



## Introduction to Data Analysis

PSYO 271-101, Summer Term 2, 2022

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Instructor	Zak Draper
Class	EME 1202
Office	ART 367
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Office Hours	Mondays, 3:30–4:30 or by appointment
Textbook	<i>Statistics for the Behavioral Sciences</i> , by Gravetter, F. & Wallnau, L. B. Wadsworth Publishing. 10 <sup>th</sup> Edition.

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### CANVAS

Course materials will be available on Canvas.

### LEARNING OBJECTIVES

The goal of this course is to provide students with an understanding of the basic principles of behavioural data analysis in the context of the research methods and designs of Psychology.

### STUDENT OUTCOMES

By the end of the course, students are expected to be able to do the following:

- Have a complete enough understanding of both descriptive and inferential statistics so that they will be able to perform common statistical procedures and answer questions on the underlying theory.
- Develop and express an understanding of the role of probability and statistics within psychological research, and that includes the ability to discuss their basic concepts and practical applications.
- Differentiate between statistical tests to choose the appropriate test and to answer specific research questions.

### FORMAT

There are three components to this course:

- 1) **Practice:** Practicing the material each week is the key to doing well in this course. The course is structured in such a way as to build in lots of practice activities through your homework. However, you are highly encouraged to complete additional practice activities.
- 2) **Lectures:** The lectures will cover the same material as the textbook readings. However, the lectures will provide you with additional examples and will allow you to hear different explanations of each concept. To combat boredom, each lecture

will build in lots of practice, examples, and participatory activities. Attending the lectures and participating actively is an important part of this course.

- 3) **Textbook:** The textbook for this course is well-written and has strong explanations of each concept that we will cover. The textbook also contains practice exercises, which you are highly encouraged to complete each week. The textbook is there to supplement your learning. It is recommended but not required that you read the textbook chapter(s) for a given topic prior to attending the lecture on that topic.

### **SUPPORT AND RESOURCES**

Students who have done well in this course in the past have sought additional support when they needed it. My goal in this course is to provide you with as many support resources as possible. Here is a list of some sources of support that you can seek on campus or via the course.

- 1) **Office Hours:** I will be holding regular office hours. If you are having trouble understanding a concept, please attend and ask any questions you have. If my posted office hours do not fit with your schedule, please contact me so we can set up a different time to meet.
- 2) **PowerPoints:** While we will be using a textbook for the bulk of the material, sometimes it is useful to read a different source if you do not understand the textbook and/or lecture explanation of a concept. When additional resources are available, they will be listed in the Notes section of each PowerPoint. If you have trouble accessing a resource, please let me know and I will help you.
- 3) **Student Learning Hub:** The SLH is a resource on campus that offers appointments with learning strategists. These individuals can help you set goals for your learning, develop a study schedule, and work on note-taking skills, among other useful strategies. You can learn more and book an appointment here: <https://students.ok.ubc.ca/academic-success/learning-hub/>
- 4) **Study Buddies:** We will take some time in class to make sure that everyone is paired with at least one study buddy. If you would like to have a larger study group, that is fine too. You can use your peers as resources to help each other understand the topics covered in this course.
- 5) **Additional Resources:** If there are additional resources that would be helpful for you to have in order to succeed in this course, please meet me during office hours or email me to let me know.

## EVALUATION

Your final grade in this course is derived from three sources. The grading rubrics for the homework are available on Canvas.

- 1) **Exams:** The course will include one closed-book midterm and one closed-book cumulative final exam. The midterm will be 75 minutes in duration and the final exam will be 150 minutes in duration. Both exams will include a set of multiple-choice questions as well as 'long-answer' questions where you will be required to demonstrate the process that you used to obtain the answer. Please note that the bulk of the marks for these long-answer questions will be based on your process, not your final answer. As such, showing your work is essential.
- 2) **Homework:** There will be homework assigned for each lecture. The homework will always be due at the beginning of class on Tuesdays. Generally, each homework assignment will consist of multiple-choice and long-answer questions that will be marked for content and completion. Generally, homework should be submitted in class. However, homework assignments can be submitted online if you are unable to attend class.

Assessment	Percentage
Midterm Exam	35%
Final Exam	35%
Homework	30%

**APPROVED CALCULATOR** A basic calculator with a square root and memory function is necessary for course work. Sophisticated calculators with built-in or programmable statistical functions are **NOT** permitted and **CANNOT** be used during examinations. It is recommended that you use an approved calculator when completing all unit tests and homework to ensure you are comfortable and familiar with the calculator you will be using during your exams. Should you arrive at either of the exams with an unacceptable calculator then it will be removed, and you will be forced to complete the exam with paper and pencil only. It is your responsibility to ensure that you have an approved calculator for the exam.



## PREREQUISITES

One of PSYO 111, PSYC 111 and one of PSYO 121, PSYC 121. Registration in the Psychology Majors program [B.A. or B.Sc.].

## SEQUEL COURSES

Students in the Honours Psychology programs [both B.A. & B.Sc.] are required to take two more research methods / statistics courses as part of their programs. To be admitted to the first course in the series [i.e., PSYO 372], students must attain a minimum grade of

80% in this course and in PSYO 270; to get into PSYO 373, students will need a minimum of 76% in PSYO 372.

Entry into PSYO 372 will be based on academic performance in Psychology courses: We will initially have everyone interested in PSYO 372 go on a waitlist. We will then rank order applicants based on their Psychology weighted average. Entry will depend on the number of seats we ultimately decide to open, but currently we expect there to be 35 openings. Entry into PSYO 373 is also limited by space.

If you are completing a Major, you are not required to take any more stats/methods courses, but you are advised that these courses would be helpful if you are planning to attend graduate studies in psychology or related social sciences. Taking PSYO 372/373 will keep your options open for doing an Honours degree at a later date. There is a provision for students to return to the University and upgrade their Major in Psychology to an Honours in Psychology by taking the Honours thesis and additional psychology credits. If you already have PSYO 372/373, this can be done in one academic year; if not, it will likely take two academic years. Entry into these courses is limited and does not guarantee admissions to the Honours programs.

### **LATE/MISSED ASSIGNMENTS & EXAMS**

Points for graded components may not be made up. You can receive a no-questions-asked 2-day extension on Homework three times over the course of the semester. To do so, please email me and let me know that you would like to request the extension—you do not need to provide a reason. If, at the end of the extension, your work has not been submitted, you must meet with me within three days to discuss the situation and set a schedule for completion or receive a zero.

In-class examinations must be written during the designated times; no alternative exam will be available. You must contact me if you miss the Midterm Exam. Students who miss the Midterm Exam for legitimate reasons governed by UBC's Academic Concession Policy will have the marks from that Midterm Exam shifted to the cumulative Final Exam. (See <http://www.calendar.ubc.ca/Okanagan/index.cfm?tree=3,48,0,0>)

### **FINAL EXAMINATIONS**

The examination period for Term 2 of Summer 2022 is August 15<sup>th</sup> through August 19<sup>th</sup>; Saturday and Sunday exams are possible. Students are permitted to apply for out-of-time final examinations only if they are representing the University, the province, or the country in a competition or performance; serving in the Canadian military; observing a religious rite; working to support themselves or their family; or caring for a family member. This option is also available in the case of examination clashes and hardships (three or more formal examinations scheduled within a 27-hr inclusive period) or unforeseen events. Unforeseen events include, but may not be limited to, the following: ill health or other personal challenges that arise during a term and changes in the

requirements of an ongoing job.

Students who miss, or plan to miss the Final Exam, **must** consult the office of the Associate Dean, Curriculum and Student Affairs and follow the University's policies on out-of-time exams. See <https://fass.cms.ok.ubc.ca/wp-content/uploads/sites/131/2020/06/Out-of-time-examination-FASS.pdf>. Further information on Academic Concession can be found under Policies and Regulation in the *Okanagan Academic Calendar* <http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,48,0,0>

### **INCLUSIVE LEARNING ENVIRONMENTS**

In this class, we will work together to develop a learning community that is inclusive and respectful. Our diversity may be reflected by differences in race, skin colour, culture, age, religion, sexual orientation, socioeconomic background, and myriad other social identities and life experiences. The goal of inclusiveness, in a diverse community, encourages and appreciates expressions of different ideas, opinions, and beliefs, so that conversations and interactions that could potentially be divisive turn instead into opportunities for intellectual and personal enrichment. A dedication to inclusiveness requires respecting what others say, their right to say it, and the thoughtful consideration of others' communication. Both speaking up and listening are valuable tools for furthering thoughtful, enlightening dialogue. Respecting one another's individual differences is critical in transforming a collection of diverse individuals into an inclusive, collaborative and excellent learning community. Our core commitment shapes our core expectation for behavior inside and outside of the classroom.

### **ACADEMIC INTEGRITY**

The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work. Violations of academic integrity (i.e., academic misconduct) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. For example, incidences of plagiarism or cheating usually result in a failing grade or mark of zero on the assignment or in the course. Careful records are kept in order to monitor and prevent recidivism. A more detailed description of academic integrity, including the policies and procedures, may be found at <https://learningcommons.ubc.ca/academic-integrity/> and <http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,54,111,959>

### **DISABILITY RESOURCES**

If you require disability related accommodations to meet the course objectives, please contact the Coordinator of Disability Resources located in the Student Development and Advising area of the Student Services building. For more information about Disability

Resources or about academic accommodations please visit the following website:  
<http://students.ok.ubc.ca/drc/welcome.html>

### **UBC OKANAGAN EQUITY AND INCLUSION OFFICE**

Through leadership, vision, and collaborative action, the Equity & Inclusion Office (EIO) develops action strategies in support of efforts to embed equity and inclusion in the daily operations across the campus. The EIO provides education and training from cultivating respectful, inclusive spaces and communities to understanding unconscious/implicit bias and its operation within in campus environments. UBC Policy 3 prohibits discrimination and harassment on the basis of BC's *Human Rights Code*. UBC Okanagan is a place where every student, staff, and faculty member should be able to study and work in an environment that is free from human rights-based discrimination and harassment. UBC prohibits discrimination and harassment on the basis of the following grounds: age, ancestry, colour, family status, marital status, physical or mental disability, place of origin, political belief, race, religion, sex, sexual orientation, or unrelated criminal conviction. If you require assistance related to an issue of equity, educational programs, discrimination, or harassment please contact the EIO.

**UNC 216** 250.807.9291

email: [equity.ubco@ubc.ca](mailto:equity.ubco@ubc.ca)

Web: [www.equity.ok.ubc.ca](http://www.equity.ok.ubc.ca)

### **HEALTH & WELLNESS**

At UBC Okanagan health services to students are provided by Health and Wellness. Nurses, physicians and counsellors provide health care and counselling related to physical health, emotional/mental health and sexual/reproductive health concerns. As well, health promotion, education and research activities are provided to the campus community. If you require assistance with your health, please contact Health and Wellness for more information or to book an appointment.

**UNC 337** 250.807.9270

email: [healthwellness.okanagan@ubc.ca](mailto:healthwellness.okanagan@ubc.ca)

Web: [www.students.ok.ubc.ca/health-wellness](http://www.students.ok.ubc.ca/health-wellness)

### **STUDENT LEARNING HUB**

The Student Learning Hub is your go-to resource for **free** learning support—now **online** and flexible to meet your remote learning needs! The Hub welcomes undergraduate students from all disciplines and years to access a range of supports that include **tutoring in math, sciences, languages, and writing**, as well as **dedicated learning support** to help you develop skills and strategies for **academic success**. Don't wait—successful learners access support early and often. For more information, visit [students.ok.ubc.ca/hub](http://students.ok.ubc.ca/hub) or contact [learning.hub@ubc.ca](mailto:learning.hub@ubc.ca).

## **OFFICE OF THE OMBUDSPERSON FOR STUDENTS**

The mandate of the Ombuds Office is to ensure that students are treated fairly in every aspect of their university life. The office is a safe and confidential place where students can get assistance and guidance on existing resources and processes and help in resolving conflicts related to fairness issues. If you require assistance, please contact the Office of the Ombudsperson: [ombuds.office@ubc.ca](mailto:ombuds.office@ubc.ca) | 604-822-6149 [www.ombudsoffice.ubc.ca](http://www.ombudsoffice.ubc.ca)

### Safewalk

Don't want to walk alone at night? Not too sure how to get somewhere on campus? Call Safewalk at 250-807-8076. For more information, see:

<http://security.ok.ubc.ca/welcome.html>

## General Class Schedule—Weekly Schedules on Canvas

Week	Date	Chapter	Topic
1	Jul 4	Ch. 1 (pp. 1–30)	Introduction
	Jul 5	Ch. 2 (pp. 33–62)	Frequency Distributions
	Jul 7	Ch. 3 (pp. 67–96)	Central Tendency
2	Jul 11	Ch. 4 (pp. 99–128)	Variability
	Jul 12	Ch. 5 (pp. 131–155)	z Scores
	Jul 14	Ch. 6 (pp. 159–189)	Probability
3	Jul 18	Ch. 7 (pp. 193–219)	Distribution of Sample Means
	Jul 19		Midterm
	Jul 21	Ch. 8 (pp. 223–263)	Hypothesis Testing Part 1
4	Jul 25	Ch. 8 (pp. 223–263)	Hypothesis Testing Part 2
	Jul 26	Ch. 17 (pp. 559–597)	The Chi-Square Statistic
	Jul 28	Ch. 9 (pp. 267–294)	The <i>t</i> Statistic
5	Aug 1	Ch. 10 (pp. 299–329)	The <i>t</i> Test for Two Independent Samples
	Aug 2	Ch. 11 (pp. 335–359)	The <i>t</i> Test for Two Related Samples
	Aug 4	Ch. 15 (pp. 485–524)	Correlation
6	Aug 8	Ch. 16 (pp. 529–555)	Regression
	Aug 9	Ch. 12 (pp. 365–408)	ANOVA
	Aug 11		Review/Catch-up

**Exam Week:** August 15<sup>th</sup> through August 19<sup>th</sup>

This schedule is subject to change.