

VERSION 8: 1ST APRIL 2024
 PSYC 218 SECTIONS 007 AND 009
ANALYSIS OF BEHAVIOURAL DATA



WHAT IS THIS COURSE ABOUT?

At its core, this course centers on comprehending human behaviour. Our approach? Delving into a realm possibly unfamiliar to many: the world of statistics. Statistics are essential tools in psychology and various fields, aiding researchers in uncovering insights into human actions and motivations. They are not mystical entities that provide exact answers but instruments that offer valuable perspectives when interpreted accurately. There's no need to be intimidated by statistics; they involve calculations and technological aids. However, the crux lies in how we interpret these numbers to test hypotheses and enhance our understanding of people.

Remember, this is an introductory course. We won't be covering every facet of statistics. Certain concepts may not directly connect to behaviour analysis but form a vital foundation for real-world application and further academic pursuits. This course might pose challenges for many. However, by staying diligent, keeping pace, seeking assistance when necessary, and engaging actively, you'll embark on a journey toward statistical proficiency and a deeper understanding of human nature. Along this journey, you might also discover new insights about yourself.

MEETINGS AND SPECIAL CIRCUMSTANCES

This course incorporates a blend of independent tasks, collaborative activities with your peers, and collective exercises we'll undertake as a group. As with all my courses, consistent and active participation is critical to achieving success. Classes are scheduled in **Woodward IRC room #5** (section 007) and **Chemistry room D300** (section 009) as follows:

- Section 007** Tue/Thu from 11:00 to 12:30.
- Section 009** Tue/Thu from 14:00 to 15:30.

For guidance on effective online learning setups and strategies, please visit <https://keeplearning.ubc.ca/>. Additionally, if you require further assistance beyond what's outlined in the syllabus, don't hesitate to reach out.

Please note that our classes are exclusively in-person. While we will provide recordings for the SPSS workshops, regular class sessions will not be recorded.

MEET OUR TEACHING TEAM

For information on contacting us, including office hours, please see our Communication and Support Guide in Course Introduction module on Canvas.

INSTRUCTOR. Dr. Rafal Skiba
Postdoctoral Research and Teaching Fellow
 Please use *Canvas Inbox* rather than email (rskiba@psych.ubc.ca).

TEACHING FELLOWS. TFs are here to help you learn and help me evaluate your learning. They will lead SPSS tutorials, grade, and respond to questions. You can reach out to anyone.

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COURSE GOALS

The course objectives have been thoughtfully crafted to guide our learning activities and assessments. If you're ready and able to meet the course requirements, by the end of this course, you will be capable of:

1. Comparing, contrasting, and critiquing descriptive statistics, including effect size, and inferential statistics, particularly the Null Hypothesis Significance Testing (NHST) method.
2. Calculating a range of statistics commonly used in psychology, such as correlation, regression, z-scores, t-tests, and ANOVA, both manually and using computer software.
3. Selecting and applying the most suitable statistical method to analyze a dataset, given a study’s design and the researcher's objectives.
4. Interpreting the implications of your calculated statistics in relation to the variables and hypothesis.
5. Evaluating the interpretations of statistical analyses made by others.
6. Discussing the strengths and limitations of various statistical tests and the NHST framework more broadly.
7. Defining and examining the interconnections among key statistical concepts, including alpha, effect size, power, and sample size.
8. Developing an appreciation for the importance of statistical literacy.

MATERIALS NEEDED

You’ll need a few materials to set yourself up for success. Detailed instructions and links are available in the Course Introduction module on Canvas.

Please buy the textbook (start with a 2-week trial) and lab guide through the UBC bookstore to ensure correct access. *Always save your proof of purchase.* If you purchase elsewhere or second hand, I cannot help you fix/integrate your access (but see below for financial hardship information).

Essential (e-)Books

1. **TEXTBOOK with MindTap Access – needed Week 1, especially for math refresher resources.** Gravetter, F. J., & Wallnau, L. B. (2017). Statistics for the behavioural sciences (10th ed.). Cengage Learning.

Note: It is necessary to purchase the electronic version of the textbook through the bookstore to benefit entirely from it. The textbook is accompanied by the MindTap platform, which is essential for completing a portion of the assignment. Notably, the MindTap version includes videos that provide step-by-step explanations of calculations and problem-solving techniques.

Please begin by signing up for Temporary Access (through the Canvas module). You will gain access to MindTap until 11:59 PM on 01/22/2024. This will get you started and enable you to try out the first MindTap quizzes and other resources. To get most of the textbook, please access and read each chapter through MindTab. You can watch video tutorials and access other resources when accessing the chapters through Canvas.

2. **LAB GUIDE – not needed until Week 4. Cuttler, C. (2020). A student guide to SPSS, (3rd Ed.). NJ: Kendall Hunt.** This guide, including software screenshots and detailed tips, will be indispensable for completing the assignments throughout this course.

Essential Sites, Software, and Technology

3. **A calculator** that can quickly do squares and square roots. You will have to use it during tests. You will not be able to use your cell phone. Here is an example of a calculator suited for this course: link to [Amazon](#).
4. **A computer.** You will need a computer that can run SPSS and MS Word software. Chromebooks and tablets will not be able to run SPSS.
5. **PSYC 218 007/009 Canvas:** Our primary hub for this course is the Canvas website at canvas.ubc.ca. Here, you will find all the details related to assignments and their submission. To communicate with me, please use the Canvas Inbox

and rely on the Calendar feature to stay organized. The site functions optimally with the Chrome browser. Don't forget to check your Account settings, specifically 'Notifications,' to ensure you're up-to-date with all announcements and important notices.

- 6. **IBM SPSS Statistics Software** – Required from Week 4: To complete assignments, you must use IBM SPSS Statistics Software, which you can download for free through [UBC IT](#). It's advisable to download and install the software as early as possible to provide ample time to overcome any installation challenges. You won't need SPSS until Week 4, but early preparation is critical.
- 7. **Microsoft Word Software – not needed until Week 4.** You must complete assignments using MS Word (.pages files don't work). Please download [MS Office 365 for free from UBC IT](#).

Financial Hardship:

Should you face significant financial difficulties preventing you from acquiring the e-textbook or the SPSS guide, please don't hesitate to contact me. I have made arrangements with the publishing company to secure access for students experiencing financial

challenges. See also the [Student Discounts for Remote Learning](#) page.

FITTING THIS COURSE IN YOUR DEGREE

Pre/Co-Requisites. Enrollment in this course necessitates completing PSYC 217 Research Methods and a declared major in Psychology, Cognitive Systems, or Speech Sciences. This course is a mandatory requirement for the BA in Psychology major. Additionally, it serves as a prerequisite for pursuing Honours in Psychology and is required for enrolling in advanced statistics classes within our department, such as PSYC 303 and PSYC 359.

Are you thinking About Withdrawing? Be aware that this course is challenging, regardless of the year, term, or format in which you take it. If you find the course too demanding now, I urge you to discuss it with me. For information on how withdrawing might impact your academic record, please visit [Dates and Deadlines | UBC Academic Calendar](#) to understand the implications for your transcript.

LEARNING ASSESSMENTS

Learning Assessment	Due Date	Value (% of final grade)
1. Assignments (All 218 Sections Requirement)	1. Friday, February 9 (4%) 2. Friday March 1 (5%) 3. Friday, March 15 (5%) 4. Friday, March 29 (5%) 5. Friday, Apr 12 (5%)	24%
2. Research Experience Component (Human Subject Pool Participation; All 218 Sections Requirement)	Complete by the last day of classes. Be sure to assign your credit value to this course!	3%
3. Weekly Participation	Throughout the term	3%
4. MindTap Problem Set Quizzes	Due on the same day as each Test (Midterm)	4%
5. Midterm 1	Thursday, February 1	12%
6. Midterm 2	Thursday, February 29	12%
7. Midterm 3	Thursday, March 28	12%
8. Final Exam (Cumulative)	April 23	30%
Total		100%

ASSIGNMENTS (5, THE 1ST AT 4%, 2ND -5TH AT 5%, TOTAL: 24%)

Assignments play a crucial role in the PSYC 218 curriculum. Throughout the term, you will engage in five lab assignments designed to enhance your practical skills in data analysis and reporting results. These assignments consist of two main steps, with an additional note regarding the data sources for the first and subsequent assignments.

Assignment Structure:

Preparation: Your first task involves preparing for the assignment. This includes studying the relevant chapter(s) from Cuttler's "A Student Guide to SPSS." These chapters are critical for understanding the necessary SPSS functions, and they are complete with detailed instructions and screenshots. Additionally, participation in In-Class SPSS Practice Labs is vital. These labs will occur five times during the term, offering practical demonstrations and exercises directly related to your assignments.

Completion: After each in-class SPSS demonstration, an assignment will be posted on Canvas for you to complete independently. These assignments will involve analyzing and interpreting data. For the first assignment, you will work with data collected in the classroom. For subsequent assignments, the focus will shift to analyzing data from peer-reviewed academic articles. Each assignment is generally due within a week; specific deadlines can be found in the Course Schedule.

Late Submission Policy:

All assignments are due by 11:59 PM PT on Fridays, as indicated in the Course Schedule. If extra time is needed, you can submit your work over the weekend, up until 11:59 PM PT on Sunday. Please note that submissions made after this extended deadline will incur a 5% grade reduction for each day late.

RESEARCH EXPERIENCE COMPONENT (REC) (3%)

The Research Experience Component (REC) is a vital part of the PSYC 218 curriculum, accounting for 3% of each student's overall grade. Its purpose is to deepen your understanding of psychology and research methodologies, offering you an immersive experience in psychological research.

To fulfill the REC requirement, students have two options. The first is participating in three-hour psychology studies through the Department of Psychology's Human Subject Pool (HSP) system. Each hour of study participation, or each completed article summary, equates to 1% of the REC component, up to a total of 3%. To enroll, visit UBC Psychology's Sona Systems (<https://ubc-psych.sona-systems.com>). Alternatively, you can opt for the library-writing project, which involves reading and summarizing a peer-reviewed research article to earn the same credits.

More information about earning extra credits through these methods, including a detailed guide on participating in the HSP, instructional videos, and a list of FAQs, can be found on the UBC Psychology HSP webpage (<https://psych.ubc.ca/hsp>). It's important to note that, consistent with other courses in PSYC 217 and 218, participation in the REC is mandatory. Unlike some courses, there are no additional bonus points available through HSP participation.

WEEKLY PARTICIPATION (CANVAS DISCUSSION AND ICLICKER) (3%)

In this course, you'll be involved in weekly activities designed to maintain your engagement, enhance your competence, and allow me to assess your learning progress. These activities are integral to the course, contributing 3% to your overall grade. Each activity's impact on your grade is minimal, yet collectively, they are significant. The weekly activities include iClicker Cloud quizzes conducted during class time, completion of surveys assigned by your instructor, and graded Canvas discussion forums. Please check your Canvas for new activities that must be completed within a given week.

Class iClicker Cloud Quizzes: Engaging you in active learning during lectures, we will utilize iClicker Cloud. This tool enables you to respond to questions in class, fostering real-time participation. Your responses, recorded through the iClicker Cloud, are essential for your engagement. Remember, while participation is crucial, the correctness of your answers will not impact your grade. This approach allows you to focus on learning and understanding rather than just on correctness.

MINDTAP PROBLEM SET QUIZZES (4%)

These quizzes have four separate deadlines. You must complete it before each midterm and the final (refer to the course schedule for specific dates). You will only be graded for the completion of these quizzes. Each problem set has three attempts. If you fail to solve the problem correctly, MindTap will provide you with feedback and another effort to solve the problem. You will have a maximum of three attempts for each question. I will not grade your performance but your attempt. That said, if you fail the first attempt and do not start another one, it will be classified as a missed assignment, and you will receive zero points.

MIDTERMS 1, 2, AND 3 (12% EACH, TOTAL 36%)

Each midterm test will be worth approximately 25-30 points and take from 50-60 min, conducted during class, and involve paper-based exams and Scantrons. You must bring a pencil for each test to mark your answers on the Scantron. These tests will assess your comprehensive understanding of the course material, including your ability to apply and integrate concepts from relevant chapters/units. Note that tests are not cumulative and will only cover material taught since the previous test. The format will include multiple-choice questions, fill-in-the-blanks, and written responses. All tests will be closed-book, but I will provide the necessary formula sheets and tables. You are responsible for bringing a calculator and pencil to each test.

By default, tests will be valued at 12% each.

If you missed a test due to a valid medical emergency supported by proper documentation, you can retake the test up to 48 hours after the test date. Please get in touch with me for more details. If you need more time to complete each midterm, I suggest you request an [academic concession](#).

FINAL EXAM (CUMULATIVE, 30%)

The Registrar will schedule the final exam during the official exam period, which will be conducted in the same manner as the midterms. The final exam will encompass the entire course content, evaluating your ability to apply and integrate concepts from all chapters/units. It will include multiple-choice, fill-in-the-blanks, and written questions.

The final exam will cover the entire term's content and have a 2.5-hour time limit. The last will be a closed book, but I will provide the necessary formula sheets and tables. You are responsible for bringing a calculator and pencil to each test. The final exam will be valued at 30%,

[University policy](#) dictates that if you have three or more exams scheduled to *start and finish* within 24 hours, you may request to write the second exam on a different day. It would be best if you gave the instructor of the second exam one month's notice.

COMMUNICATION

I will send you an announcement with a list of activities for each week of the class. You should expect an announcement every Monday.

If you have a question about course material, you should first post your question on the proper discussion forum in Canvas. All questions about course content, statistics, and assignments should be posted on Piazza, which you

can access through Canvas. Your colleagues, TA, and instructor monitor Piazza and will answer your questions there.

If you have a personal matter, such as an illness, you should email your TA and then your *instructor*. *If we do not reply in 72 hours, please email us again.*

UNIVERSITY POLICIES

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 academic community members. Harassment and discrimination are not tolerated, nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and religious observances. UBC values intellectual 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](#).

ACADEMIC INTEGRITY

Cheating, plagiarism, and other forms of academic misconduct are serious concerns. Please review Academic Honesty and Standards and Discipline for Academic Misconduct on the UBC Calendar for the university policy on cheating, plagiarism, and other forms of academic dishonesty and the consequences of academic misconduct. Also, visit the Learning Commons Academic Integrity for information on academic integrity and tips on appropriate citation of sources.

Evidence of cheating or plagiarism may result in zero credit for the work. In cases of academic misconduct, UBC has the right to impose harsher penalties, including (but not limited to) a failing grade for the course, suspension or expulsion from the University, cancellation of scholarships, and a notation on the student's transcript.

Unless otherwise specified, all graded work in this course will be original work independently. This is your education. You are investing considerable time, effort, and money into it. You won't use someone else's work to develop the critical thinking skills this education provides (which you will use in your professional and personal adult life).

Navigating the ethical landscape of Generative Artificial Intelligence (GenAI), such as ChatGPT, in academic settings is complex. I advise caution in using GenAI tools for your course assignments. While these tools might offer assistance, they can also diminish your personal learning experience and raise questions about the authenticity of your work. That said, completely prohibiting their use doesn't seem entirely fair either. If you decide to use ChatGPT or similar tools for brainstorming, deriving partial answers, or drafting any portion of your assignments, you must openly acknowledge this. Briefly explain how you used the tool and attach any text it generated. Using this tool will not result in a penalty, but be aware that we will focus on evaluating your contributions rather than the AI-generated content. Not disclosing the use of GenAI tools will be treated as a breach of academic integrity (academic misconduct).

LEARNING ANALYTICS

Learning analytics includes collecting and analyzing data about learners to improve teaching and learning. Canvas provides analytics by capturing data about your activity and providing information that can be used to improve the quality of teaching and learning. In this course, I plan to use analytics data to:

- View overall class progress

- Assess overall class understanding (via statistics on quizzes and exams)
- Review statistics on course content being accessed to support improvements in the course
- Track participation in discussion forums
- Assess your participation in the course

HEALTH CONCERNS / PERSONAL MATTERS

If you are experiencing psychological or physical ill health, please arrange an appointment with your GP, or you can assess UBC's Student Health Services. Please don't hesitate to contact me if you are in need and if any barriers are preventing you from determining any resources. Also, please get in touch with me if there is a way I can help accommodate any of your needs in this course. Suppose you require an extension or have missed a midterm, in the first instance. In that case, you should aim to contact your Faculty Academic Advising office and supply any evidence of your circumstances that you may have. They will liaise with me regarding a new assignment deadline or alternate time to sit the referral midterm. Please see the final page of the syllabus for further details.

If you're sick, it's essential that you stay home – no matter what you think you may be sick with (e.g., cold, flu, other). If you think you might have COVID symptoms and/or have tested positive for COVID and/or are required to quarantine, You can do a self-assessment for COVID symptoms here:

<https://bc.thrive.health/covid19/en>.

Do not come to class if you are sick, have COVID symptoms, have recently tested positive for COVID, or are required to quarantine. This precaution will help reduce risk and keep everyone safer. In this class, the marking scheme is intended to provide flexibility so that you can prioritize your health and still be able to succeed. You must contact me (Dr. Skiba) to decide on the best assessment of your performance in this class.

If you do 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 know anyone in the class, post on the discussion forum to connect with other students.
- Consult the class resources on Canvas.
- Use the discussion forum (Canvas and Piazza) for help
- Come to office hours (they will be online, so you can join from anywhere).
- See the marking scheme for reassurance about what flexibility you have.
- If you are concerned that you will need to miss a particular critical activity due to illness, contact us to discuss.

PSYCHOLOGY DEPARTMENT POLICIES

Departmental Grading Policy for 2022W: To curb grade inflation and ensure fairness across all sections, all psychology courses must adhere to the department's standard grade distributions. For 100- and 200-level Psychology courses, the average grade will be set at 72 for powerful classes, 70 for average classes, and 68 for less strong classes, with a standard deviation of 14. The average grades for 300- and 400-level courses will be 75, 73, and 71, respectively, with a standard deviation of 13. Grade scaling, either upwards or downwards, may be implemented by the professor or the department to align with these norms. Please note that grades are not official until they are recorded on your academic transcript. In this course, you will receive both a percentage and a letter grade, which will be converted based on UBC's standard grading scale.

A+	90-100%	B+	76-79%	C+	64-67%	D	50-54%
A	85-89%	B	72-75%	C	60-63%	F	0-49%
A-	80-84%	B-	68-71%	C-	55-59%		

ACKNOWLEDGEMENTS AND COPYRIGHT

I want to thank Dr. Catherine Rawn for showing me how she approaches teaching statistics.

All materials of this course (course handouts, lecture slides, assessments, course readings, etc.) are the intellectual property of the Course Instructor or licensed to be used in this course by the copyright owner. Redistribution of these materials by any means without the permission of the copyright holder(s) constitutes a breach of copyright and may lead to academic discipline.

UBC's Point Grey Campus is located on the traditional, ancestral, and unceded territory of the $\chi\omega\mu\alpha\theta\kappa\omega\acute{\gamma}\alpha\mu$ (Musqueam) people. The land it is situated on has always been a place of learning for the Musqueam people, who for millennia have passed on their culture, history, and traditions from one generation to the next on this site.



OUR CLASS SCHEDULE

This plan is subject to change. Changes will be announced on Canvas.

Please be aware that the start of the course is quite intensive. It's crucial to keep up with the pace. Initially, the course covers concepts that may already be familiar to many students, allowing us to progress rapidly and allocate more time for the more challenging concepts later in the course.

Remember, the concepts in this course are cumulative and become progressively more complex in each subsequent unit. Should you find yourself falling behind, it's important to reach out to any member of the Teaching Team at the earliest opportunity for assistance in catching up.

Wk	Class Dates	Tuesday	Thursday
1	January 9, 10	Course Orientation Ch 1 Intro to Statistics	Ch 1 (continued) Appendix A: Basic Math Ch 2 Frequency Distributions
2	January 15, 17	Ch 2 (continued)	Ch 3 Central Tendency
3	January 22, 25	Ch 3 (continued) Ch 4 Variability	Ch 4 Variability Ch 5 z-Scores
4	Jan 30, Feb 1	Ch 5 z-Scores	☛ Test 1 (Chapters 1-5) <i>In-Class SPSS Practice Lab #1</i> <i>MindTap Problem Set (Chapters 1-5) Deadline</i>
5	February 6, 8	Ch 6 Probability Ch 7 The Distribution of Sample Means	Ch 7 The Distribution of Sample Means Ch 8 Hypothesis Testing ☛ Assignment 1 Due (on Friday)
6	February 13, 15	Ch 8: (continued)	Ch 8 (continued)
	February 19 - 23	<i>No classes: Reading Week Family Day (Canadian Holiday)</i>	<i>No classes: Reading Week</i>
7	February 27, 29	Ch 8 (continued)	☛ Test 2 (Chapters 6-8) <i>MindTap Problem Set (Chapters 6-8) Deadline</i> ☛ Assignment 2 Due (on Friday)
8	March 5, 7	Ch 9 t Statistic	Ch 10 t-test for Two Independent Samples <i>Practice Lab #3</i>
9	March 12, 14	Ch 10	Ch 10 ☛ Assignment 3 Due (on Friday)
10	March 19, 21	Ch 10	Ch 11 t-test for Two Related Samples <i>In-Class SPSS Practice Lab #4</i>
11	March 26, 28	Ch 12 ANOVA	☛ Test 3 (Chapters 9-12) <i>MindTap Problem Set (Chapters 9-11) Deadline</i> ☛ Assignment 4 Due (on Friday)
12	April 2, 4	Ch 12 ANOVA	Ch 15: Correlation
13	April 9, 11	Ch 16 Regression <i>In-Class SPSS Practice Lab #5</i>	Ch 16 (continued) <i>Last Day of Classes (review)</i> ☛ Assignment 5 Due (on Friday)

- April 23: **Final Exam**