

# Analysis of Behavioural Data (PSYC\_V 218-004 | 3 Credits)

Term 2 | January 2026 to April 2026

In person on Mondays and Wednesdays, 11:00 am – 12:30pm PST

P. A. Woodward Instructional Resources Centre (IRC) | Floor: G | Room: 4

**Prerequisites and Corequisites:** Restricted to students in one of PSYC Major, BA COGS Major. Prerequisite: One of PSYC\_V 217, PSYC\_V 277.

## The Teaching Team

Who	Where	When
JK Flake, PhD [instructor] Associate Professor in Quantitative Methods   Department of Psychology	Outside of class or Kenny 3529	M/W for up to 30 mins after each class, office hours not held when there isn't class
Malina Lemmons, MA [teaching assistant] Doctoral fellow in Quantitative Methods   Department of Psychology Assigned TA for messages if your last name starts with A-K	Kenny 4005 and <a href="#">zoom link:</a> <a href="https://ubc.zoom.us/j/61638069932?pwd=jlukNTYKeeK1ccYLWgsXMiHClljzu.1">https://ubc.zoom.us/j/61638069932?pwd=jlukNTYKeeK1ccYLWgsXMiHClljzu.1</a> Passcode: 218	T: 1:45-2:25 Online TH: 12:45-1:15 In person Or message on Canvas to make an appointment
Raymond Li, MA [teaching assistant] Doctoral fellow in Quantitative Methods   Department of Psychology Assigned TA for messages if your last name starts with L-Z	Kenny 3512 and <a href="#">zoom link:</a> <a href="https://zoom.us/j/9735943783?pwd=yFqUbjcMGbaJVh9aUDUggyXZJAdqwN.1">https://zoom.us/j/9735943783?pwd=yFqUbjcMGbaJVh9aUDUggyXZJAdqwN.1</a> Passcode: 218	W: 12:30-01:00 PM Online F: 11:00-11:30 AM In-Person Or message on Canvas to make an appointment

## Course Description

Use of inferential statistics in psychology and conceptual interpretation of data; experimental design (laboratory, field research methods); presentation of data analyses in reports.

## Guide to this Syllabus

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This is an in-depth syllabus, come here first if you have a question. Nearly all questions have been answered here through years of refinement! **If the information is in bold, it is the answer to a frequently asked question.**

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### Course Learning Outcomes/Objectives

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This course serves as an introduction to statistical concepts necessary to describe and understand data from psychological research.

By the end of the course students will be able to:

use descriptive statistics to summarize and visualize data

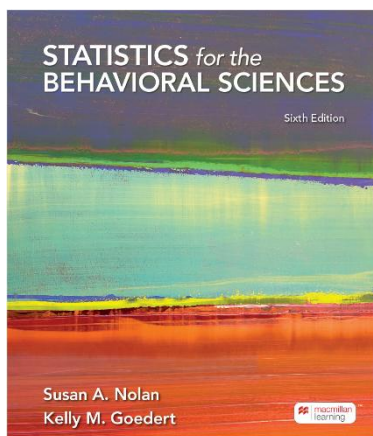
describe, calculate, and interpret introductory inferential statistics, such as t-tests, correlations, and chi-square by hand and using software

define and identify best and worst statistical practices that support or undermine the validity of interpretations

All course topics are listed in the course schedule and key concepts are listed at the end of each textbook chapter.

## Required Learning Materials

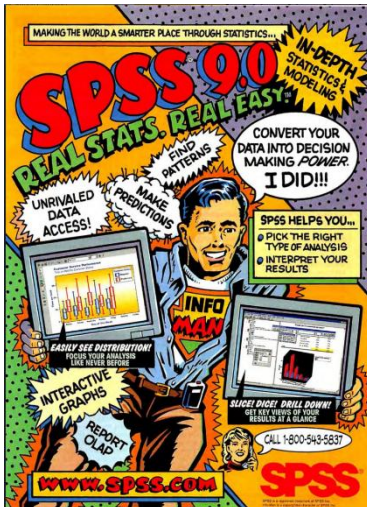
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Textbook: **Nolan, S. A., & Heinzen, T. E. (2024). Essentials of Statistics for the Behavioural Sciences, (6th Ed.). New York, NY: Worth**

[Purchase through UBC Bookstore for discounted pricing](#)

This text is different from other sections of this course. You cannot use a different book but may choose between the loose leaf and digital only options. You can begin by signing up for the 2-week free trial through the Macmillan Learning Canvas Module. This will get you started and let you try out the resources associated with the e-book. The first day of class a Macmillan representative will demo how to get set up and use the online resources, if you miss this, please review the recording and associated slides if you have issues or questions.



Technology: Canvas access, a simple calculator with a square root button\*, reliable access to the internet and a computer with access to SPSS 31 (graphic is an ad from 1999, we will be using the latest version). You'll need a smart phone, tablet, or laptop that can be used for in-class polling.

[Instructions for downloading SPSS](#) through [UBC's software portal](#)

**\*Programmable calculators with graphics, memory storage, and/or statistical functions are not allowed for any tests.** If the calculator can calculate the mean or standard deviation from a vector of numbers, it is not allowed. For example, [this](#)

[webpage for a Texas Instruments calculator says](#), "one and two variable statistics", such calculators are not allowed. If it has a mean, variance or SD button, it is not allowed. See Canvas for examples of banned calculators. For the tests you just need a simple calculator that has a square root button, not one that will calculate the statistics for you. If you are found to have a banned calculator at a test, you will be reported for academic dishonesty. **It is your responsibility to bring the appropriate calculator to the test, pleading ignorance is not a valid excuse for the academic integrity office. Invigilators will check your calculator. If you are uncertain bring it to class during test reviews or to office hours.**

## Course Structure and Learning Activities

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Learning is an active process that requires motivation, engagement, practice, and feedback. This class is designed around that fact and requires regular and active participation. The course is organized on Canvas by week. This course will follow a predictable routine, and the general philosophy is that there are no surprises. We learn about and practice stats in class, those same stats are demonstrated in the SPSS data analysis software, those same stats are asked about in the weekly homework quizzes, those same stats are asked about on tiny in-class tests, and at the end those same stats are on the final exam. If you show up and practice consistently, you'll know about those same stats and you'll do well in the course.

**All lectures will be recorded so that students can review as needed.** We offer multiple office hour times in person and online and many of the graded components have flexibility worked in to accommodate short-term illness or crisis. However, there is a general expectation that learning activities take place in person and students are expected to attend most classes.

I ask for everyone's cooperation in ensuring that any video and associated material are not reproduced or placed in the public domain. This means that each of you can use it for your own

purposes, but you cannot allow others to use it by posting it online or giving it or selling it to others who may copy it and make it available.

## Getting Help in this Class

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### Communication Policy

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Large lecture courses require clear communication protocols for timely feedback and answers to questions from students. Follow these steps if you have a question:

Step 1: Read the syllabus (double check bolder FAQ text)

Step 2: Check FAQ page on Canvas

Step 3: Attend class or office hours

Step 4: Use Canvas to message your assigned TA

Your first point of contact in this course is always attending class or office hours. If you can't do that, then your next point of contact is your assigned TA. Your assigned TA corresponds to the first letter of your last name, per the syllabus.

**The teaching team will not answer any emails related to the class. We will only respond to messages sent using Canvas inbox.** Our emails are a zoo and if your questions are in there with the rhinos and lions there is a significant chance ( $p < .05$ ) they get eaten alive. The instructor will not answer any questions related to the course via emails or Canvas messages from students, message your TA first, if they can't handle it, they will forward it to Dr. Flake. **If you message or email Dr. Flake directly, she will not respond.**

We will check Canvas inbox every weekday, we do not answer emails over the weekend, you can expect to hear back from us by the end of the next business day. In return, we ask that students stay on top of course communications.

### Extra Help

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If you need additional help in this class, I suggest checking out the [Learning Commons tutoring and advice offerings](#), as well as the [Alma Mater Society tutoring options](#).

## Tentative Course Schedule

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Week	Dates	Description	Readings	Quizzes Due Friday Night
<b>1</b>	JAN 5 + 7	Welcome, the tech, the plan, tips for success, what are statistics?	Math Review Appendix A, CH1, Syllabus	
<b>2</b>	JAN 12 +14	Frequency distributions, data visualizations (Jan 16 <sup>th</sup> drop deadline)	CH2, CH3	#1
<b>3</b>	JAN 19 + 21	Central tendency and variability, SPSS workshop #1 and descriptives review	CH4	#2
<b>4</b>	JAN 26 + 28	sampling and probability, normal curve and Z-scores	CH5, CH6	#3
<b>5</b>	FEB 2 + 4	Hypothesis testing (catch up space)	CH7	#4
<b>6</b>	FEB 9 + 11	SPSS workshop #2 and inference review, Tiny Test #1 (W Feb 11 <sup>th</sup> )		#5
<b>7</b>	FEB 16 + 18	BREAK NO CLASS		
<b>8</b>	FEB 23 + 25	Confidence intervals, Single-samples t-test	CH8, CH9	#6
<b>9</b>	MAR 2 + 4	Paired-samples t-test, SPSS workshop #3 (March 6 <sup>th</sup> withdrawal deadline)	CH10, CH11	#7
<b>10</b>	MAR 9 + 11	Independent samples t-test/t-test wrap up, Correlation	CH11, CH15	#8
<b>11</b>	MAR 16 + 18	Correlation and regression	CH15, CH16	#9
<b>12</b>	MAR 23 + 25	Chi-square, SPSS workshop #4 and review,	CH17	#10
<b>13</b>	MAR 30 + 1	Tiny test #2 (M Mar 30 <sup>th</sup> ), the statistical dark side	Posted readings	#11
<b>14</b>	APR 6 + 8	No class (M), choosing the right statistics and exam review (W)	None	#12
<b>EXAMS</b>	April 14 to 25			

## Assessments of Learning

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This course takes a diverse and flexible grading approach. Students' final grade will be based on multiple components: quizzes, tiny tests, polling participation, research participation, and a cumulative final exam.

Components	Notes	Number of Graded Components	Percent for Each	Total Percent
<b>Quizzes</b>	Drop lowest two, 10/12 graded	10	2	20
<b>Tiny tests</b>	Two during term, any missed shift to final	2	15	30
<b>In-class participation day via polling</b>	There will be at least 20 days, but only 15 graded (you don't lose points if you miss less than 25% of the time)	15	1/3	5
<b>Research participation</b>	Participate in research studies via the Human Subjects Pool	Varied	Varied	3
<b>Final exam</b>	During final exam period	1	42	42
<b>Total</b>				100

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### Weekly Open Book Quizzes (10 x 2% each)

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Starting in the second week of class, there will be weekly quizzes that students complete and get feedback on via Canvas quizzes. These quizzes will cover content from the lecture the week before. For example, the second week of class on Monday (Jan 12) and Wednesday (Jan 14) we will learn cover chapters 2 and 3 of the textbook, by that Friday (Jan 16) the quiz will be available, and students will have one week to complete it (due Jan 23). **In general, every Friday a quiz will open and the one from last week will be due.** All due dates will be posted with the quiz on Canvas and should be listed on the course summary.

The quizzes will be a mix of short answer and multiple choice delivered using the Canvas with some questions being autoscored and some being manually graded. We will provide quiz feedback and grades no later than one week from the due date. Quizzes will include conceptual questions based on the lecture, as well as data analysis tasks and interpretation covered during SPSS workshops. **The quizzes are "open book", but students are expected to complete the quizzes on their own and their responses should reflect their own learning and knowledge. Students can reference notes, lecture materials, or their textbook for a quiz, but are not allowed to copy answers from another source. See working with others (real or artificial) policy below.**

These quizzes will not be graded harshly. Each is worth only 2%. Most questions will be autoscored, for the manually graded ones we will offer partial credit. This grade component has flexibility if you need it. **Your two lowest quizzes will be automatically dropped from your final grade. We do not negotiate missed quizzes or provide extensions. You choose which two you need or want to miss, no documentation required.** You do not need to email us; just miss the ones you need to miss! Complete all of them, your two lowest will be dropped (we suggest completing all of them, even if you cannot do so thoughtfully, so that you do not get a zero, then later if you really have to miss one, you don't have any zeros contributing to your final grade). This flexibility gives you about 2 weeks of the course that you can miss. Use it wisely and only as needed.

Keep in mind that there are no additional extensions and the homework cannot be turned in after the due date. **Missed quizzes beyond the two freebies will be counted as zero toward your final grade and you will not be able to make them up.** You will not be able to shift your quiz grade to other grading components. We will not consider any individual excuses or alternate due dates for individual students. If you have an extreme circumstance that requires you to miss more than 1-2 weeks of class, please contact the Center for Accessibility to pursue formal accommodation.

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### Tiny Tests (2 x 15% each)

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We will have two in-class tests that cover content from the previous weeks. Tiny test 1 will tentatively cover content from chapters 1-7 and SPSS workshops 1-2, whereas tiny test 2 will cover content from the rest of the chapters listed in the syllabus and SPSS workshops 3-4.

**Tiny tests will generally be short answer questions that have a mix of conceptual questions,** problems like the ones we practice in class, and interpretation as covered in SPSS workshops. Time will be spent in class reviewing for the test the week before.

Students will need a basic calculator (more advanced calculators, such as graphing calculators, are not allowed during tests), writing tools, and an ID. **You will also be permitted to bring one standard page worth, both sides (no bigger than 8.5 x 11 inches) of notes to the exam, which will be collected and destroyed after the exam. You should include any relevant formulae on your note page. You will not be given a formula sheet, you can use the one in the text as a guide to bring to class (under "Glossary, References, and Indices" at the end of the book).** We recommend preparing this sheet and using it during in-class reviews. If statistics and/or probability tables are needed, we will provide them. Those who wish to review their exam afterwards can do so upon request during scheduled review sessions. See Canvas for specific dates, times, and location of post test reviews.

This grade component has flexibility if you need it. **If you miss a tiny test, we will not give you a zero, the weight of that test will move to the final. There will be no make-up tests or test accommodations provided outside of those offered by the Center for Accessibility.** If you show up for the test, your grade will be calculated into your final grade. The weight of your tiny test grade only moves to the final if you miss the test, not for other reasons (e.g., you don't like your test grade).

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### In-class Participation (15 x .33% each)

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For most classes, during class, we will use the iClicker Cloud application to poll the class about a concept, opinion, or practice problem. We use polling to get and give feedback and to make the large lecture environment more interactive and fun. Each time you attend a class and participate in polling, you earn participation credit for that day. These polling questions will not be marked correct, you will get credit for just participating. In any given class there might be multiple polls, but you get credit for participating for the day, so **if you are there for a day where there is a poll and participate in at least one of them, you will get participation credit.** We will have polls during most lectures and will ensure that at least 20 days have an opportunity for polling participation.

**This grade component has flexibility if you need it,** you do not have to attend every lecture to get full participation credit. **Only 15 (~75%) of these will count toward your grade, but we will ensure that there are at least 20 classes where there is a polling opportunity** (but there could be more!). Thus, if you attend most classes and participate in polling, you can get full credit for this component. Use this flexibility when you absolutely need it, like if your phone dies or you are sick and can't come to class. There will not be any make-up for participation. You get to decide when you miss class and how often you participate, if you decided to miss every single class, you could still get an A in the course.

### Polling Instructions

- You will respond to questions from the instructor or TA from a personal device (smartphone, tablet, or laptop). Students should come to class with their devices charged and connected to the internet.
- To earn participation credit for polling, you MUST log-in with your UBC username and password. For more information, please visit the student support section at <https://lthub.ubc.ca/guides/iclicker-cloud-student-guide/>
- For any technical problems with polling, please contact the IT Service Center: <https://it.ubc.ca/got-question-about-it-products-and-support#helpdesk>

- **If you do not have a phone, tablet, or laptop to use to respond to polling questions, please contact your assigned TA so appropriate arrangements to be made. If you do not contact the TA by the add/drop deadline you will not be accommodated.**

- Please ensure that any polling responses you submit are appropriate and relevant to the question asked. Note that unless the poll is labelled as anonymous, your responses are identifiable to the instructor. You must be logged in through your UBC account to get credit for that day, otherwise we will not know you participated.

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### Research Participation (3%)

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Most students will choose to earn these credits by spending three hours participating in psychology studies (worth 1% point for each hour) through the Department of Psychology's Human Subject Pool (HSP) system. You can locate, create an account, and sign up for studies by going to <https://hsp.psych.ubc.ca>. Please register in the system by the end of the first month of classes to have the opportunity to earn your first ½ hour credit with a brief online survey that will increase your eligibility for more studies.

Once registered in the system, you will be able to browse through and select which studies you wish to participate in, sign up for an available timeslot, and confirm your accumulated credits afterward. At the end of the last day of class for the term, the subject pool is closed. At that point, you will no longer be able to receive credits.

**Participate in and confirm your credits long before the last week of class. Many studies will not offer timeslots near the end of the term and you may be locked out before allocating your credits to your desired course. If you fail to earn and confirm your credits in time, there will be no opportunities to make them up or other alternatives offered by the teaching team.**

Further instruction on how to use the HSP online system can be found at <https://psych.ubc.ca/undergraduate/opportunities/human-subject-pool/>

### HSP Online vs. in-lab Studies

Students are free to receive their HSP credits from any combination of “in-lab” and “online” studies. However, “in-lab” studies will offer a bonus 0.5 credits on top of the standard 0.5 credits per 30 minutes of participation (e.g., a 1 hour “in-lab” study will award 1.5 credits, while an equivalent “online” study will award 1 credit).

### Alternative quiz (the Library Option):

As an alternative to participation in psychology subject pool experiments, you may complete a library-writing project. Such projects consist of reading and summarizing 1) the research

question, 2) the methods and 3) the results (in written form) of a research article from the peer reviewed journal Psychological Science. You will receive one (1) research participation credit for each article summary that meets the following requirements.

Requirements:

- The article must have been published in the journal titled “Psychological Science”
- The article must have a publication date from the year 2000 to present (i.e. papers from 2001 are acceptable; those from 1999 or earlier are not)
- The article must be a research article; it cannot be a review article, a news item, a notice, or a letter to the editor, for example
- The summary should be approximately 500 words in length
- You must include your name, student number, course, section, instructor and email address on each summary
- You must log on to the Human Subject Pool (HSP) system (<http://hsp.psych.ubc.ca/>) and create an account before submitting your article summaries. Your credit is assigned using the online system.

For each course, you may obtain the same number of extra credits via the library option as specified in the course syllabus (i.e. the same number of credits available for students who participate in research).

Summaries must be submitted no later than 10 days before the end of classes.

You are to submit your article and your summary to turnitin.com. If you don't have a turnitin account already (from a previous course), you will need to create a user account in Turnitin. For the library quiz the class ID is 51268460, class name is "HSP 2025 Winter 2", and password is "Research". See [www.turnitin.com](http://www.turnitin.com), and click on the “Training” link at the top of the page for detailed instructions on how to submit papers to Turnitin. Any student who is suspected of plagiarism will, at a minimum, not be granted credit, and their course instructor will be notified. Further action may be taken at a departmental or university level.

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### Final Exam (42%, if two missed tiny-tests 72%)

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We will hold a cumulative final exam (42% of your final grade unless you miss in-class test, date to be determined by the final exam schedule). Preparation for the final exam will take place throughout the semester via tiny tests that will be given in class in the same format as the final exam as well as an in-class review session.

**All content covered in lecture could be on the final exam.** Detailed information about where to go for the exams will be provided by UBC's central exams office (students with

accommodations may take their exam in a different location). The exam will be short answer and students will need a basic calculator (more advanced calculators, such as graphing calculators, are not allowed during exam time), writing tools, and an ID. You will also be permitted to bring one standard page worth, both sides (cannot be bigger than 8.5 x 11 inches) of notes to the exam, same rules as for the tiny-tests. Those who wish to review their exam afterwards can do so upon request during scheduled exam review sessions. See Canvas for specific dates, times, and location of exam reviews.

**Those who miss the exam will need to apply for a deferral through UBC's exam office. The teaching team will not offer accommodations outside of UBC's formal processes.**

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### Extra Credit

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There may be other opportunities to earn extra credit and/or bonus questions on tests for completing additional practice problems, providing course feedback and/or completing student evaluations. These opportunities will be announced in class and on Canvas.

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### Assessment Policies

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#### Regrading

You will have the opportunity to review your tests and quizzes after they have been graded. If you believe something was graded in error, you can ask the TA to review your answers and correct any mistakes. However, it is possible your grade lowers if the TA finds that there was a mistake that inflated your grade. Grading disputes not settled with the TA will be adjudicated by the instructor, who could decide an error increases or decreases your grade. Grades will not be changed to get to the nearest letter grade, nor will rounding rules be augmented.

#### Academic Integrity and Individual Assessments

To learn more about academic integrity and how allegations of misconduct proceed at UBC go here: this [Academic Integrity for Students](#).

For this class the quizzes and tests in this course should reflect your learning, not the work of others. **In this class you may work with others (real or artificial) or use the internet to study and practice, but you may not copy answers from others to reflect your work on the quizzes. You should use these quizzes to practice on your own, if you get something wrong you will get feedback promptly to improve your learning. Your two lowest scores will be dropped and each quiz is only worth 2%. (it isn't worth the effort and risk to cheat)**

Examples of things you are allowed to do with friends or an artificial intelligence chatbot or the internet or a discussion board forum:

- Ask general questions to clarify misunderstandings
- Brainstorm or explore an idea or confusion
- Go through examples to practice that are different than those on the quiz
- Develop study guides and cheat sheets

Examples of things that are prohibited:

- Generating content either partially or completely and submitting it as your own original content
- Solving problems or equations from quizzes
- Rewriting or correcting your quiz answers
- Answering quiz or exam questions

There can be a fine line between using others' work to study or get help and copying answers. If we suspect via the Canvas quizzes that the answers in your quiz do not reflect your own learning and knowledge, we will request an investigation of misconduct. Canvas has features that alert to behaviors such as pasting from a browser window, clicks outside of the quiz, etc. If you decide to use AI to help you learn in this class, keep a log of all interactions, as these are evidence that you used AI according to the policy. If you use AI to copy answers for your quizzes, be prepared for the possibility that you will fail the in-class tests, as they do not offer an opportunity to look up answers.

### **UBC Department of Psychology Grading Policy**

In the Psychology Department, we aim to offer learning experiences that welcome and challenge all students to engage meaningfully in our discipline. We strive for grades that accurately reflect student learning and achievement of course learning objectives, rather than solely reflecting their performance relative to others.

In Psychology at UBC-V, we employ department-wide grading standards to promote equitable alignment, supporting students and course instructors as they learn and teach across many diverse courses and sections. For each Course Section, instructors should aim for a grade average in the following Target Ranges (before any bonus HSP points are added, but including any mandatory HSP points): B- (68-71%) in Introductory 100-level and 200-level courses; B (72-75%) in Intermediate 300-level courses; B+ (76-79%) for Advanced 400-level courses and

Selective-Entry lower-level courses (e.g., PSYC 277, 278, 312, 370, 371, 349, 359, 365). Ranges are intended to provide some flexibility to instructors and account for differences that can occur between classes. Ranges increase across year levels to account for improvements in student learning, and students' ability to self-select into more specialized courses.

During the course, instructors may choose to adjust grades and/or difficulty of the assessments, to align with the Target Range. **At the end of the course, if the average falls outside the Target Range (either direction), instructors will typically be expected to use a linear transformation to adjust final grades (i.e., add or subtract the same number of points to all students' marks, while ensuring no student fails the course due to this transformation).** If a course mean falls in within one +/- letter grade band above the Target Range (e.g., in the B+ range for Intermediate courses), and the instructor believes these grades to be justified, the instructor may submit a justification request using the departmental approval final grades submission form, and the grades may stand. This Upper Range is intended to inspire further excellence in learning and teaching, and allow for the possibility that some classes select for higher performing students. Courses with means exceeding the Upper Range will be expected to provide justification as well as use a linear transformation to fall within the Upper Range.

### Final Grades

The final letter grade will be given following the [UBC's Grading Practices](#).

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

### Other Policies

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#### Accessibility and Accommodation

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UBC's Centre for Accessibility (CfA) coordinates [academic accommodations for students with disabilities and ongoing medical conditions](#). The teaching team will work with any student who has accommodation to the best of their ability. **Please send your accommodation form to your assigned TA as soon as possible so we can confirm steps we need to take. Your assigned TA will log your accommodation and ensure Dr. Flake is aware of it.**

#### University Policies and Resources

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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 assault. 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, spiritual and cultural observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions.

Details of the policies and how to access support are available on [the UBC Senate website](#).