Introduction to Data Analysis
PSYO 271-101, Winter Term 2, 2024/25

I would like to acknowledge that UBC Okanagan is situated in the territory of the Syilx Okanagan Nation and their peoples. I would also like to acknowledge that you are joining us today from many places, near and far, and acknowledge the traditional owners and caretakers of those lands.

INSTRUCTOR	Jan Cioe, Ph.D. [UWO], M.A. [UWO], M.Phil. [Cantab], Hon. B.A. [U of T], R.Psych. (Retd) [You may call me Jan ("*Yawn*") or Dr. Cioe (pronounced as Dr. "C" "O"), Sir]; he/him/his
CLASS	Tuesday & Thursday 11:00–12:20 FIP 204
MY OFFICE	ART 320
CONTACT	250-807-8732 (office); 250-763-1225 (home land line); jan.cioe@ubc.ca [email]
STUDENT TIMES	Tuesday & Thursday 12:30–1:30; Wednesday & Friday 1:00–1:45 & 3:30–4:00 If these times are not convenient, others may be arranged. I prefer face-to-face, but we can also connect via Zoom during these times, or others, if pre-arranged. Check out this video on how to approach faculty and the benefits of doing so during student time / office hours https://learningcommons.ubc.ca/student-toolkits/interacting-with-profs/

TEACHING ASSISTANTS

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TEXT READINGS

Available in Canvas in the Course Readings module as pdf documents. These are open-source material so there is no additional cost to you. This means, however, that material is not integrated across the various sources as a textbook would be. It also means that symbols are not entirely consistent across sources. ☹

CANVAS

I am using UBC's Learning Management System [Canvas] to give you access to material, to communicate with you, and to assess you. If you are new to the system, check out https://community.canvaslms.com/docs/DOC-4121 and https://students.canvas.ubc.ca/; see also the Canvas FAQ on the last link.

CANVAS REGISTRATION of iClicker Cloud

The iClicker Cloud is a response system that allows you to respond to questions I pose during in-person classes, and you will be graded on those responses. There is no additional cost to use this technology.

The student version of iClicker Cloud is called iClicker Reef. Follow the instructions in this student guide to (a) set up an iClicker Reef account and (b) add a course to your iClicker account. In the Canvas PSYO 271 course, you will find an iClicker Cloud Sync link on the left side of the course menu—you will need this link to complete step 2.

I expect to use the iClicker Cloud in every class, so sign in to this account before the start of class—you are responsible for having it functional when you need it. In order to receive credit, you need to register your iClicker account before the second class [i.e., Jan. 9 before 11:00 a.m.]. If you enrol in the class after January 9th, register your iClicker account as soon as possible; let me know if you registered late so that I can adjust the marks for the clicker questions you missed.

Please check to ensure that what you see on your devices is being properly transferred to Canvas—we have had an issue with this last semester. A number of students thought they were synched, but they were not. I try to upload those grades shortly after class—if they are not there 24 hr after class, let me know so I can fix it.

Bring your device [smartphone, tablet, laptop] to every class to use iClicker. During class, follow the steps in the student guide to join a class session [third bullet] and to participate in iClicker activities [fourth bullet].

If you are sick, you should not come to class; you will be excused from the clicker questions for that day. You will not be penalized for missing clicker questions when excused. I prorate the clicker mark calculation dependent on excused absences; if there are 50 questions and you are excused for 6, I divide your total score by 44—not 50.

iClicker activities fall under the provisions of our campus academic honesty policy [see Academic Integrity for more details].

COMMUNICATIONS

I will be relying heavily on Canvas and will frequently use Announcements to communicate with you, so you will need to have access to the internet. I recommend that you turn on your Canvas notifications to "Notify Immediately" for announcements. This can be done by going to Account>Notifications, scroll down to "Announcement" and change this setting to "Notify Immediately" or "Daily Summary." You will need to ensure that the email used for this notification process is one that you check frequently. Material that I want you to have will be available on Canvas, as will your grades.

Please send emails to me at jan.cioe@ubc.ca so that I can use the *Reply* function from your email. For the same reason, please email the TAs at the email addresses provided above. I do **not** check the Canvas mail system so please use the address provided. Canvas also does not necessarily maintain an email string so it can be hard for me to know exactly what the context is for your question or comment. You can typically expect a response within 24 hr, but it may be longer on the weekends.

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. This is a demanding course if you want to do well. My expectation is that you will spend 6 hr/week working on course material in addition to coming to each class. This includes the homework and the computer lab, as well as the online activities [e.g., readings & quizzes], but more time is necessary to prepare for the Midterm and Cumulative Final Exam.

STUDENT OUTCOMES

Higher-order Outcomes

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

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

Lower-order Outcomes

These learning outcomes include the ability to do the following tasks:

- Identify the independent, dependent, extraneous, confounding, and control variables in a study
- Differentiate between descriptive and inferential statistics

- Explain measurement, measurement scales, variables, constants, and measurement error as they relate to statistical analysis
- Apply and interpret appropriate graphing/summarizing procedures associated with various kinds of data
- Calculate measures of central tendency and variability, and discuss the advantages and disadvantages of each of the techniques considered
- Explain and interpret resistant indicators
- Calculate and explain percentile points and percentile ranks
- Articulate the effects of scale changes on the mean and standard deviation / variance
- Explain the nature of *z* scores and how to calculate them
- Know the theory behind the formulae for the mean, standard deviation [variance], percentile, and *z*; this includes being able to apply these formulae from memory
- Explain the nature of the normal distribution and standard normal curve in relation to calculating probability, proportion, area, and percentile [and vice versa]
- Explain the principles underlying the application of probability to hypothesis testing and sampling distributions, including the Central Limit Theorem
- Differentiate between statistical tests in order to perform (a) single-sample, independent-sample, and correlated *t* tests; (b) correlation coefficients, equations of a regression line, and related statistical tests and concepts; and (c) confidence intervals
- Explain the nature of decision error and power in hypothesis testing
- Identify the assumptions that underlie the various statistical tests discussed in the course
- Discuss the limitations of hypothesis testing and the alternative approaches
- Explain how the results from an analysis of variance [ANOVA] can be used to interpret simple and factorial designs
- Apply these skills to novel research questions and datasets

See also "TOPICS covered in PSYO 271 24-25.pdf" for a more detailed listing of topics covered in the course in the Handout module.

FORMAT

This course will be taught primarily using a participatory lecture method in combination with a mastery learning approach. I will also be using response clickers during the lecture to monitor your comprehension of the material; ***these quizzes will be graded*** and contribute to your final course mark. Given the cumulative nature of the course (i.e., later concepts are built on earlier ones), it is very important that the readings be done according to the schedule [see section on Late/Missed Assignments & Exams below]. Given that the assigned homework problems are associated with the specific content of the day, the problems are ***due one week after the date assigned***. This does **not** preclude reading or working ahead, but it does mean that the appropriate material **must** be read prior to the corresponding class and the assignments completed as specified in the Syllabus.

Attendance at the lectures is expected; students, in the past, have experienced considerable difficulty in this course when classes have been missed. If you have to miss a class, you should access the recording of my lectures. The Teaching Assistants [TAs] and I will help you if you

have any problems understanding the material. I am, of course, available to answer any questions you might have during the student times [i.e., my office hours] or after class. If my posted student times are not convenient, we can arrange for a suitable alternative.

MASTERY LEARNING

This course has been designed using the principles of mastery learning. In essence, this model is based on the belief that just about everyone can learn the material if given sufficient time and assistance. Although I cannot offer you unlimited time, I have adjusted the deadlines to give you some flexibility in how long you can work on a unit. Moreover, I have tried to build in a system that can provide you with the assistance you need—**if you are willing to use it**.

Since the concepts of statistics and their associated methods are central to Psychology as a science, I am trying to ensure that all Psychology Majors have the basics down pat. Before moving on to a new unit of material, I want you to demonstrate that you have a solid understanding of the current material. "A solid understanding" is operationalized [you may remember that concept from the Methods course] by **getting at least 80% on the unit tests**. With this knowledge, you will be ready to learn the next unit's content; moreover, you will be better prepared to take the course exams because you have already acquired the bulk of the information.

Accordingly, the course has been designed to present five [5] units of material which cover the basics. In fact, you have already had some exposure to many of these core concepts in PSYO 270. My task is to refine your understanding of this material so that you can perform fundamental statistical procedures and interpret the results in original research papers. We will not cover all the statistical techniques used by psychologists, but you should have a reasonable comprehension of the foundation of those techniques.

Statistics is particularly suited to mastery learning because it is cumulative in nature; the material builds in a logical and systematic way, such that you will likely have difficulty with later material if you do not adequately understand earlier concepts and procedures. Consequently, I want to encourage you to do all of the unit tests at the mastery level, and I will reward you for doing so. You may take each of the graded units test up to four [4] times. The specific questions on your test will be randomly generated from a large test bank, so it is likely that you will not have the same set of questions if you retake a unit test. If you do not reach the 80% mastery criterion, you fail that unit. You may still proceed to the next unit, but your grade will be reduced if you do so without successfully completing the prior unit. **I strongly urge you to delay retaking the unit test for at least 24 hr** so that you can identify the problems you had on the earlier version of the quiz and seek help from the TAs, tutors, or me, **and to leave yourself enough time before the deadline so that you can re-take the unit test if you need to**.

You will not be abandoned. I have built in a variety of ways to help you learn the material. In addition to the recorded lectures, I will also put my cleaned PowerPoint presentations on Canvas so you can review them without advancing through the video version. There will be assigned and graded homework questions for you to work on; I will provide the answers to all of these questions. I will make available a sample practice quiz for each of the units, which reflects what

the unit tests will look like; these practice quizzes will not be graded. Similarly, I will provide a sample Midterm exam where I will model what I expect your answers to be. I will endeavor to make sure that I clearly spell out what you need to know and how you can demonstrate it; if I do not do so, please let me know so that I can correct it. There will not be a sample Cumulative Final exam, but I will make you aware of how that exam will be structured.

I will be available for personal assistance during my student times [and at other times, if necessary], as will my Teaching Assistants [TAs]. We will be organizing volunteer tutors [who have already taken this course] to help you with the material. You will be able to set up study groups through Canvas; I can assist if necessary.

My goal is to ensure that you are all successful in this course.

SUPPLEMENTAL LEARNING PROGRAM:

A Supplemental Learning (SL) component is provided for all students who want to improve their understanding of the material taught in this course. SL sessions are led by a student who has mastered the course material, done well in the class, and who is trained specifically to facilitate group sessions. An SL session provides students with a chance to meet, review, and discuss important concepts, develop strategies for solving problems, and prepare for exams. Attendance at SL sessions is free and voluntary. Students may attend as many times as they choose.

There is empirical evidence that this program helps students do better in the class—it can boost your final grade substantially. SL is particularly helpful for students in the mid-range of grades, but it has been shown to be useful for all. SL is not a replacement for lectures, nor is it a review of the class lectures; rather SL gives **you**, the student, a chance to practice, to ask questions, and to share information with others who attend the class. SL sessions begin the second or third week of class and continue throughout the semester. A session schedule will be announced in Canvas.

For information about the program, session schedule/updates, and possible study guides, visit their website at https://students.ok.ubc.ca/academic-success/learning-hub/supplemental-learning/
The SL Leader this year is Hana Macdonald., hana.macdonald@ubc.ca

You are also welcome to visit the Student Learning Hub website, login through QReserve, and book a tutoring appointment

EVALUATION

The Faculty of Arts and Social Sciences reserves the right to scale grades in order to maintain equity among sections and conformity to University, Faculty, or Department norms. Students should therefore note that an unofficial grade given by an instructor might be changed by the Registrar, Faculty, or Department.
(http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,41,90,1014).

Your final grade in this course is derived from six [6] primary sources:

Course Reading quizzes: One set of quizzes will be based on the assigned course readings, and the deadline for completion will typically occur at the start of class where I cover a new text chapter [see course Syllabus schedule]. The quizzes on the course readings will be graded on a Pass/Fail with 60% set as the minimum to pass (e.g., 3 out of 5 multiple choice questions [8 min]). There are 18 quizzes of this type; these quizzes are worth 6 marks to your course grade.

"In-class" clicker quizzes: Multiple choice and True/False questions will be interspersed during the lectures and will assess material that was covered recently in the lectures or in the course readings. My intention is to reward you for following along as I progress through the material in class. These quizzes will also record your attendance at class which will be part of the grade earned.

I have yet to determine exactly how many questions I will ask, but these quizzes will contribute 6 marks to your course grade. If you have been excused from class and the clicker questions, I prorate the clicker mark calculation dependent on excused absences. If there are 50 questions and you are excused for 6, I divide your total score by 44—not 50.

Unit tests: There are five [5] units which are sequentially organized. I want you to score **a grade of at least 80%** [i.e., mastery level] for the unit before you continue on to the next unit's test. If you do not succeed on the unit test, you are advised to seek assistance from the TAs or me; we will also have a roster of volunteer tutors who are willing to assist you.

You may take each unit test up to four [4] times in order to demonstrate mastery. Because the sequence of material is so important, if you have not reached the mastery level on the previous unit before you take the next unit test or if you have reached the submission date without a pass [80% or >], you have failed that unit [see the section on Late/Missed Assignments & Exams below]. You may proceed to the next unit in sequence and take the next appropriate test. You earn 3 points for each unit you have achieved mastery on. When you successfully complete all five unit tests, you have earned 15 marks [3 × 5].

You control the timing of the unit tests to a certain extent, but each unit should be completed at mastery within approximately **two [2] weeks** of it being assigned. For example, Unit Test 1 will be made available at 12:30 p.m. on January 16th, and you will have until January 30th at 11:00 a.m. to reach the mastery level on it, or else you will forfeit the marks for that quiz. Check the dates for each unit quiz in Canvas since they vary from quiz to quiz. All three of the first unit quizzes need to be completed by February 25th at 11:00 a.m. [just before the Midterm exam begins] so that you are prepared for that exam.

The unit tests are to be taken on Canvas and usually involve 30 multiple-choice questions, but sometimes there are fewer questions since some questions are more complex and therefore are worth more points. These unit tests are self-administered with a time limit of 50 min, except for Unit 4 which has a 90-min limit. Moreover, **you should not retake a unit quiz for at least 24 hrs**; this delay will give you time to fix any problems you have by doing some remedial work

and/or seeking help. The delay means you need to plan this out so that your first quiz is no later than 5 days before the cutoff, or you may not be able to have all four attempts available to you. The quizzes will contain both calculations and theory questions. You are expected to work independently and to take these tests only with authorized aids in order to mirror exam conditions. While you may think that doing whatever is necessary to pass the quizzes is a good idea, this strategy will ultimately work against you as you will not have acquired the necessary knowledge or skills to do well on the rest of the evaluation methods. In essence, **I am relying on your personal integrity to follow the rules. It is important for you to know, however, that if I find out that you have cheated, I will give you zero for the entire quiz component.** This is not a threat, but rather a clear expression of consequences and how strongly I feel about this issue [see also Academic Integrity below]. A sample practice quiz is available for each unit; there are no marks for the practice quizzes.

Exams: There are two [2] closed-book exams [one Midterm and one Cumulative Final]. The first exam will cover Units 1–3. This Midterm Exam will be similar to the unit tests in that there will be multiple-choice questions drawn from the same test banks as the unit quizzes. In addition, you will be required to show the process through which you obtained your calculated answers and generate some of the theory answers rather than simply identifying the correct response in a multiple-choice format. There will be questions that evaluate at a higher level of understanding, and so will be more difficult. The Midterm will be 75 min in duration. The Final Exam is 150 min and is cumulative: It covers **all** the material from the start of the course until the end. Given that the Final Exam is cumulative, your marks for these two tests will be weighted 1:2; consequently, the Midterm Exam contributes 18 marks, and the Cumulative Final Exam counts for 37 marks to your course grade. The two exams are to be taken at the time specified based on University policy. If you fail to take the Midterm Exam for a legitimate reason (see Late/ Missed Assignment & Exams), the grade from that Midterm Exam will be shifted to the Cumulative Final so that it will now be worth 50 marks towards your course grade. I am prepared to allow the Cumulative Final Exam performance to substitute for your Midterm performance if you do better on the Cumulative Final Exam.

Homework: I have assigned a series of homework questions for you to do as practice and for grades. It is **extremely** important that you do these questions in order to ensure that you have the necessary skills to succeed on the unit tests and exams. You will be submitting in your assigned homework after converting it into a pdf document **each Thursday by 11:00 a.m. PST** (see Homework Problem Schedule 24-25 in Homework module) via Canvas. You will be rewarded for correctly submitting all of the assigned work in the Completed Assigned Homework category. If you hand in all of the homework, you will earn 2 marks toward your course grade, but you will lose 0.5 for each assignment that is not handed in on time ***and*** complete. Partial submissions are not acceptable since you have the opportunity to get a grace period of 3 days.

In addition, we will also be marking the content of the homework. However, only a selection of these questions will be marked each week. Your homework will be evaluated for the steps you took to get your answer, not just the final answer since you will know what the correct final answer is [available at the end of the Homework Questions 24-25 document]. Therefore, you need to provide all the necessary details as set out in the model answers provided in Canvas and

in the lecture. Your mark on the content of the homework questions will contribute 8 marks toward your course grade. You are to submit all of the homework assigned for the previous week; that is, the work assigned for Jan. 16^{h} is due on the 23rd; the work assigned for 21st is to be handed in the 30th, etc., except around the Midterm—check the Homework Problems schedule handout for details. In summary, the homework is worth 10%: 2% for submitting all of it, and 8% for doing it correctly.

Online computer lab: There is a Computer Lab—Cioe module that contains the instructions for the lab assignments. Your first task will be to install the relevant software—R program first, then R studio next, and finally the R package swirl [Lab #2]. Swirl will walk you through key aspects of the program language that is R. If you continue to PSYO 372 and the Honours Program, you will get experience with writing script commands in R.

You are permitted to work through the labs with your classmates; however, **the assignments must be completed on your own, with no assistance from classmates**. You are permitted to use notes, lab materials, and other resources that do not involve communication with another person or an AI [😉].

The **lab assignments are typically due on the Tuesday before the start of class [see Syllabus for exact dates] following the lecture coverage of the material.** The first lab is just the setup so you can access the stats programs; the formal due date is 25.01.21 [after the Add/Drop period], but you should do this as soon as you can. The first real assignment [Lab 2] involves walking through the first part of swirl and it is due on 25.01.28. The Syllabus and the Assignment Schedule 24-25 P271 document lay this all out. You will be handing in your Computer Lab assignments through Canvas after converting them into a pdf document, as described in the Homework module, or as a text document [.docx]

This component will contribute 8 marks toward your course grade.

Bonus marks: Bonus marks (up to 2%) are available to students who participate in psychological research through the volunteer subject pool. You are now required to engage in some in-person studies to earn the full 2 bonus marks [see SONA Bonus Marks module]. I would like to encourage you to participate in the subject pool because not only will you assist researchers (including fellow students) and earn some extra marks, you will also be seeing what it is like to be in a study. This can be a valuable experience which will enrich your understanding of behavioural research. Students who wish to access these bonus marks, but not act as research participants, may elect to do the paper summary alternative (see SONA handout on Canvas).

In order to pass the course, the mark on the Final Exam must be at least 40/100. Failure to reach this criterion will result in a grade no higher than 45% in the course. Note that the Final Exam is cumulative and covers all the material in the course. I believe that the other components to this course will help you learn the content as assessed in a monitored exam and so they should be completed honestly. I hope that this will discourage cheating on the online

quizzes, the homework, and the labs and prevent people from passing who do not have a sufficient grasp of the material.

Summary

Text /readings quizzes [6% max]	**Quizzes = 6**
In-class quizzes & surveys [6% max]	**Number of questions vary = 6**
Unit tests [15% max]	**5 tests at 80% = 15** **4 tests at 80% = 12** **3 tests at 80% = 9** **2 tests at 80% = 6** **1 test at 80% = 3**
Term exams [55% max]	**Midterm = 18** **Final = 37**
Homework [10% max]	**Marked homework = 8** **Handing in each assignment on time = 2** **[lose 0.5 point for each assignment not submitted on time or incomplete]**
Computer Labs [8% max]	**Marked Lab Assignments = 8**
Course Grade = 100%	**TOTAL = 100**

APPROVED CALCULATOR

A **basic calculator** with a square root and memory function is necessary for coursework. 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 that you are comfortable and familiar with the calculator you will be using during your exams. We will be doing a calculator check prior to the Midterm exam; I will ask you to bring the calculator you intend to use to class and we will examine it to see if it is OK. Should you arrive at either of the exams with an unacceptable calculator, 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. [See the homepage for PSYO 271 on Canvas for pictures of acceptable calculators like the one here.]

PRE-REQUISITES:

One of PSYO 111, PSYC 111 and one of PSYO 121, PSYC 121, registration in the Psychology Majors program [B.A. or B.Sc.], and completion of PSYO 270 [or equivalent] are pre-requisites.

Under some circumstances, students who do not have these prerequisites may be admitted to the course. Students without the required pre-requisites who do not obtain permission from me may not be given credit for the course. In all cases, students who complete courses without prerequisites are not exempt from having to complete the prerequisite courses at some later date if such courses are required for the degree program or entry into other courses.

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 also 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 and complete a questionnaire. 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 35–40 openings. Entry into PSYO 373 is also limited by space. Last September, the cut-off Psychology Grade Average was 88.1%.

If you are completing a Major, you are **not** required to take any more stats/methods courses, but are advised that these courses would be helpful if you are planning to attend graduate studies in psychology or related social sciences. Taking the 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 admission to the Honours programs since you will also need to have a Psychology faculty member agree to supervise your Honours Thesis [PSYO 490] course. You are advised to approach possible supervisors early since space may be limited in that supervisor's lab.

LATE/MISSED ASSIGNMENTS & EXAMS

Points for graded components may **not** be made up. All assignments are due before the start time of class on the due date. **There is a three-day [3] grace period on each graded component, up to a maximum of three [3] times—no questions asked, but you need to request that grace period each time *before* the deadline**. Additional grace periods may be given, but you must meet with me to discuss the situation and to set a schedule for completion of further work. If you anticipate a problem meeting a deadline because of a health issue, you can also contact me by email to request an Academic Concession extension https://okanagan.calendar.ubc.ca/campus-wide-policies-and-regulations/academic-concession . Late assignments without a grace period or an extension will receive a grade of zero.

In-class examinations **must** be written during the designated times; no alternative exam will be available. You need to 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.

FINAL EXAMINATIONS

The examination period for Term 2 of Winter 2024-25 is April 11–21; 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. Exams are to be written based on the Kelowna time zone.

Students who miss, or plan to miss the Final Exam, **must** consult the office of the Associate Dean, Curriculum and Student Affairs of your degree and follow the University's policies on out-of-time exams.

- For the BA, see https://fass.cms.ok.ubc.ca/wp-content/uploads/sites/131/2020/06/Out-of-time-examination-FASS.pdf
- For BSc, see https://science.cms.ok.ubc.ca/wp-content/uploads/sites/128/2020/06/Out-of-time-examination-FoS.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 a myriad of 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 a mark of zero on the assignment or in the course. Careful records are kept in order to monitor and prevent recidivism.

> **Students must review the Academic Integrity Agreement in the Course Content [Open these files first] module and act accordingly.** A more detailed description of academic integrity, including the policies and procedures, may be found at

https://learningcommons.ubc.ca/academic-integrity/ , https://okanagan.calendar.ubc.ca/campus-wide-policies-and-regulations/student-conduct-and-discipline/discipline-academic-misconduct/1-expectations-academic-integrity , and https://academicintegrity.ubc.ca/

You are expected to work independently and to take the online tests only with authorized aids in order to mirror exam conditions. Just to be clear, students who do not do their own work are violating the principle of academic integrity. It should be obvious that we are operating on the basis of mutual, personal trust. I am expecting you to act ethically, just as you are expecting me to do the same. **If you have any questions about how academic integrity applies to this course, please talk to me.**

iClicker activities fall under the provisions of our campus academic integrity policy. Students must **not** engage in academic misconduct while participating in iClicker activities. This includes, but is not limited to the following:

- Checking in while not physically in class
- Having another student check you into class
- Answering polling questions while not physically in class
- Looking at other students' devices while answering anonymous polling
- Using more than one iClicker remote or account at a time

Any student found to be in violation of these rules will lose their iClicker points for the entire term and will be reported to the Dean for student misconduct.

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
Web: https://equity.ok.ubc.ca/

HEALTH & WELLNESS
At UBC Okanagan, health services for 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. 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
Web: https://students.ok.ubc.ca/health-wellness/student-health-clinic/

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 https://students.ok.ubc.ca/academic-success/learning-hub/ or contact 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 | 604-822-6149 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:***
https://security.ok.ubc.ca/safewalk/

USEFUL CONTACTS

THESE ARE ALL UBC PHONE NUMBERS, SO THEY START WITH 250-80

Very Important Numbers

First Aid / Emergency	78111	
Security (non-emergency)	79236	
IT Services Helpdesk	79000	
	https://it.ok.ubc.ca/welcome.html	

Contacts for Students

Marla MacDonald, Psychology Secretary	79258	ART 321
	psychology.okanagan@ubc.ca	
Dean's Office [Students]	fass.students.ubco@ubc.ca [BA]	
	fos.students.ubco@ubc.ca [BSc]	

Places to Refer Students

Senior Advisor, Psychology - Jan Cioe	78732	ART 320
	jan.cioe@ubc.ca	
Academic Advising	79100	UNC 207
https://students.ok.ubc.ca/academic-success/academic-advising/contact/		
Disability Resource Centre	79263	UNC 227
	drc.questions@ubc.ca	
Psychology Course Union		ART281
	ubcopsyc@gmail.com	
Math and Science Centre		UNC 201
Writing and Research Centre	79185	LIB 237
Health and Wellness	79270	UNC 337
Equity Office	79291	FIP 302
Safewalk	78076	

Useful People to Talk To

Cindy Bourne, Co-ordinator-Learning Centre	78065	UNC 325H
Janine Hirtz, e-Learning Support (Canvas)	79133	SCI 200
https://faculty.canvas.ubc.ca/for-students/		
Liz Hilliard, Manager, Campus Life	79012	UNC 329B
	https://ok.ubc.ca/student-life/	
Terina Mailer, Senior Academic Advisor	78726	UNC 207D
	terina.mailer@ubc.ca	

Unit #	Week	Date	Content & Assignments	Topic
1	1	Jan 7	R1 Quiz [Q] Q due 25.01.21	Introduction – Course outline; nature of science and basic concepts from PSYO270.
1		9	R2 & R3 Q due 25.01.21	Nature of measurement; scales of measurement. Measurement error.
1	2	14	R4 & R5 Q due 25.01.21	Graphs & frequency distributions [25.01.17 last day to drop without a W]
		TBD	R0	Algebra review – it will be recorded & uploaded to Canvas
1		16	R6 & R7 Q due 25.01.21 Homework #1 due 25.01.21	Graphs & frequency distributions [rest]. Summation signs. [25.01.17 last day to drop without a W]
2	3	21	R8 & R9 & R10 [due today] [see 1.6.2 in R5] Computer Lab 1 [due today]	Descriptive statistics: Measures of central tendency. **BRING YOUR CALCULATOR TO CLASS FOR CLICKER MARKS**
2		23	Homework # 2 [due today]	Descriptive statistics: Measures of variability.
2	4	28	R11 & R12 [due today] Computer Lab 2 [due today] Survey [today]	Resistant indicators. Percentile points.
2		30	Homework # 3 Unit Test 1	Percentile ranks. Unit Test 1 due
3	5	Feb 4	R13 Computer Lab 3	Effects of scale change. *z* scores. Standard normal distribution.

Unit #	Week	Date	Content & Assignments	Topic
3		6	Homework #4	Application of standard normal curve problems.
4	6	11	R14 Computer Lab 4 Unit Test 2	Probability theory. Application to statistics. Sampling distribution of means & other distributions. Central limit theorem [not on Midterm exam].
4		13	R15	Inferential statistics: populations & samples. Introduction to hypothesis testing, probability, & sampling distributions [not on Midterm exam].
	7	17–21		**MIDTERM BREAK: No classes**
4	8	25	**Unit Test 3** Homework #5	**Midterm – All material to Feb. 6th [Units 1–3]**
4		27	[read R15 again]	Strategy for experimental inferences. *z* test for true mean.
4	9	Mar 4	R16 Computer Lab 5	Statistical decisions: type I & II error. Power. Directional & non-directional tests.
4		6	R17	The *t* distribution; *t* test for true mean.
4	10	11	---	**Midterm – Review exam results [tentatively]**
4		13	R18 Homework #6	Difference between means *t* test, independent-samples *t*. **[Last day to withdraw yourself with a W: March 21]**
4	11	18	R19 Computer Lab 6	Correlated *t* / paired-samples *t*.
4		20	R20 Homework # 7	Regression: Linear regression; regression line; standard error of estimate.

Unit #	Week	Date	Content & Assignments	Topic
5	12	25	21 & R22 Computer Lab 7	Correlation: Pearson product moment correlation coefficient. Properties of *r*.
5		27	R23 Homework # 8	Factors that change *r*. Causality and correlation. Inferences about correlations.
5	13	Apr 1	R24 [see also R15]	Effect size and interval estimation: Limitations of hypothesis testing; indices of effect size; interval estimation.
5		3	R25 Unit Test 4 & 5 **DATE TBD**	*F* test; one-way ANOVA; factorial ANOVA
	14	8	Computer Lab 8	REVIEW
		11–21		**Final Exams – NOTE: Saturday & Sunday exams are possible.** **ALL MATERIAL TO DATE in 2.5-hr format.**