

PSYC 300	Research Methods and Data Analysis in Psychology I	Spring 2022
-----------------	---	--------------------

Instructor:	Dr. Brendan McAllister	Lecture Location:	SS 010
		Lecture Days/Time:	TR 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 TAs:	Sakib Khan nazmus.khan1@ucalgary.ca Matt Dawson matthew.dawson@ucalgary.ca

Contact the instructor regarding general course issues, questions about lecture material and course content, deferrals and extensions, and grading of exams. Contact your lab instructor (TA) regarding lab material and assignments.

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, and hence the lab assignments are integrated with the lecture schedule.

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

This is an in-person class held on campus.

Prerequisites

One of Mathematics 30-1, 30-2, 31, or Mathematics 2 (offered by Continuing Education); Psychology 200; and Psychology 201 or Neuroscience 201.

Recommended Text

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 University Bookstore in digital format.)

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 (65% of final grade).

Exams. There will be two exams during this course. Both will be multiple-choice and will focus on lecture material. Exams 1 and 2 will be worth 30% and 35% of your mark, respectively (65% total). Exam 2 will be non-cumulative, insofar as it will be limited to material covered after Exam 1. However, many of the concepts in this course are inherently cumulative, in that they assume knowledge and understanding of material introduced earlier.

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:

	Date	Topics
Exam 1	Thursday, May 26	The Science of Psychology, The Role of Statistics in Research, Ethics, Research Ideas and Hypotheses, Variables and Control, and Choosing the Best Measures
Exam 2	TBD (during exam period from June 20 to June 22)	Non-Experimental Methods, Internal Validity, Alternative Research Designs, Plotting Data, Measures of Central Tendency, Measures of Variability, The Normal Distribution, Probability Theory, Hypothesis Testing

Lab components (35% of final grade).

Lab Assignments. There will be five lab assignments, which in total will comprise 35% of your grade. Lab assignments will be due in **hard copy at the beginning of lab** (due dates indicated on the course schedule below). 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: Literature Search	7%
Lab Assignment 2: Ethics	7%
Lab Assignment 3: Observational Research	7%
Lab Assignment 4: Survey Research Write Up	7%
Lab Assignment 5: Poster	7%
Total 35%	

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.

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	Relevant Text Material	Lab Topic	Lab Assignment Due
1	R May 5	First day of classes. Introduction to PSYC 300; The Science of Psychology	Course outline, Ch. 1	No lab	
2	M May 9	Last day to drop classes without penalty and last day to add or swap classes.			
	T May 10	Research Ideas and Hypotheses;	Ch. 2	APA Format and Avoiding Plagiarism	
	R May 12	Research Ethics	Ch. 2	Conducting a Literature Search	
3	T May 17	The Role of Statistics in Research	Ch. 9	Survey Research Part I: Developing a Research Question	Assignment 1: Literature Search
	R May 19	Variables and Control	Ch. 5	Research Ethics	
4	T May 24	Choosing the Best Measures	Ch. 6	Observational Research	Assignment 2: Ethics
	R May 26	Exam 1	All material to date	Survey Research Part II: Survey Development	

5	T May 31	Non-Experimental Methods	Ch. 4	Survey Research III: Data Analysis	Assignment 3: Observational Research
	R June 2	Non-Experimental Methods; Threats to Internal Validity	Ch. 3,4 Ch. 8		
6	T June 7	Alternative Research Designs; Plotting Data	Ch. 13	Putting Together a Poster	Assignment 4: Survey Research Write-Up
	R June 9	Measures of Central Tendency; Measures of Variability	Ch. 9		
7	T June 14	The Normal Distribution; Probability Theory		Poster Session	Assignment 5: Poster
	R June 16	Hypothesis Testing End of Spring Lectures and last day to withdraw from a course.			
	June 20-22	Fall term exam period. Exam 2.	All material since Exam 1		

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 **June 16, 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 Monday, May 9th, 2022**. Last day for registration/change of registration is **Monday, May 9th, 2022**. The last day to withdraw from this course is **Thursday, June 16, 2022**.