
PSYC 301	Research Methods and Data Analysis in Psychology II	Winter 2019
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Instructor:	Dr. Melissa Boyce	Lecture Location:	MFH 162
Phone:	403-210-6257	Lecture Days/Time:	TR 2:00-3:15pm
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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 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. Mathematics II (offered by Continuing Education), or 50 per cent or higher on the Mathematics Diagnostic Test. Equivalents will be accepted for students from outside Alberta.

Recommended Text

Howell, D. C. (2014). *Fundamental Statistics for the Behavioral Sciences (8th Ed.)*. Belmont, CA: Thomson Wadsworth.

It is also STRONGLY recommended that you obtain a copy of the *Publication Manual of the American Psychological Association (6th Ed.)* as you will be expected to conform to APA format in all assignments you submit.

Both books are available in the university bookstore.

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 cumulative with an emphasis on material since Exam 2.

Exam dates and topics are as follows:

	Date	Topics
Exam 1	February 12, 2019	The One Sample <i>t</i> -test, Confidence Limits on the Mean, Experiments with Two Groups: The <i>t</i> -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, 2019	Factorial Designs, Factorial ANOVA, Within-subjects Two Group Designs: Paired <i>t</i> -tests and Wilcoxon Signed Rank Test

Exam 3	Final Exam Period	All material in the course with an emphasis on material since Exam 3
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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 at the **beginning of your lab the week of April 1**. 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 in hard copy 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 <i>t</i> -Tests	4%
Lab Assignment 2: ANOVA	4%
Lab Assignment 3: Draft of Intro & Method	2%
Lab Assignment 4: Paired <i>t</i> -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 in hard copy at the beginning of lab.

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 non-graphics based 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	R Jan 10	Introduction to PSYC 301		No Lab (Due to Beginning of term)	
2	T Jan 15	The One Sample t-test	Ch. 12		

	R Jan 17	Confidence Limits on the Mean <i>Last day to drop Winter Term half-courses.</i>		No Lab (Due to beginning of term)	
	F Jan 18	<i>Last day to add or swap Winter Term half courses. Last day for change of registration from audit to credit or credit to audit.</i>			
3	T Jan 22	Experiments with Two Groups: The t-test for Independent Samples	Ch. 14	Participate in online study & outline of research paper	
	R Jan 24	Experiments with Two Groups: The Wilcoxon Rank Sum Test	Ch. 20		
	F Jan 25	<i>Tuition Fee Deadline</i>			
4	T Jan 29	Statistical Power	Ch. 15	Independent Samples <i>t</i> -tests	
	R Jan 31	Single Factor Experiments with More Than Two Groups: One-Way Analysis of Variance (ANOVA)	Ch. 16		
5	T Feb 5	Multiple Comparison Procedures		Analyze Experiment and Intro and Method Q and A	Independent Groups <i>t</i> -test Assignment due beginning of lab
	R Feb 7	Review			
6	T Feb 12	Exam 1		No Lab (due to Exam 1)	
	R Feb 14	Factorial Designs I	Ch. 17		
7	T Feb 19	Reading Week – No Lecture			

	R Feb 21	Reading Week – No Lecture		No Lab (due to Reading Week)	
7	T Feb 26	Factorial Designs II	Ch. 17	Factorial ANOVA	Draft of Introduction and Method due beginning of lab
	R Feb 28	Factorial ANOVA I	Ch. 17		
9	T Mar 5	Factorial ANOVA II	Ch. 17	Paired <i>t</i> -tests	ANOVA Assignment due beginning of lab
	R Mar 7	Within-Subjects Designs: The Paired <i>t</i> -test	Ch. 13		
10	T Mar 12	Within-Subjects Designs: The Wilcoxon Signed Rank Test	Ch. 20	Repeated Measures ANOVA	Paired <i>t</i> -test Assignment due beginning of lab
	R Mar 14	Review			
11	T Mar 19	Exam 2		No Lab (due to Exam 2)	
	R Mar 21	Repeated Measures ANOVA	Ch. 18		
12	T Mar 26	Correlation	Ch. 9	Lab Report Work Period	Repeated Measures ANOVA Assignment due beginning of lab
	R Mar 28	Regression	Ch. 10		

13	T Apr 2	Practice with Correlation and Regression		Correlation and Regression Lab	Lab Report due at the beginning of lab
	R Apr 4	Multiple Regression	Ch. 11		
14	T Apr 9	Chi-Square	Ch. 19	Applying to Graduate School and Career Options in Psychology	Correlation and Regression Assignment due beginning of lab
	R Apr 11	Review			
	Apr 15- 27	Final Exam			

Reappraisal of Graded Term Work <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 paper re-graded as follows. The student shall discuss the work with the instructor **within fifteen days** of being notified about the mark or of the item's return to the class. If not satisfied, the student shall **immediately** take the matter to the Director of Undergraduate Studies who will arrange for a reassessment of the work **within the next fifteen days**. Students in faculties without a departmental structure should take the matter to the dean or the associate/assistant dean (Academic/Student Affairs) of the faculty offering the course. The result of that reassessment should be given to the student in writing. ***The reappraisal of term work may cause the grade to be raised, lowered or to remain the same.***

Reappraisal of Final Grade <http://www.ucalgary.ca/pubs/calendar/current/i-3.html>

In the reappraisal of a final grade, the only element that will be considered is the grading of the final assessment that makes up the final mark (e.g., final examination, final project, final paper). An exception may occur when the Instructor of Record evaluates a piece of graded term work at the end of the term; that grade may also be considered in a reappraisal of final grade.

A student wishing a reappraisal of a final grade should first attempt to review the final assessment with the department or faculty offering the course. After which, the student shall obtain a Reappraisal of Final Grade form from ucalgary.ca/registrar (under Student Forms). Students must indicate exactly what

error was made in marking the final assessment and/or in computing the final grade. The reappraisal will only be considered if the student provides a detailed rationale that outlines where and for what reason an error is suspected.

Students wishing a reappraisal of a final grade (excluding Law courses) must submit their request by the following dates:

Fall Term – March 1

Winter Term – June 30

Spring Intersession – August 15

Summer Term – October 15

Supplemental Examinations: 30 calendar days from the date the examination was written

The reappraisal form shall be submitted to Enrolment Services who will forward it to the department head or dean of the faculty offering the course. Reappraisals of final grades are dealt with by the head of the academic unit in consultation with members of academic staff. Normally, the department/faculty will respond to a reappraisal request within thirty calendar days of its initiation. After the reappraisal is completed, the department shall return the form to the Registrar's Office who shall inform the student in writing of the decision. ***Students should be aware that the grade being reappraised may be raised, lowered or remain the same. A student may request a reappraisal of final grade only twice in one academic year (September 1 – August 31).***

Plagiarism and Other Academic Misconduct

Intellectual honesty is the cornerstone of the development and acquisition of knowledge and requires that the contribution of others be acknowledged. Consequently, plagiarism or cheating on any assignment is regarded as an extremely serious academic offense. Plagiarism involves submitting or presenting work in a course as if it were the student's own work done expressly for that particular course when, in fact, it is not. Students should examine sections of the University Calendar that present a Statement of Intellectual honesty and definitions and penalties associated with Plagiarism/Cheating/Other Academic Misconduct.

Academic Accommodations

The student accommodation policy can be found at: ucalgary.ca/access/accommodations/policy.

Students needing an Accommodation because of a Disability or medical condition should communicate this need to Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities ucalgary.ca/policies/files/policies/student-accommodation-policy. Students needing an Accommodation based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to the instructor.

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).**

Freedom of Information and Protection of Privacy (FOIP) Act

The FOIP legislation disallows the practice of having student's retrieve tests and assignments from a public place. Therefore, tests and assignments may be returned to students during class/lab, or during office hours, or will be made available only for viewing during exam review sessions scheduled by the Department. Tests and assignments will be shredded after one year. Instructors should take care to not link students' names with their grades, UCIDs, or other FOIP-sensitive information.

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.

Wellness and Mental Health Resources

The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the excellent mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre, <https://www.ucalgary.ca/wellnesscentre/services/mental-health-services>) and the Campus Mental Health Strategy website (<http://www.ucalgary.ca/mentalhealth/>).

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 **April 12, 2019**.

Evacuation Assembly Point

In case of an emergency evacuation during class, students must gather at the designated assembly point nearest to the classroom. The list of assembly points is found at <http://www.ucalgary.ca/emergencyplan/assemblypoints>. Please check this website and note the nearest assembly point for this course.

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 suvpaca@ucalgary.ca

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

Student Ombudsman's Office

The Office of the Student Ombudsmen provides independent, impartial and confidential support for students who require assistance and advice in addressing issues and concerns related to their academic careers. The office can be reached at 403-220-6420 or ombuds@ucalgary.ca (<http://www.ucalgary.ca/provost/students/ombuds>)

Safewalk

The safewalk program provides volunteers to walk students safely to their destination anywhere on campus. This service is free and available 24 hrs/day, 365 days a year. Call 403-220-5333.

Important Dates

The last day to drop this course with no “W” notation and **still receive a tuition fee refund** is **January 17, 2019**. Last day for registration/change of registration is **January 18, 2019**. The last day to withdraw from this course is **April 12, 2019**.