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PSYC 301	Research Methods and Data Analysis in Psychology II	Summer 2020

Instructor:	Dr. Melissa Boyce	**Lecture Location:**	D2L
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Office Hours:	Email me to set up a 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	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.
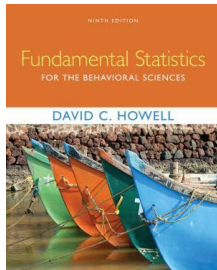
Prerequisites
PSYC 200 – Principles of Psychology I

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.

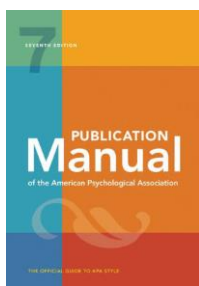PSYC 300 – Research Methods and Data Analysis in Psychology I

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 (60% of final grade).

Exams. There will be two exams during this course; both exams will be multiple-choice and will focus on lecture material. Exam 1 is worth 25% and is 2 hours in length. The final exam is cumulative with an emphasis on material since Exam 1. It is worth 35% of your mark and is 3

hours in length. Both exams are closed book, meaning that you may ONLY refer to documentation posted under the Exam 1 and Final Exam tabs in D2L (which will contain formula sheets and relevant tables) but you may not refer to your notes, other posted lecture material, online resources, the textbook, or to consult with others during the completion of each exam.

Exam dates and topics are as follows:

	Date	Topics	
Exam 1	July 16, 2020 at 2pm	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	Exam 1 will be set up as a D2L Quiz to begin on July 16 at 2pm. You will have a 24 hour window to complete the exam. Once you begin the exam, you will have 2 hours to complete and submit it.
Final Exam	TBD (during final exam period)	All material in the course with an emphasis on material since Exam 2	The final exam will be set up as a D2L Quiz to begin on the scheduled final exam date and time. You will have a 24 hour window to complete the exam. Once you begin the exam, you will have 3 hours to complete and submit it.

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

Lab components (40% of final grade).

Lab Report. An APA-formatted report based on a study to be conducted during lab. The final version, worth 14% of your mark, is due on Friday, August 7 at 11:59pm to the D2L Dropbox. Instructions for completing your report will be posted on D2L and provided in a Final Paper Overview Vodcast to be posted with your first set of lab materials.

Lab Assignments. There will be six lab assignments, which in total will comprise 30% of your grade. Lab assignments will be due on Fridays at 11:59pm to the relevant D2L Dropbox (due dates indicated on course schedule below).

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   <u>6%</u>
                                               Total 30%

Without instructor approval, 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.

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

Calculators and 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
Vodcasts for each week's topics (class and lab) will be posted on the weekend before that week's classes.

Week	Date	Lecture Topic	Relevant Text Material	Lab Topic	Deadlines
1	T Jun 30	Intro to PSYC 301 and One Sample t-tests	Course Outline Ch. 12	Participate in Online Study/Outline of Final Paper and Independent Samples t-tests	
	R July 2	Confidence Limits on the Mean and Comparing Two Group Means: Independent Samples t-tests	Ch. 12 Ch. 14		
	F July 3	*Last day to add/drop or swap summer courses.*			
2	T July 7	Comparing Two Group Means: Wilcoxon Sum Rank Test and Power	Ch. 20 Ch. 15	One Way ANOVA: Analyze Data for Final Paper and Final Paper Q&A	Independent Samples t-test assignment due Friday, July 10 at 11:59pm to the D2L Dropbox
	R July 9	One Way Analysis of Variance (ANOVA) and Multiple Comparisons	Ch. 16		
3	T July 14	Review		Factorial ANOVA	Draft of Intro and Method for Final Paper due Friday, July 17 at 11:59pm to the D2L Dropbox
	R July 16	**Exam 1**			
4	T July 21	Factorial Designs		Paired t-tests	Factorial ANOVA Lab Assignment due Friday, July 24 at 11:59pm to the D2L Dropbox
	R Jul 23	Between Subjects Factorial ANOVA	Ch. 17		
5	T Jul 28	Comparing Paired Data: Paired t-tests and Wilcoxon Signed Rank	Ch. 13 Ch. 20	Repeated Measures ANOVA	Paired t-test Lab Assignment

	R Jul 30	Repeated Measures ANOVA	Ch. 18		due Friday, July 31 at 11:59pm to the D2L Dropbox
6	M Aug 3	*University Closed Heritage Day*			Final Paper and Repeated Measures ANOVA Lab Assignment due Friday, August 7 at 11:59pm to the D2L dropbox
	T Aug 4	Correlation and Regression	Ch. 9 Ch. 10		
	R Aug 6	Multiple Regression and Chi-Square	Ch. 11 Ch. 19		
7	T Aug 11	Final Exam Review			
	W Aug 12	*Last day to withdraw from full session Summer Term courses.*			
	August 14-18	**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 reassign earned credits to courses is **August 12, 2020.**

Absence From A Test/Exam
Makeup tests/exams are **NOT** an option without the approval of the instructor. 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 (psycugrd@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.

Important Dates
The last day to drop this course with no "W" notation and **still receive a tuition fee refund** is **Friday, July 3, 2020**. Last day for registration/change of registration is **Friday, July 3, 2020**. The last day to withdraw from this course is **August 12, 2020**.