
PYSC 301	Research Methods and Data Analysis in Psychology II	Summer 2022
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Instructor:	Dr. Brendan McAllister	Lecture Location:	ST 064
		Lecture Days/Time:	MW 13:00-15:45
Email:	bmcallis@ucalgary.ca	Lab Location:	SS 018
Office Hours:	By appointment – please email the instructor to arrange a meeting	Lab Day/Time:	W 8:00-11:45
		Lab TA:	Lorena Solis lorena.solis@ucalgary.ca

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 psyc.ucalgary.ca/undergraduate/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 exams, lab assignments	3	C
Identify which statistical analysis is appropriate based on a study's research question and methodology	Multiple choice exams, lab assignments	2, 3, 4	C
Conduct and interpret statistical calculations by hand and using statistical software	Multiple choice exams, lab assignments, lab report	3	C
Design research using appropriate methodology to test a research question	Lab assignments	1, 2, 3, 4, 5, 6, 7	C
Effectively communicate research findings	Lab assignments, lab report	3, 4, 5, 7	C
Write all elements of a laboratory report in APA format	Lab assignments, lab report	3, 4, 5	C
Use PSYCINFO to locate primary research relevant to a specific topic	Lab assignments, lab report	5	A
Draw and interpret graphical depictions of data (single factor and factorial)	Multiple choice exams, lab assignments, lab report	2, 3, 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

Psychology 300 – Research Methods and Data Analysis in Psychology I

Required Text

Howell, D. C. (2017). *Fundamental Statistics for the Behavioral Sciences* (9th Ed.). Cengage Learning. (Available in hard copy or digital format from the University Bookstore.)

It is also recommended that you obtain a copy of the *Publication Manual of the American Psychological Association* (7th Ed.). You will be expected to conform to APA format in all assignments you submit. There are numerous web resources to assist you in using APA format, but where there is a discrepancy in the information, the official APA guidelines will be marked as correct. The manual is available in hard copy from the University Bookstore.

Assessment Methods

Class components (60% of final grade).

Exams. There will be two exams during this course: a midterm and a final exam. Both will be multiple-choice and will focus on lecture material. The midterm and final exam will be worth 25% and 35% of your mark, respectively (60% total). The final exam will be cumulative with an emphasis on material covered after the midterm exam.

Exams in this course are closed book. The use of resources, including class notes, the textbook, and online resources, is prohibited during the exams in this course. Students may not communicate with others about course material or the exam either in person or electronically during exams. For tests requiring computations, a non-graphics-based calculator may be used. For some tests, formula information will be provided at the time of the test.

Exam dates and topics are as follows:

Exam	Date	Topics
Midterm Exam	July 13, 2022	One Sample t -test, Confidence Limits on the Mean, t -test for Independent Samples and the Wilcoxon Rank Sum Test, Statistical Power, One-Way ANOVA, and Multiple Comparisons
Final Exam	TBD (during final exam period; Aug. 12-15)	All material in the course with an emphasis on material since Exam 1

If you miss an exam without instructor approval, you will receive a score of 0 for that exam.

Lab components (40% of final grade).

There will be one lab report and five lab assignments, which in total will comprise 40% of your grade. Instructions for completing your report and assignments will be posted on D2L. Assignments will be due in **hard copy at the beginning of lab** (due dates indicated on the course schedule below), unless otherwise noted on the schedule. Without instructor approval, late assignments will be penalized 10% per day, including weekends. Lab assignments will NOT be accepted via electronic submission unless prior approval is received from one's lab instructor.

The grades allocated for each assignment are as follows:

Lab Assignment 1: Independent Samples t -Tests	6%
Lab Assignment 2: Factorial ANOVA	6%
Lab Assignment 3: Draft of Intro & Method	2%
Lab Assignment 4: Paired t -Tests	6%
Lab Assignment 5: Repeated Measures ANOVA	6%
Lab Report	<u>14%</u>
	Total 40%

It is expected that you will complete all components of the course. Students must achieve a passing grade on BOTH the class and lab components 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/policies/files/policies/student-academic-misconduct-policy.pdf>.

Department of Psychology Criteria for Letter Grades

Psychology professors 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 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%

As stated in the University Calendar, it is at the instructor's discretion to round off either upward or downward to determine a final grade when the average of term work and final examinations is between two letter grades. 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	Textbook Material	Lab Topic	Deadlines
1	M Jun 27	First day of classes. Intro to PSYC 301; One Sample t-tests	Course Outline Ch. 12		
	W Jun 29	Confidence Limits on the Mean; Comparing Two Group Means: Independent Samples t-tests	Ch. 12 Ch. 14	Independent-Samples t-tests	
	R June 30	Last day to drop classes without penalty and last day to add or swap classes			
	F Jul 1	CANADA DAY No Classes			
2	M Jul 4	Comparing Two Group Means: Wilcoxon Sum Rank Test; Power	Ch. 20 Ch. 15		
	W Jul 6	One-way Analysis of Variance (ANOVA); Multiple Comparisons	Ch. 16	Participate in Online Study/Outline of Final Paper	Independent samples t-test assignment due
3	M Jul 11	Review			
	W Jul 13	Midterm Exam		One Way ANOVA: Analyze Data for Final Paper and Final Paper Q&A	
4	M Jul 18	Factorial Designs			
	W Jul 20	Between Subjects Factorial ANOVA	Ch. 17	Factorial ANOVA	Draft of intro and method for final paper due
5	M Jul 25	Comparing Paired Data: Paired t-tests and Wilcoxon Signed Rank Test	Ch. 13 Ch. 20		
	W Jul 27	Repeated-measures ANOVA	Ch. 18	Paired t-tests	Factorial ANOVA lab assignment due
6	M Aug 1	HERITAGE DAY No Classes			
	W Aug 3	Correlation and Regression	Ch. 9 Ch. 10	Repeated Measures ANOVA	Paired t-test lab assignment due
7	M Aug 8	Multiple Regression; Chi-square	Ch. 11 Ch. 19		

	W Aug 10	Final Exam Review. End of Spring Lectures and last day to withdraw from a course.		No Lab	Final paper and repeated-measures ANOVA lab assignment due at start of lecture (1:00pm)
	W Aug 12-15	Final Exam Period			

Course Credits for Research Participation (Max 2% of final grade)

Students in most psychology courses 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 a given term. Thus, students are not guaranteed that there will be enough studies available to them to meet their credit requirements. 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 **August 10, 2022**.

Seating During Exams

Instructors and exam invigilators are free to ask students to move seats before an exam begins or even during an exam. Students must comply with this request and refusal to do so may warrant a charge of academic misconduct.

Absence From A Test/Exam

Makeup tests/exams are **NOT** an option without the approval of the instructor. A student may be asked to provide supporting documentation for an exemption/special request for a make-up exam <https://www.ucalgary.ca/pubs/calendar/current/m-1.html>. Students who miss a test/exam have up to 24 hours to contact the instructor to ask for a makeup test/exam. It's the instructor's discretion if they will allow a make-up exam. Students who do not schedule a makeup test/exam with the instructor within this 24-hour period forfeit the right to a makeup test/exam. At the instructor's discretion, a makeup test/exam may differ significantly (in form and/or content) from a regularly scheduled test/exam. Once approved by the instructor a makeup test/exam must be written within 1 week of the missed test/exam during exam make-up hours provided by the department <http://psychology.ucalgary.ca/undergraduate/exam-and-course-information#mues>. If a student cannot write their final exam on the date assigned by the Registrar's Office, they need to apply for a deferred exam <https://www.ucalgary.ca/registrar/exams/deferred-exams>.

Travel During Exams

Consistent with University regulations, students are expected to be available to write scheduled exams at any time during the official June and August examination periods. Requests to write a make-up exam

because of conflicting travel plans (e.g., flight bookings) will NOT be considered by the department. Students are advised to wait until the final examination schedule is posted before making any travel arrangements. If a student cannot write their final exam on the date assigned by the Registrar's Office, they need to apply for a deferred exam <https://www.ucalgary.ca/registrar/exams/deferred-exams>. Students with an exceptional extenuating circumstance (e.g., a family emergency) should contact the Department of Psychology (psyugrd@ucalgary.ca).

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

Reappraisal of Final Grade <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 <http://www.ucalgary.ca/policies/files/policies/student-accommodation-policy.pdf>.

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 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 (www.ucalgary.ca/policies/files/policies/acceptable-use-of-material-protected-by-copyright.pdf) 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, June 30, 2022**. The last day for registration/change of registration is **June 30, 2022**. The last day to withdraw from this course is **Wednesday, August 10th, 2022**.