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Psychology 300 LEC02	Research Methods and Data Analysis in Psychology I	Fall 2020

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Lecture Location: D2L: Online, asynchronous
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Teaching Assistants: Multiple; See D2L for your TA

Course Description

This course aims to help you to develop the skills required to (a) conduct and analyze scientific research in psychology, (b) communicate your research to others, and (c) evaluate research by other psychologists. These skills are central to success as a psychology major (not to mention as a research psychologist). At a more general level, this course is designed to help you develop methodological, analytical, and communication skills that are invaluable in a wide range of everyday applications and in numerous lines of work.

Note: This course focuses on quantitative approaches. Students interested in qualitative psychological research should consider Psyc 415 - Qualitative Inquiry in Psychology upon completion of this course.

The laboratory component of the course is designed to facilitate experiential learning (learning by doing) of the material.

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)
Contrast research methodologies for strengths and weaknesses.	Multiple choice exams	2, 7	C
Identify ethical issues in research	Multiple choice exams	2, 6 ,8	I

Design research using appropriate methodology to test a research question	Lab assignments	1, 2, 3, 4, 5, 6, 7	C
Apply principles of null hypothesis testing	Multiple choice exams	3, 7	I
Conduct and interpret numerical and graphical methods of summarizing data	Multiple choice exams, lab assignments	2, 3, 4	C
Effectively communicate research findings	Lab assignments	3, 4, 5, 7, 8	C
Write all elements of a laboratory report in APA format	Lab assignments	3, 4, 5	C
Use PSYCINFO to locate primary research relevant to a specific topic	Lab assignments	5	A

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
Class materials will be posted to the course D2L page as per the course schedule below.

Prerequisites
PSYC 200 – Principles of Psychology I AND one of Psychology 201 *or* Neuroscience 201 AND one of: Mathematics 30-1, Mathematics 30-2, 31, *or* Mathematics 2 (offered by Continuing Education). Equivalents will be accepted for students from outside Alberta.

Antirequisites
Credit for Psychology and ANY of the following will NOT be allowed: Engineering 319, Psychology 312, Sociology 311, Statistics 205, 213, 217, 327

Optional Textbooks
Smith, R. A. & Davis, S. F. (2013). The Psychologist as Detective: An introduction to conducting research in Psychology (6th Ed.). Pearson Education Canada. (Available from the bookstore in digital format: $50.99)

It is also 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 for this, and all future psychology courses. There are also 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 ($38.00) from the bookstore.

Assessment Methods

Class components (60% of final grade).

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

All of the unit tests are multiple choice. The first two unit tests are two hours in length (worth 24 % each) and the last unit test is one hour in length (worth 12%). The exam writing time has an additional 50% time padded into your time. Each quiz covers the material in that unit (see class schedule for exact topics in each unit test). They are posted on D2L at 2 p.m. on the exam writing date. Once you start the test, you will have the exam time limit (2 hours for tests 1 and 2, and 1 hour for test 3) to complete the test. But the tests will be available for 24 hours after the start time for you to pick your ideal start time.

> _Exams in this course are closed book. The use of non-approved resources, including class notes, the textbook, online resources, or programable calculators 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. You are_

You ARE allowed to use a non-programable calculator, blank paper, writing utensils, and where given, the class formula pages (the ONLY permissible formula pages will be clean copies (no notes allowed) of the formula sheet posted on our D2L page for the unit tests. These will be especially helpful for the calculation units.

Unit Test	Due DATE	CONTENT
1	Oct 9th	Science of psychology, research ideas and hypotheses, ethics, Nonexperimental design, correlation, role of stats in research, variability and control, choosing the best measure
2	Nov 20th	Plotting data, central tendency, and variability, Normal distributions (the empirical rule), standard normal distribution, and z-scores
3	Dec 9th	Probability theory, hypothesis testing I and II

"Without instructor approval, test extensions will not be granted. Any missed tests will be required to be completed within ONE week of the missed test, and only with the explicit permission of your instructor"

Lab components (40% of final grade).

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

Lab Assignments. There will be six lab assignments, equally weighted, which in total will comprise 40% of your grade. Lab assignments will be submitted in a dropbox folder on D2L. The lab topics are as follows, and further details will be posted on D2L:

Lab Topic	Assignment DUE Date
APA Format & Avoiding Plagiarism	Use in all assignments
Literature Search	Sept 18th (Fri)
Operationally Defined Variables	Oct 2nd (Fri)
Survey Research Question (intro)	Oct 16th (Fri)
Research Ethics	Oct 30th (Fri)
Survey Research (write-up)	Nov 17th (TUES)
Poster	Dec 1st (TUES)

NOTE: There will be components of the labs that you are expected to complete in your own time. It is extremely important that you do this work prior to the allotted deadlines, as future labs will be based on the work that you do outside of the lab. *The lab materials will be posted a week in advance of the lab due date to allow for sufficient completion of the lab.*

Without instructor approval, late lab assignments 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 the Dropbox folder for that lab on D2L.

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 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 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 (with lab due dates and important university dates)

As this is an online course, I've prerecorded my lectures and they will be posted in a set of one unit of material at a time. Each unit has one test associated with that learning unit. In the lecture schedule, I've recommended a study schedule. But as long as you meet the lab and quiz deadlines, you can decide how you would like to pace through the material. I've also noted key dates on the schedule.

Module	Topic (book chapter)	Unit	Recommended Study Week
1	*The Science of Psychology (ch 1)*	*1*	*Sept 9th*
2	*Research Ideas &Hypotheses (ch 2)*	*1*	*Sept 11th*
3	*Ethics (Historical and Modern)*	*1*	*Sept 16 & 18th*
Thursday Sept 17th: Last day to drop a class without a penalty			

Friday Sept 18th: Last day to add or swap a course			
Lab #1 Due (Literature Search) Due Friday Sept 18th			
4	*Non Experimental Methods (Correlation) (ch 3,4)*	*1*	*Sept 23rd*
5	*Role of Statistics in Research (ch 9)*	*1*	*Sept 25th*
Friday Sept 25th: Fee payment deadline for Fall Term full and half courses.			
6	*Choosing the Best Measure (ch 6)*	*1*	*Sept 30th*
Lab # 2 Due on Friday, Oct 2nd (Operational Definition of Variables)			
7	*Variables & Control (ch 5)*	*1*	*Oct 7th*
UNIT 1 TEST: OCT 9th (24 % of course grade)			
Mon Oct 12th: Thanksgiving Day, University closed (except Taylor Family Digital Library, Law, Medical, Gallagher and Business Libraries). No lectures.			
8	Introduction to Normal Distributions	2	Oct 14th
Lab # 3 Due on Friday, Oct 16th (Survey Research Question)			
9	Plotting Data	2	Oct 21st
10	Central tendency	2	Oct 23rd
11	Variability and Standard Deviation	2	Oct 28th
12	The Empirical Rule	2	Oct 30th
Lab # 4 Due on Friday, Oct 30th (Research Ethics)			
13	Z-scores	2	Nov 4th
14	Practice with Z-scores	2	Nov 6th
Nov 8-14: Term Break No Classes Remembrance Day (Observed). University Closed (except Taylor Family Digital Library, Law, Medical, Gallagher and Business Libraries). No lectures.			
Lab #5 Due on Tuesday, Nov 17th : Survey Research Write-up			
UNIT 2 TEST: Nov 20th (24% of course grade)			
15	*Probability Theory*	*3*	*Nov 25th*
16	*Hypothesis Testing I*	*3*	*Nov 27th*
17	*Hypothesis Testing II*	*3*	*Dec 2nd*
Lab # 6 Due on Tuesday, Dec 1st: Poster Presentation			
UNIT 3 TEST: Dec 9th (12% of course grade)			
Wednesday Dec 9th: Last day to withdraw with permission from Fall Term half courses.			

Course Credits for Research Participation

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 **Wednesday, December 9, 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 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 on a day/time scheduled by the instructor.

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

Our mental health is just as important as our physical health, and yet we often will neglect our mental wellbeing, which in turn often influences our physical well being. There are really wonderful and qualified people who can help you out! If you are going through a tough time, there is no need to go it alone. The hardest step to take is often that first phone call, but once you have taken that step, you will be amazed at how well taken care of you will be, and much mental health can improve with help and support. These resources are free to use for University of Calgary students. So if you are in need, please give them a call!

Important Dates

The last day to drop this course with no "W" notation and **still receive a tuition fee refund** is **Thursday, September 17, 2020.** Last day add/swap a course is **Friday, September 18, 2020.** The last day to withdraw from this course is **Wednesday, December 9, 2020**.
https://www.ucalgary.ca/pubs/calendar/current/academic-schedule.html