
PSYC 301	Research Methods and Data Analysis in Psychology II	Winter 2023
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Instructor: Dr. Claire Midgley Email: claire.midgley@ucalgary.ca Office: AD 216 Drop-in Office Hours: Thurs. 11:30am-1:30pm One-On-One Meetings: Book here	Lecture Days/Time (& Location): Section 01: TR 09:30 - 10:45 (EDC 179) Section 02: TR 14:00 - 15:15 (EDC 179) Lab Location: SS 18 Lab Days/Times: Variable, see your schedule Lab Instructors/TAs: Variable, see D2L
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Course Description

An integration of research methods and statistics in psychological research, with an emphasis on conducting and interpreting inferential statistical techniques.

Course Learning Outcomes

The Department of Psychology is committed to student knowledge and skill development. The table below lists the key learning outcomes for this course, the program-learning outcomes they facilitate (see <https://live-arts.ucalgary.ca/psychology/about#program-learning-outcomes>), and the expected level of achievement.

Course Learning Outcomes	Assessment Methods	PLO(s)	Level(s)
Identify the theoretical underpinnings of various statistical analyses and assumptions that must be met to conduct these statistical analyses	Multiple choice tests, Lab assignments 1-7	3	C
Identify which statistical analysis is appropriate based on a study's research question and methodology	Multiple choice tests, Lab assignments 2,4,6,7,8	2	C
		3	C
		4	C
Conduct and interpret statistical calculations by hand and using statistical software	Multiple choice tests, lab assignments 2,4,6,7,8	3	C
Design research using appropriate methodology to test a research question	Lab assignments 1, 3, 5	1	C
		2	C
		3	C
		4	C
		5	C
		6	C
		7	C
Accurately and effectively communicate research findings in APA format	Lab assignments 2,4,6, 8	3	C
		4	C

		5	C
Effectively communicate research findings in a non-academic format	Lab assignment 7	3	C
		4	C
		5	C
		6	C
		7	C
Draw and interpret graphical depictions of data (single factor and factorial)	Multiple choice tests, Lab assignments 2, 4, 6, 7, 8	2	C
		3	C
		4	C

Notes. PLOs = Program-Learning Outcomes: 1 = demonstrate knowledge of psychological sciences, 2 = think critically and solve problems, 3 = conduct research and analyze data, 4 = communicate effectively, 5 = demonstrate information literacy, 6 = understand and implement ethical principles in a diverse world, 7 = apply psychological knowledge and skills, 8 = Demonstrate multicultural competence and awareness of issues related to equity, diversity,* and inclusion. Level of PLO achievement facilitated by this course: I = introductory, C = competency, A = advanced.

Acknowledgments and Respect for Diversity

Our classrooms view diversity of identity as a strength and resource. Your experiences and different perspectives are encouraged and add to a rich learning environment that fosters critical thought through respectful discussion and inclusion. The Department of Psychology would also like to acknowledge the traditional territories of the people of the Treaty 7 region in southern Alberta. The City of Calgary is also home to Métis Nation of Alberta, Region III.

Course Format

This is an in-person class held on campus.

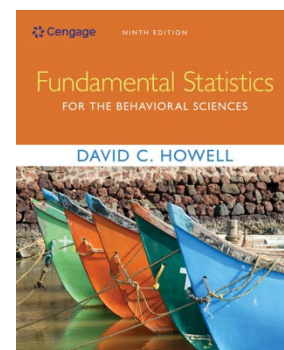
Prerequisites

- PSYC 200 – Principles of Psychology I
- One of Mathematics 30-1, Mathematics 30-2, Pure Mathematics 30, Applied Mathematics 30, Mathematics 31, or Mathematics II (offered by Continuing Education). Equivalents will be accepted for students from outside Alberta.
- PSYC 300 – Research Methods and Data Analysis in Psychology I

Required Text

Howell, D. C. (2017). *Fundamental Statistics for the Behavioral Sciences (9th Ed.)*. Belmont, CA: Thomson Wadsworth.

This text can be purchased at the University of Calgary Bookstore. Key material from the text will be covered in class; however, obtaining a copy of the text will be necessary to excel in the course, as there will be questions on the tests that are covered in the text but not in class. Using an earlier edition is not officially endorsed (as I cannot be 100% certain whether all text-based test questions are covered by earlier editions) but doing so will likely not result in a radically different final grade in the course.



Assessment Methods

<i>In-Class Assessments</i>	<i>Date</i>	<i>Weight</i>
Test 1	Tues. Feb. 7 th	18%
Test 2	Tues. Mar. 21 st	24%
Test 3	Tues. Apr. 11 th	12%

<i>Submitted Assessments</i>	<i>Due Date</i>	<i>Weight</i>
Assignment 1 (D2L Quiz)	Fri. Jan. 20 th	2%
Assignment 2 (D2L Dropbox)	Fri. Feb 3 rd	6%
Assignment 3 (D2L Quiz)	Fri. Feb. 10 th	2%
Assignment 4 (D2L Dropbox)	Fri. Mar. 3 rd	6%
Assignment 5 (D2L Quiz)	Fri. Mar. 10 th	2%
Assignment 6 (D2L Dropbox)	Fri. Mar. 17 th	6%
Assignment 7 (D2L Dropbox)	Fri. Mar. 31 st	16%
Assignment 8 (D2L Dropbox)	THURS. Apr. 6 th	6%

Tests (54%). There will be three in-class tests during this course; all tests will be multiple-choice and cover material since the previous test (or start of the course, for Test 1). All material covered in lecture and in the assigned chapters is testable. Tests in this course are closed book, but you will be provided with a formula sheet and any reference material that is required (e.g., z-table). You will also be permitted the use of a personal scientific (non-programmable) calculator. The use of other resources, including class notes, the textbook, and online resources, is prohibited during the tests in this course. Students may not communicate with others about course material or the test either in person or electronically during tests.

Assignments (46%). Each of the 8 labs has an associated assignment. Assignments 2, 4, 6, and 8 are all worth 6% of the final grade (24% total) and will involve using publicly available data sets to practice conducting and reporting various statistical tests. For the remaining assignments (i.e., the “Survey Project”) you will help create a survey that will be taken by all PSYC 301 students (A1; 2%), complete and reflect on the survey or participate in a replacement assignment (A3; 2%), create a composite score for the outcome variable (DV) assessed by you and other members of your lab (A5; 2%), and then run an analysis with the predictors of your choice and report your findings in a final infographic (A7; 16%). More information and detailed rubrics for all assignments will be uploaded to D2L.

IMPORTANT: Students must achieve a passing grade on BOTH the in-class and lab components (i.e., tests & assignments) to pass this course.

University of Calgary Academic Integrity Policy

Academic integrity is the foundation of the development and acquisition of knowledge and is based on values of honesty, trust, responsibility, and respect. We expect members of our community to act with integrity.

Research integrity, ethics, and principles of conduct are key to academic integrity. Members of our campus community are required to abide by our institutional code of conduct and promote academic integrity in upholding the University of Calgary's reputation of excellence. It is your responsibility to ensure that you have read and are familiar with the student academic misconduct policy:

<https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Student-Academic-Misconduct-Policy.pdf>

Department of Psychology Criteria for Letter Grades

Psychology course instructors use the following criteria when assigning letter grades:

A+ grade: *Exceptional Performance.* An A+ grade indicates near perfect performance on multiple choice and short answer tests/exams. For research papers/essays/course projects/presentations, an A+ grade is awarded for exceptional work deserving of special recognition and is therefore not a common grade.

A, A- Range: *Excellent Performance.* Superior understanding of course material. Written work is very strong in terms of critical and original thinking, content, organization, and the expression of ideas, and demonstrates student's thorough knowledge of subject matter.

B Range: *Good Performance.* Above average understanding of course material. Written work shows evidence of critical thinking and attention to organization and editing but could be improved in form and/or content.

C Range: *Satisfactory Performance.* Adequate understanding of course material. Knowledge of basic concepts and terminology is demonstrated. Written work is satisfactory and meets essential requirements but could be improved significantly in form and content. Note: All prerequisites for courses offered by the Faculty of Arts must be met with a minimum grade of C-.

D range: *Marginally meets standards.* Minimal understanding of subject matter. Written work is marginally acceptable and meets basic requirements but requires substantial improvements in form and content. Student has not mastered course material at a level sufficient for advancement into more senior courses in the same or related subjects.

F grade: *Course standards not met.* Inadequate understanding of subject matter. Written work does not meet basic requirements. Student has not demonstrated knowledge of course material at a level sufficient for course credit.

Grading Scale

A+	96-100%	B+	80-84%	C+	67-71%	D+	54-58%
A	90-95%	B	76-79%	C	63-66%	D	50-53%
A-	85-89%	B-	72-75%	C-	59-62%	F	0-49%

To determine final letter grades, final percentage grades will be rounded up or down to the nearest whole percentage (e.g., 89.5% will be rounded up to 90% = A but 89.4% will be rounded down to 89% = A-).

Tentative Lecture Schedule

Week	Date	Lecture Topic	Relevant Text Material	Lab Topic	Student Deadlines (all 11:59pm; and all on Fridays, unless otherwise noted)	TA/Instructor Deadline (all 11:59pm; and all on Fridays, unless otherwise noted)
1	T Jan 10	Course Overview & Review of key concepts from PSYC 300	Ch. 1-8	NO LABS	Bonus Course Outline Quiz Due (+1%)	---
	R Jan 12	One-sample t-tests	Ch 12 (12.1-12.5)			
2	T Jan 17	Confidence limits on the mean	Ch 12 (12.7)	Lab 1: Develop DV for Survey Project	A1 Due (2%) <i>End of 1-week extension period for Bonus Course Outline Quiz</i>	
	R Jan 19	Independent Samples t-tests <i>+ Last day to drop a class without financial penalty</i>	Ch. 14 (14.1, 14.4)			
	F Jan 20	<i>Last day to add or swap a course</i>				
3	T Jan 24	Wilcoxon Rank Sum Test	Ch. 20 (20.1, p. 526-528)	Lab 2: Independent Sample T-tests (A2)	<i>Last day to submit Bonus Course Outline Quiz</i> <i>End of 1-week extension period for A1</i> <i>Last day to submit A1</i>	Sun. Jan 29 th : Grades for all A1s posted
	R Jan 26	Power, Part I	Ch. 15 (15.1-15.5)			
	F Jan 27	<i>Fee payment deadline for Fall Term full and half courses.</i>				
4	T Jan 31	Power, Part II	---	Lab 3: Complete & reflect on survey (A3)	A2 Due (6%)	
	R Feb 2	Test 1 Review	---			
5	T Feb 7	Test 1 (18%)		NO LABS	A3 Due (2%) <i>End of 1-week extension period for A2</i>	---
	R Feb 9	One-way ANOVA	Ch. 16 (16.1-16.3)			

6	T Feb 14	Multiple Comparisons	---	Lab 4: One-way ANOVA (A4)	<i>End of 1-week extension period for A3 Last day to submit A2 & A3</i>	Grades for Test 1 and on-time A2s posted
	R Feb 16	Factorial Designs	---			
7	M Feb 20	UNIVERSITY CLOSED Alberta Family Day		NO LABS	---	Sun. Feb. 26 th : Grades for all A3s posted
	Feb 21- 24	No lectures (Term Break)				
8	T Feb 28	Between Subjects Factorial ANOVA, Part I	Ch. 17 (17.1-17.3)	Lab 5: Create composite item for DV (A5)	A4 Due (6%)	<i>Grades for make-up Test 1s & A2s posted</i>
	R Mar 2	Between Subjects Factorial ANOVA, Part II	---			
9	T Mar 7	Paired t-tests	Ch. 13 (13.1-13.4)	Lab 6: Factorial ANOVA (A6)	A5 Due (2%) <i>End of 1-week extension period for A4</i>	---
	R Mar 9	Wilcoxon Signed Rank	(20.1, p. 531-532)			
10	T Mar 14	Repeated Measures ANOVA	Ch. 18 (18.1)	Lab 7: Time to analyze data for A7	A6 Due (6%) <i>End of 1-week extension period for A5 Last day to submit A4 & A5</i>	Grades for on-time A4s posted
	R Mar 16	Test 2 Review	---			
11	T Mar 21	Test 2 (24%)		NO LABS	<i>End of 1-week extension period for A6</i>	Grades for all A5s posted
	R Mar 23	Correlation	Ch. 9 (9.1-9.10)			
12	T Mar 28	Regression	Ch. 10	Lab 8: Paired t-tests & repeated measures ANOVA (A8)	A7 Due (16%) <i>Last day to submit A6</i>	Grades for Test 2s, on-time A6s, and remaining A4s posted
	R Mar 30	Multiple Regression	Ch. 11			

13	T Apr 4	Chi-square	Ch. 19 (19.1- 19.2)	NO LABS	THURS. Apr. 6th: A8 Due (6%) <i>Fri. Apr. 7th: End of 1-week extension period for A7</i>	<i>Grades for make-up Test 2s posted</i>
	<i>Deadline to write make-up Test 2</i>					
	R Apr 6	Test 3 Review	---			
F Apr 7	<i>UNIVERSITY CLOSED Good Friday</i>					
14	M Apr 10	<i>UNIVERSITY CLOSED Easter Monday</i>		NO LABS	<i>Wed. Apr. 12th:</i> <i>Extension period ends for A8</i> <i>Fri. Apr. 14th: Last day to submit A7</i>	
	T Apr 11	Test 3 (12%)				
	W Apr 12	<i>Fall Term Lectures End. Last day to withdraw with permission from Fall Term half courses.</i>				
	Apr 15- 26	<i>Final Exam Period (no exam in this course)</i> <i>Wed. Apr. 19th: Last day to write make-up Test 3</i>		NO LABS	<i>Wed. Apr. 19th:</i> <i>Last day to submit A8</i>	Grades for Test 3, <i>remaining A6s, all A7s, and all A8s posted after final grades are accepted by the department</i>

Bonus Course Credits

Research Participation (Max 2% added to final grade)

Students in this course are eligible to participate in Departmentally approved research and earn credits toward their final grades. **A maximum of two credits (2%) per course, including this course, may be applied to the student's final grade. Students earn 0.5% (0.5 credits) for each full 30 minutes of participation.** The demand for timeslots may exceed the supply in the term. Thus, students are not guaranteed that there will be enough studies available to receive the maximum bonus credits. Thus, students should seek studies early in the term and should frequently check for open timeslots. Students can create an account and participate in Departmentally approved research studies at <http://ucalgary.sona-systems.com>. The last day to participate in studies and to assign or reassign earned credits to courses is **Wednesday, April 12, 2023**.

Course Outline Quiz (Max 1% added to final grade). Additionally, students in this course can earn an extra 1% towards their final grade in the course by scoring 100% on the Bonus Course Outline Quiz which will be available on D2L (Assessments > Quizzes). Note that the last day to submit this Quiz without late penalty will be Friday, Jan. 20th, and the last it will be available is Friday Jan. 27th.

Absence From Test/Exam/Other In-Class Assessment

Makeup assessments are **NOT** an option without the approval of the instructor

<https://www.ucalgary.ca/pubs/calendar/current/g-1-1.html>. At the instructor's discretion, a makeup assessment may differ significantly (in form and/or content) from the regularly scheduled assessment. Once approved by the instructor a makeup test/exam must be written within 2 weeks of the missed test/exam on a day/time scheduled by the instructor.

In this course, if you miss an in-class assessment (i.e., a Test) you must complete [this form](#) as soon as possible after the missed assessment, indicating ALL possible times that you can complete a make-up assessment in the 2-week period following the original assessment date. Once the form deadline has passed the instructor will then let you know the date, time, and format of your make-up assessment within 24-hours, via email. If you do complete the form in time OR are unable to complete a make-up assessment within 2-weeks following the original date, you will receive a grade of zero on the assessment (unless you apply for, and are granted, an official Deferral of Term Work).

NOTE: As Test 3 falls on the last day of class, the last day to write a make-up assessment for Test 3 will be Apr. 19th (5 business days after the end of classes, which is Apr. 12th). If you cannot write a makeup test before end of day on Apr. 19th, the instructor will provide you with the information for requesting a Deferral of Term Work; however, note that deferral of term work will likely result in a delay in receiving your final grade for the course.

Late Written/Submitted Assessments

In this course, due dates have been carefully set to space out the work evenly throughout the semester and to ensure that you receive your grade (and, when applicable, written feedback) in time for it to be useful in preparing for future assessments. Thus, it is in your best interest to plan to submit the written submissions before the due dates indicated on p. 3. However, I understand that sometimes life events (e.g., technological issues, pet/childcare, mental/physical illness) can pose challenges to meeting academic deadlines. **Thus, all assignments in this course come with a built-in extension period. At the end of this extension period, A1, A3, and A5 will no longer be accepted (i.e., no late submissions). For the remaining assignments (A2, A4, A6, A7, and A8), after the end of the extension period late submissions will be accepted for one-week and penalized 5% per day, including weekends/holidays. For all assignments, if no submission is received by the last day to submit (see next page), you will receive a grade of zero for that assessment.** Note that email submissions will not be graded, and email requests for extensions will not be answered – except for instances where a student has an Accommodation from SAS (see below) that allows for extensions beyond 1-week. In the event of an unforeseen, acute, and serious illness/injury/other event that you believe warrants special consideration, please book a meeting with the instructor using the link provided at the top of this document. Note that the instructor may not grant any extensions past Apr. 12th and may not accept any late work past Apr. 19th.

Assessment	Due Date	End of Extension Period	Last Day to Submit
Assignment 1*	Fri. Jan. 20 th	Fri. Jan. 27 th	Fri. Jan. 27 th
Assignment 2	Fri. Feb. 3 rd	Fri. Feb. 10 th	Fri. Feb. 17 th
Assignment 3*	Fri. Feb. 10 th	Fri. Feb. 17 th	Fri. Feb. 17 th
Assignment 4	Fri. Mar. 3 rd	Fri. Mar. 10 th	Fri. Mar. 17 th
Assignment 5*	Fri. Mar. 10 th	Fri. Mar. 17 th	Fri. Mar. 17 th
Assignment 6	Fri. Mar. 17 th	Fri. Mar. 24 th	Fri. Mar. 31 st
Assignment 7	Fri. Mar. 31 st	Fri. Apr. 7 th	Fri. Apr. 14 th
Assignment 8	<u>THURS.</u> Apr. 6 th	<u>WED.</u> Apr. 12 th	<u>WED.</u> Apr. 19 th

* **Assignments 1 & 3, & 5: End of the extension period is also the last day they can be accepted.**

Grades

Except for the final assessments completed/submitted in the last 2-weeks of the course, grades for all assessments will be published on D2L within 2 weeks of completing/submitting the assessment (for specific grading deadlines, see the schedule on pp. 5-7). Grades for the Tests, Bonus Course Outline Quiz, A1, A3, and A5 will be uploaded/published by the instructor. A2, A4, A6, A7, and A8 will be graded by your lab instructor/TA.

Reappraisal of Graded Term Work (from <http://www.ucalgary.ca/pubs/calendar/current/i-2.html>)

A student who feels that a piece of graded term work (term paper, essay, test, etc.) has been unfairly graded, may have the work reappraised as follows:

- **For Assessments graded by a lab instructor/TA** (see above section), the student must first discuss the grade and feedback with their lab instructor. Then, if not satisfied with the reason given for the original grade or, if applicable, the revised grade, the student can arrange a meeting with the instructor (booking link at the top of this document).
- **For Tests**, the student must first view the exam answer key with the review TAs in one of the times and locations listed on D2L. Then, if there are lingering questions/concerns, the student can arrange a meeting with the instructor (booking link at the top of this document).
- **For any other concern regarding grades**, students can arrange a meeting with the instructor (booking link at the top of this document). For concerns easily addressed over email (e.g., a missing grade on D2L), students can send an email to the instructor rather than setting up a meeting.

If, after meeting with the course instructor, a student is not satisfied with the reason given for the original grade or, if applicable, the revised grade, the student can take the matter to the head of the department offering the course **within 2 business days of receiving the decision from the instructor**, who will arrange for a reappraisal of the work **within the next ten business days**. For information about reappraisal of Final Grades see: <http://www.ucalgary.ca/pubs/calendar/current/i-3.html>.

Academic Accommodations

Students seeking an accommodation based on disability or medical concerns should contact Student Accessibility Services; SAS will process the request and issue letters of accommodation to instructors. For additional information on support services and accommodations for students with disabilities, visit www.ucalgary.ca/access/. Students who require an accommodation in relation to their coursework based on a protected ground other than disability should communicate this need in writing to their instructor. The full policy on Student Accommodations is available at [University of Calgary : B.6.1 Accommodation of Students with Disabilities or Medical Conditions \(ucalgary.ca\)](#)

Academic Misconduct

For information on academic misconduct and its consequences, please see the University of Calgary Calendar at <http://www.ucalgary.ca/pubs/calendar/current/k.html>

Instructor Intellectual Property

Course materials created by professor(s) (including course outlines, presentations and posted notes, labs, case studies, assignments, and tests/exams) remain the intellectual property of the professor(s). These materials may NOT be reproduced, redistributed, or copied without the explicit consent of the professor. The posting of course materials to third party websites such as note-sharing sites without permission is prohibited. Sharing of extracts of these course materials with other students enrolled in the course at the same time may be allowed under fair dealing.

Copyright Legislation

All students are required to read the University of Calgary policy on Acceptable Use of Material Protected by Copyright (<https://www.ucalgary.ca/legal-services/university-policies-procedures/acceptable-use-material-protected-copyright-policy>) and requirements of the copyright act (<https://laws-lois.justice.gc.ca/eng/acts/C-42/index.html>) to ensure they are aware of the consequences of unauthorized sharing of course materials (including instructor notes, electronic versions of textbooks etc.). Students who use material protected by copyright in violation of this policy may be disciplined under the Non-Academic Misconduct Policy.

Freedom of Information and Protection of Privacy

Student information will be collected in accordance with typical (or usual) classroom practice. Students' assignments will be accessible only by the authorized course faculty. Private information related to the individual student is treated with the utmost regard by the faculty at the University of Calgary

Student Support and Resources

<https://www.ucalgary.ca/registrar/registration/course-outlines>

Important Dates

The last day to drop this course with no "W" notation and **still receive a tuition fee refund** is **Thursday, January 19, 2023**. Last day add/swap a course is **Friday, January 20, 2023**. The last day to withdraw from this course is **Wednesday, April 12, 2023** [University of Calgary : Academic Schedule \(ucalgary.ca\)](#)