
PSYC 301	Research Methods and Data Analysis in Psychology II	Winter 2020
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Instructor:	Dr. Melissa Boyce	Lecture Location:	D2L
Phone:	403-210-6257	Lecture Days/Time:	Online
			Exam 2: Thursday, March 19, 2- 3:15pm via D2L Quizzes
			Final Exam: Monday, April 20, 3:30 – 5:30pm via D2L Quizzes
Email:	mboyce@ucalgary.ca		
Office:	Admin 258		
Office Hours:	By email to set up an in-person or Zoom meeting		

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 5-10	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

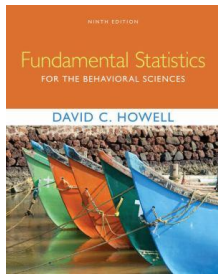
Notes. PLOs = Program-Learning Outcomes: 1 = demonstrate knowledge of psychological sciences, 2 = think critically and solve problems, 3 = conduct research and analyze data, 4 = communicate effectively, 5 = demonstrate information literacy, 6 = understand and implement ethical principles, 7 = apply psychological knowledge and skills. Level of PLO achievement facilitated by this course: I = introductory, C = competency, A = advanced.

Prerequisites

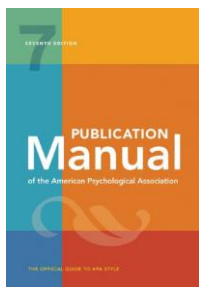
PSYC 200 – Principles of Psychology I and one of: Mathematics 30-1, Mathematics 30-2, Pure Mathematics 30, Applied Mathematics 30, Mathematics 31, or Mathematics II (offered by Continuing Education). Equivalentents will be accepted for students from outside Alberta.

Recommended Text

Howell, D. C. (2017). *Fundamental Statistics for the Behavioral Sciences (9th Ed.)*. Belmont, CA: Thomson Wadsworth. Available in hard copy or e-copy from the university bookstore.



It is also STRONGLY recommended that you obtain a copy of the *Publication Manual of the American Psychological Association (7th Ed.)* as you will be expected to conform to APA format in all assignments you submit. Available in the university bookstore. A digital copy of the APA Manual is also available for purchase online.



Assessment Methods

Class components (70% of final grade).

Exams. There will be three exams during this course; all exams will be multiple-choice and will focus on lecture material. Exam 1 and 2 are worth 20% and Exam 3 is worth 30% of your mark

(70% total). Exams 1 and 2 will be non-cumulative insofar as they will be limited to material covered since the previous exam. However, many of the concepts in this course are inherently cumulative in that they assume knowledge and understanding of material introduced earlier. Exam 3 will be two hours in length and will be cumulative with an emphasis on material since Exam 2.

Exam dates and topics are as follows:

	Date	Topics
Exam 1	February 13, 2020	The One Sample t -test, Confidence Limits on the Mean, Experiments with Two Groups: The t -test for Independent Samples and the Wilcoxon Rank Sum Test, Statistical Power, Single Factor Experiments with More than Two Groups: One- Way ANOVA, and Multiple Comparisons
Exam 2	March 19, 2020 2 – 3:15pm D2L Quizzes	Factorial Designs, Factorial ANOVA, Within-subjects Two Group Designs: Paired t -tests and Wilcoxon Signed Rank Test
Exam 3	April 20, 2020 3:30 – 5:30pm D2L Quizzes	All material in the course with an emphasis on material since Exam 3

Lab components (30% of final grade).

Lab Report. An APA-formatted report based on a study to be conducted during lab. The final version, worth 8% of your mark, is **due to the appropriate D2L dropbox at the beginning of your lab the week of March 30**. Instructions for completing your report will be posted on D2L and provided in lab.

Lab Assignments. There will be ten lab assignments, which in total will comprise 22% of your grade. Lab assignments will be due **to the appropriate D2L dropbox at the beginning of lab** (due dates indicated on course schedule below).

The grades allocated for each assignment are as follows:

Lab Assignment 1: Independent Samples t -Tests	4%
Lab Assignment 2: ANOVA	4%
Lab Assignment 3: Draft of Intro & Method	2%
Lab Assignment 4: Paired t -Tests	4%
Lab Assignment 5: Repeated Measures ANOVA	4%

Lab Assignment 6: Correlation and Regression 4%
Total 22%

It is expected that you will complete all components of the course. If you miss an exam without appropriate documentation, you will receive a score of 0 for that exam.

Without appropriate documentation, late lab assignments (including the final paper) will be deducted 5% per day (including weekends) up to a maximum of 35% (7 days), at which point, late assignments will no longer be accepted. All assignments must be submitted **via the appropriate D2L dropbox**.

Students must achieve a passing grade on BOTH the class and lab components to pass this course.

Calculators & Formula Sheets

For tests requiring computations, a calculator may be used. For some tests, formula information will be provided at the time of the test. **No other resources are allowed during tests.**

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	Relevant Text Material	Lab Topic	Lab Assignment Due
1	T Jan 14	Introduction to PSYC 301	Course Outline	No Lab (Due to beginning of term)	
	R Jan 16	The One Sample <i>t</i> -test <i>Last day to drop Winter Term half-courses.</i>	Ch. 12		
2	T Jan 21	Confidence Limits on the Mean	Ch. 12	Participate in online study & outline of research paper	
	R Jan 23	Experiments with Two Groups: The <i>t</i> -test for Independent Samples <i>Last day to drop a class without financial penalty</i>	Ch. 14		
	F Jan 24	<i>Last day to add or swap a course.</i>			
3	T Jan 28	Experiments with Two Groups: The Wilcoxon Rank Sum Test	Ch. 20	Independent Samples <i>t</i> -tests	
	R Jan 30	Statistical Power	Ch. 15		
	F Jan 31	<i>Tuition Fee Deadline</i>			

4	T Feb 4	Single Factor Experiments with More Than Two Groups: One-Way Analysis of Variance (ANOVA)	Ch. 16	Analyze Experiment	Independent Groups <i>t</i> -test Assignment due beginning of lab
	R Feb 6	Multiple Comparison Procedures			
5	T Feb 11	Review		Intro/Method Q and A	
	R Feb 13	Exam 1			
6	T Feb 16	Reading Week – No Lecture		No Lab (due to Reading Week)	
	R Feb 18	Reading Week – No Lecture			
7	T Feb 25	Factorial Designs		Factorial ANOVA	Draft of Introduction and Method due beginning of lab
	R Feb 27	Factorial Designs			
8	T Mar 3	Factorial ANOVA I	Ch. 17	Paired <i>t</i> -tests	ANOVA Assignment due beginning of lab
	R Mar 5	Factorial ANOVA II	Ch. 17		
9	T Mar 10	Within-Subjects Designs: The Paired <i>t</i> -test	Ch. 13	Repeated Measures ANOVA	Paired <i>t</i> -test Assignment due beginning of lab
	R Mar 12	Within-Subjects Designs: The Wilcoxon Signed Rank Test	Ch. 20		
10	T Mar 17	Review		No Lab (due to Exam 2)	
	R Mar 19	Exam 2			
11	T Mar 24	Repeated Measures ANOVA	Ch. 18	Correlation and Regression	Repeated Measures ANOVA Assignment due beginning of lab to D2L Dropbox
	R Mar 26	Correlation	Ch. 9		

12	T Mar 31	Regression	Ch. 10	Applying to Graduate School and Career Options in Psychology	Lab Report due at the beginning of lab to D2L Dropbox Correlation and Regression Assignment due beginning of lab to D2L Dropbox
	R Apr 2	Practice with Correlation and Regression			
13	T Apr 7	Multiple Regression	Ch. 11	No Lab (due to Good Friday)	
	R Apr 9	Chi-Square	Ch. 19		
	F Apr 10	Good Friday			
14	M Apr 13	Non-Instructional Day, University Open		No Lab (due to last week of term)	
	T Apr 14	Review			
	W Apr 15	<i>Last day of classes, last day to withdraw from winter semester</i>			
	Apr 15- 27	Final Exam			

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 reassigned earned credits to courses is **April 15, 2020**.

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/n-1.html>. Students who miss a test/exam have up to 48 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 48-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 2 weeks 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 December and April 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>

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.

Student Organizations

Psychology students may wish to join the Psychology Undergraduate Students' Association (PSYCHS). They are located in Administration 130 and may be contacted at 403-220-5567.

Student Union VP Academic: Phone: 403-220-3911 suypaca@ucalgary.ca

Student Union Faculty Rep.: arts1@su.ucalgary.ca

Important Dates

The last day to drop this course with no “W” notation and **still receive a tuition fee refund** is **January 23, 2020**. Last day for registration/change of registration is **January 24, 2020**. The last day to withdraw from this course is **April 15, 2020**.