC has the right to impose harsher penalties including (but not limited to) a failing grade for the course, suspension from the University, cancellation of scholarships, or a notation added to a student's transcript.

If you have any questions as to whether or not what you are doing is even borderline academic misconduct, please consult me. For details on pertinent University policies and procedures, see Chapter 5 ("Policies and Regulations") in the UBC Calendar (<http://students.ubc.ca/calendar>).

Equity and Inclusion

Our classroom should be conducive to learning and rigorous intellectual inquiry. It is also a place where everyone should feel included and respected, regardless of race, ethnicity, gender identity, sexual orientation, political and religious affiliations, and visible or invisible disabilities. All students in this class are encouraged to speak up and participate during class meetings. When you do express yourself in class, it's important that you do so in a manner that shows respect for every other member of this class. Please make sure that you're familiar with UBC's policy on maintaining a Respectful Environment on campus and in the classroom: <http://www.hr.ubc.ca/respectful-environment/>

During our discussions, someone could say something someone else perceives to be insensitive. If this happens, it is important to respond responsible manner too. If something is expressed—by me, a TA, or a fellow student—that you perceive to violate goals of equity and inclusion and universal respect, I encourage you to bring it to my attention in whatever way you feel most comfortable doing so. (You can let me know directly, or you can do so anonymously— for instance by asking a third party to relay a message to me.) By doing so, you will be doing a good deed by helping to educate all of us and by promoting an inclusive educational environment.

Psychology Department's Policy on Grade Distributions and Scaling

To reduce grade inflation and maintain equity across multiple course sections, all psychology courses are required to comply with departmental norms for grade distributions. According to these norms, the average grade in 100- and 200-level Psychology courses is 67 for an exceptionally strong class, 65 for an average class, and 63 for a weak class, with a standard deviation of 14. I may have to scale up or down to comply with these norms. Grades are not official until they appear on a student's academic record.

COURSE SCHEDULE

Any changes to this schedule will be announced during lecture and on the course website.

Week	Date	In-class topic	Pagano reading	Deadlines & due dates	In-class event
1	Mon Jan 6	Intro, measurement basics, frequency distributions	Ch. 1-3		
	Wed Jan 8				
	Fri Jan 10			CogLab "Stroop" due at 9am	
2	Mon Jan 13	Percentiles, central tendency, variability	Ch 4		
	Wed Jan 15				
	Fri Jan 17				SPSS Demo 1
3	Mon Jan 20	z-scores, catch-up / review	Ch 5		
	Wed Jan 22				
	Fri Jan 24			Assignment 1 due at 9am	
4	Mon Jan 27	--			Quiz 1
	Wed Jan 29	Correlation, linear regression	Ch 6-7	Qualtrics survey & CogLab "Memory Span" BOTH due at 9am	
	Fri Jan 31				
5	Mon Feb 3	Linear regression, sampling	Ch 8		SPSS Demo 2+3
	Wed Feb 5				
	Fri Feb 7				
6	Mon Feb 10	Probability	(Ch 8)	Assignment 2 + 3 due at 9am	
	Wed Feb 12				
	Fri Feb 14			CogLab "False Memory" due at 9am	
	Feb 17-21	Reading break			
7	Mon Feb 24	Binomial distribution, catch-up / review	Ch 9		
	Wed Feb 26				
	Fri Feb 28	--			Quiz 2
8	Mon Mar 2	Hypothesis testing, sign test, sampling distributions	Ch 10 & 12	Cog Lab "Risky Decisions" due at 9am	
	Wed Mar 4				
	Fri Mar 6				SPSS Demo 4
9	Mon Mar 9	z-test, power			
	Wed Mar 11				
	Fri Mar 13			Assignment 4 due at 9am	
10	Mon Mar 16	Single-sample <i>t</i> -test, effect sizes	Ch 13		
	Wed Mar 18				SPSS Demo 5
	Fri Mar 20				
11	Mon Mar 23	Confidence intervals, catch-up / review			
	Wed Mar 25			Assignment 5 due at 9am	
	Fri Mar 27	--			Quiz 3
12	Mon Mar 30	Two-sample <i>t</i> -tests	Ch 14		
	Wed Apr 1				
	Fri Apr 3				
13	Mon Apr 6	One-way ANOVA	Ch 15		SPSS Demo 6
	Wed Apr 8			Assignment 6 due at 9am Tuesday April 14	