PSYC 218-005: Analysis of Behavioural Data
Winter Term 2, 2021-2022
M/W/F 2-3:50pm, AERL 120
Online home: https://canvas.ubc.ca/courses/85931

TEACHING CONTACTS:

Andrew Rivers, Prof **Office hours:** Weds. 10-11am on *Zoom* In-person hours @Kenny 3110 will be held when permitted by UBC policy **Contact:** amrivers@psych.ubc.ca	
Anita Schmalor, TA **Office hours:** Tues. 10-11am on *Zoom* **Contact:** anita.schmalor@psych.ubc.ca	Brynley Hanson-Wright, TA **Office hours:** Thurs. 9:30-10:30am on *Zoom* **Contact:** brynleyhw@gmail.com

COURSE DESCRIPTION:

Numerical information is an important part of our daily lives. Scientific research, polls and our own informal data-gathering projects (Which car is the best deal? What class did students like the best last term?) are all characterized by interpreting data to support conclusions backed by evidence. This course introduces statistics as a tool for the analysis of quantitative data. We will cover descriptive statistics (how to look for patterns in a large data set), basic principles of probability, and inferential statistics (how to test hypotheses and draw conclusions about data). Becoming familiar with these topics will help you to analyze others' claims about data with a more trained eye, as well as to design, conduct, and analyze data from your own scientific research projects.

By the end of this course, a successful student can expect to be able to:
1. Understand differences between descriptive and inferential statistics
2. Explain *why* we use statistics in psychological science
3. Select appropriate statistical techniques for investigating different types of data
4. Interpret statistical findings from the Null-Hypothesis Statistical Testing (NHST) framework, including strengths and limitations
5. Critique others' (e.g., researchers, media) interpretations of statistical findings
6. Integrate overlapping concepts related to inferential statistics including estimation, error management, effect size, and statistical power
7. Apply learning by calculating descriptive and inferential statistics in the SPSS statistical software package.

REQUIRED MATERIALS

1. Pagano, R. (2012). *Understanding Statistics in the Behavioral Sciences* (10th Ed.)
   Available at:
   a. UBC Bookstore, bundled with Francis & Neath *CogLab* (item 2)
   b. e-book version at www.vitalsource.com
   Note: Earlier editions of the text are **probably** OK to use

2. Francis, G., & Neath, I. (2007). *CogLab Online Version 5.0 Access Code* (5th Ed.)
   Available at:
   a. UBC bookstore packaged with your Pagano text (item 1) or as a stand-alone product if not bundled with Pagano text

3. Cuttler, C. (2021). *A Student Guide to SPSS* (3rd Ed.) Available at:
   a. UBC bookstore
   b. Kendall Hunt: https://he.kendallhunt.com/product/student-guide-spss
   Note: Earlier editions of the text are **probably** OK to use

4. SPSS (or *Jamovi*): You will need to have access to either SPSS or *Jamovi* software
   a. 1-year FREE SPSS subscriptions are available at www.onthehub.com
   b. *Jamovi* is always freely available at www.jamovi.org (guide at: www.learnstatswithjamovi.com)

5. Scientific calculator: You will need a calculator that has both an *inverse* and *square root* functions. Graphing and/or programmable calculators are not permitted during exams.*
   *Applies for in-person exams only

LEARNING ASSESSMENT

ASSESSMENT TYPE	POINTS (%)	DUE DATE(S)
2x Midterm Exam	80 (40%)	2/18 & 3/23
1x Cumulative Final Exam	66 (33%)	TBD
6x Lab Assignments (2-parts each)	48 (24%)	
Part 1: *CogLab* or survey		1/19, 1/26, 2/9, 3/2, 3/16
Part 2: SPSS Assignments		1/28, 2/11, 3/11, 3/30, 4/8
3x HSP Research Experiences	6 (3%)	(Do it *early* in the term!!)
Total	200 (100%)	

Midterm Exams (2x)
There will be two midterm exams each worth 20% of your course grade. If you miss a midterm exam, your final exam will be worth 20% more points. Unless otherwise stated, ALL material covered in lectures, in the textbook, and in lab assignments is testable material on exams.

Cumulative Final Exam (1x)
The final exam will be cumulative and will be worth one third of your grade. The date and time will be determined by the registrar. Do not book any trips out of town until the date of the final exam is determined.

Lab Assignments (6x)

There will be 6 total lab assignments in which you will first complete an online experiment using *CogLab* or a survey, and then using SPSS, we will analyze data from class responses. For each Lab Assignment you will need to:

1. **Complete the listed experiment or survey** – each takes about 10-20 minutes to complete. If you do not complete the *CogLab* (or survey) component, 25% will be deducted from your final point total for the paired lab assignment (or 1% of your total course grade).
2. **Complete the SPSS assignment** – each assignment will vary in length depending on the topics covered. One week before the assignment deadline, there will be an in-class demonstration of the SPSS skills needed to complete the SPSS assignment. You will be penalized 2 points (or 25%) for each day that the assignment is late.

You are encouraged to meet with your TA's, other students, and/or Prof Andrew to discuss challenges as you work through the SPSS assignments. However, **you absolutely MUST analyze the data and write-up your findings ON YOUR OWN**.

HSP Research Experiences (3 credits)

Learning about and evaluating psychological science requires a working knowledge of *epistemology*—how do we know what we know? What do psychological experiments 'look' like? One excellent way to acquire this knowledge is to actively participate in psychological research. Students will participate in at least 3 hours of accredited psychology experiments at UBC (1% for each participation credit). To sign up for research experiences, see https://ubc-psych.sona-systems.com

As an alternative to participating in studies, students can complete writing projects, in which you read and summarize a research article. See the HSP website for detailed information including due dates and submission procedures for the writing projects.

BONUS *Oops! Token*

Even if we are diligent in keeping up with course material and diligent in our planning for the weeks ahead, ***sometimes _____ happens!*** Each student will receive an ***Oops! Token*** that they can use once during the term. The token may be used in the following ways:

- "Oops, I forgot to complete my *CogLab*!"
    - If you use the ***Oops! Token***, I will not penalize your corresponding SPSS/*Jamovi* submission.
- "Oops, I submitted my SPSS/*Jamovi* assignment after the deadline!"
    - If you use ***Oops!***, I'll accept your submission with no penalty for up to one week.
- "Oops, it's the end of the term and I don't see any more HSP studies available!"
    - If you use ***Oops!***, you'll receive 1 free HSP credit.

> **Fine Print:** The ***Oops Token!*** is a 'no questions asked' benefit, you can use it whenever you'd like and for whatever *oops!* might have happened. The ***Oops Token!*** CANNOT be used for any of the exams but note that you can miss one midterm exam and have the weight added to your final exam.

To use the ***Oops Token!***, please complete the ***Oops Token!*** quiz on Canvas. You can choose any of the above options, and can change your mind by re-taking the survey at any time. I will apply your ***Oops Token!*** at the conclusion of the term.

MISCELLANEOUS COURSE POLICIES:

Lecture Recordings & Lecture Notes: I will record and post audio from lectures covering class material. I do not take attendance for classes and there are no participation points assigned during in-person lecture. Note that there are tasks (e.g., Group article reviews, group lab work) that must be completed while communicating as a small group. Lecture slides in .pdf form will also be posted online.

Email Policy: Please include "PSYC 218" in the subject heading of all emails. I will attempt to respond to questions within 24 hours. Emails will rarely be answered over weekends or holidays.

Meetings: Meetings, either during listed student hours or scheduled via email, are the best way to ask questions about course material. I encourage everyone to take advantage of scheduled student hours and note that I am *happy* to schedule individual meetings with you ☺

PSYC 218 Prerequisites: PSYC 218 requires completion of PSYC 217 and a declared major in Psychology, Cognitive Systems, or Speech Sciences. PSYC 218 is a program requirement to receive a BA degree in Psychology.

Psychology Department's Policy on Grade Scaling: In order to reduce grade inflation and maintain equity across multiple course sections, all psychology courses are required to comply with departmental norms regarding grade distributions. According to departmental norms, the mean grade in a 200-level class is 72 *for a good class*, 70 *for an average class*, 68 *for a weak class* with a standard deviation of 14 percentage points. Scaling is likely to be used in order to comply with these norms; grades may be scaled up or down as necessary by the professor, department, or school. Therefore, grades are *never* official until they appear on your academic record.

Note: A excellent discussion of the rationale for grade scaling by a UBC Psychology professor is available here: https://www2.psych.ubc.ca/~schaller/scaling.htm

Reach out and ask for help if you need it

University students often encounter setbacks from time to time that can impact academic performance. If you run into difficulties and need assistance, I encourage you to contact me by email and we can coordinate a meeting (or not if you'd prefer to stick to email). I will do my best to support your success during the term. This includes identifying concerns I may have about your academic progress or wellbeing 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, visit www.earlyalert.ubc.ca

For information about addressing mental or physical health concerns, including seeing a UBC counsellor or doctor, visit students.ubc.ca/livewell

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Healthy Lifestyles

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 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 on the UBC Senate website.

Diversity and Inclusion

Diversity and Inclusion: Similar to the broader UBC community, the Psychology Department—and this class—seeks to build a community where students feel included and are treated equitably. This class aims to be inclusive of gender identity, gender expression, sex, race, ethnicity, socioeconomic background, sexual orientation, political and religious affiliation, ability, health, and age (this is not an exhaustive list!). Students, instructors, visitors, and readings may sometimes raise controversial and/or sensitive issues. Respectful and productive discussion is encouraged, and students should feel safe to explore ideas without fear of being judged. Our goal is not to always agree, but rather to disagree without being threatening or alienating. However, if a statement or behaviour is likely to offend others or make others feel alienated in any way, it should not be shared with the class (but can be shared with me after class or in student hours). If at any point you feel offended, threatened, or alienated by anything that happens in our class, please feel welcome to let me or a TA know.

COVID-19 Policy Supplement:

COVID-19 Safety: You are required to wear a non-medical mask during our class meetings, for your own protection and the safety and comfort of everyone else in the class. For our in-person meetings in this class, it is important that all of us feel as comfortable as possible engaging in class activities while sharing an indoor space. Non-medical masks that cover our noses and mouths are a primary tool for combating the spread of COVID- 19. Further, according to the provincial mandate, masks are required in all indoor public spaces including lobbies, hallways, stairwells, elevators, classrooms and labs. There may be students who have medical accommodations for not wearing a mask. Please maintain a respectful environment.

Please note that this term's schedule is subject to change based on the Provincial and University guidance. I will attempt to adhere to the policies outlined in this syllabus, but ask that we all try to be as accommodating and flexible as we can during this challenging term. I will announce any major changes in class and through our Canvas 'Announcements' – please check your email regularly for updates.

If you are sick, it is important that you stay home. Complete a self-assessment for COVID-19 symptoms here: https://bc.thrive.health/covid19/en Classes are optional and supplemental material (class recordings, lecture slides, and previous recorded videos of content) will be available on Canvas so that you can prioritize your health and still succeed.

If you miss class because of illness:
- Make a connection early in the term to another student or a group of students in the class. You can help each other by sharing notes. If you don't yet know anyone in the class, post on the discussion forum to connect with other students.
- Consult the class recordings, lecture slides, and lecture videos on Canvas
- Ask any questions you have on Piazza, or
- Ask myself or a TA any questions you have
- Attend Zoom office hours
- If you are concerned that you will miss a key Lab activity due to illness, contact either Prof. Andrew or a TA to discuss

If you attend class and are clearly ill, I will ask you to return home. We can discuss what you missed later in a one-on-one meeting – let's do our best to keep each other healthy!

If you are feeling ill at the time of a final exam, you must apply for deferred standing (an academic concession) through Arts Academic Advising. Students who are granted deferred standing (SD) will write the final exam/assignment at a later date.

If I am feeling ill: If I am unwell, I will not come to class. I will make every reasonable attempt to communicate plans for class as soon as possible using Canvas 'Announcements.' No matter what the plans are, the classroom will still be available during our normal class time for you. Here is the hierarchy of options if I am sick:
> 1. If I am feeling well enough, I will host class on Zoom
> 2. If I am not feeling able to host class on Zoom, then I will upload recorded videos covering course content for the missed session(s)
> 3. If I am not feeling able to upload recorded videos, then I will ask a TA or another instructor to substitute for me

WEEK	DATE	Topic	Read	Notes
1	1/10-14	Measurement Basics & Frequency Distributions	Ch. 1-2	
2	1/17-21	Percentiles, Central Tendency, & Variability	Ch. 3-4 SPSS 1&2	*CogLab* 'Stroop' due Weds **SPSS Demo 1** Friday in class
3	1/24-28	Normal Curve, *z*-scores, Correlation	Ch. 5-6	**Qualtrics survey 1** & *CogLab* 'Memory Span' both due Weds **SPSS Assignment 1** due Friday
4	1/31-2/4	Linear Regression	Ch. 7 SPSS 3&4	**SPSS Demo 2/3** Friday in class
5	2/7-11	Sampling & Probability	Ch. 8	*CogLab* 'Change Detection' due Weds **SPSS Assignment 2/3** due Friday
6	2/14-18	Probability & Midterm Exam		**Midterm Exam on Friday** Covering Ch. 1-8
2/21-25		**No Class: Reading Break**		
8	2/28-3/4	Binomial Distribution & Sign Test	Ch. 9-10 SPSS Ch. 6	*CogLab* 'False Memory' due Weds **SPSS Demo 4** Friday in class
9	3/7-11	Power & Sampling Distributions	Ch. 11	**SPSS Assignment 4** due Friday
10	3/14-18	Distribution of the Mean & *z*-test	Ch. 12 SPSS Ch. 7	*CogLab* 'Risky Decisions' due Weds **SPSS Demo 5** Friday in class
11	3/21-25	Single-sample *t*-test	Ch. 13	**Midterm Exam 2 on Wednesday**
12	3/28-4/1	Student's *t*-test	Ch. 14	**SPSS Assignment 5** due WEDNESDAY **SPSS Demo 6** Friday in class
13	4/4-8	Introduction to ANOVA	Ch. 15	**SPSS Assignment 6** due Friday
-		**FINAL EXAM**		**TBD**