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PSYC 300-02	Research Methods and Data Analysis in Psychology I	Fall 2022

Instructor:	Dr. Claire Midgley	**Lecture Location:**	ENG 60
Phone:	TBD	**Lecture Days/Time:**	TR 09:30 - 10:45
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Office:	AD 216	**Lab Location:**	SS018
Office Hours:	W/R 11:00-12:00	**Lab Days/Times:**	Variable, please see department website for lab times

Contact your course 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. 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.

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.

Course Format

This is an in-person class held on campus.

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.

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.

Recommended Text(s)

Smith, R. A. & Davis, S. F. (2016). *The Psychologist as Detective: An introduction to conducting research in Psychology (6th Ed.).* Pearson Education Canada.
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.

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

Assessment Methods

NOTE: It is expected that you will complete all components of the course, and you **must achieve a passing grade on BOTH the class and lab components to pass this course.**

Class components (Exams; 60% of final grade). There will be three in-class exams during this course; all exams will be multiple-choice and will focus on lecture material. 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:

	Date	Topics
Exam 1 (20%)	Tues Oct. 4th	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 (20%)	Tues Nov. 15th	Non-Experimental Methods, Internal Validity, Alternative Research Designs, Plotting Data, Measures of Central Tendency, and Measures of Variability
Exam 3 (20%)	TBD (during final exam period)	All material in the course with an emphasis on material since Exam 2 (i.e., The Normal Distribution, Probability Theory, Hypothesis Testing)

Exams in this course are closed book. The use of resources, including class notes, the textbook, online resources, and 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. 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. **If you miss an exam without contacting the instructor within 48 hours of the exam (see below), you will receive a score of 0 for that exam.**

Absence From an Exam

Makeup exams are **NOT** an option without the approval of the instructor. Students who miss an exam have up to 48 hours to contact the instructor to ask for a makeup exam. It's the instructor's discretion if they will allow a make-up exam. Students who do not schedule a makeup exam with the instructor within this 48-hour period forfeit the right to a makeup exam. At the instructor's discretion, a makeup exam may differ significantly (in form and/or content) from a regularly scheduled exam. Once approved by the instructor, a makeup exam must be written within 2 weeks of the missed exam on a day/time scheduled by the instructor. 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).

Lab components (Assignments; 40% of final grade). There will be six lab assignments, which in total will comprise 30% of your grade. Lab assignments will be submitted via D2L and typically due at 11:59pm on the Friday of the week they are due (except for #5 and #6, see schedule below).

Lab assignment due dates and topics:

	Due Date	Topic
Lab Assignment 1 (5%)	Friday Sep 23, 11:59pm	Conducting a Literature Search
Lab Assignment 2 (10%)	Friday Oct 14, 11:59pm	Writing an Introduction
Lab Assignment 3 (5%)	Friday Oct 21, 11:59pm	Research Ethics
Lab Assignment 4 (5%)	Friday Nov 4, 11:59pm	Observational Research
Lab Assignment 5 (5%)	Must be ready to present in YOUR lab session in Week 13	Poster
Lab Assignment 6 (10%)	WEDNESDAY Dec 7, 11:59pm	Survey Research Write Up

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. **Without instructor approval, late lab assignments will be deducted 10% per day (including weekends) up to a maximum of 50% (5 days), at which point, late assignments will no longer be accepted.**

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 7, 2022.**

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 https://www.ucalgary.ca/legal-services/university-policies-procedures/accommodation-students-disabilities-procedure.

Tentative Lecture Schedule

Week	Date	Lecture Topic	Relevant Text Material	Lab Topic	Lab Assignment Due
1	T Sep 6	Introduction to PSYC 300 *First day of lectures*	Course Outline	**No lab**	---
	R Sep 8	The Science of Psychology	Ch. 1		
2	T Sep 13	Research Ideas and Hypotheses	Ch. 2	Conducting a Literature Search	---
	R Sep 15	Ethics *Last day to drop classes*	Ch. 2		
	F Sep 16	*Last day to add or swap a course*			
3	T Sep 20	The Role of Statistics in Research	Ch. 9	Writing an Introduction	Assignment 1: Conducting a Literature Search **(due FRI Sep 23, 11:59pm)**
	R Sep 22	Variables and Control	Ch. 5		
	F Sep 23	*Fee payment deadline for Fall Term full and half courses.*			
4	T Sep 27	Variables and Control	Ch. 5	**No lab**	---
	R Sep 29	Choosing the Best Measures	Ch. 6		
	F Sep 30	*University Closed National Day for Truth and Reconciliation*			
5	T Oct 4	**Exam 1** All material since the beginning of the course (Sep. 6th - Sep 29th, inclusive)		Research Ethics	---
	R Oct 6	Non-Experimental Methods I	Ch 4		
6	M Oct 10	*Thanksgiving Day, University closed (except Taylor Family Digital Library, Law, Medical, Gallagher and Business Libraries). No lectures.*		**No lab**	Assignment 2: Writing an Introduction **(due FRI Oct 14, 11:59pm)**
	T Oct 11	Non-Experimental Methods II	Ch 4		
	R Oct 13	Non-Experimental Methods III	Ch 3		
7	T Oct 18	Threats to Internal Validity	Ch 8	Survey Development	Assignment 3: Research Ethics

	R Oct 20	Alternative Research Designs	Ch 13		**(due FRI Oct 21, 11:59pm)**
8	T Oct 25	Plotting Data		Observational Research (& Complete Survey)	---
	R Oct 27	Measures of Central Tendency			
9	T Nov 1	Measures of Variability		Data Analysis	Assignment 4: Observational Research **(due FRI Nov 4, 11:59pm)**
	R Nov 3	Review			
10	Nov 6-12	*Term Break No Classes*			
	F Nov 11	*Remembrance Day (Observed). University Closed (except Taylor Family Digital Library, Law, Medical, Gallagher and Business Libraries). No lectures.*			
11	T Nov 15	**Exam 2** All material since Exam 1 (Oct. 6th – Nov. 3rd, inclusive)		Creating a Poster	---
	R Nov 17	The Normal Distribution I			
12	T Nov 22	The Normal Distribution II		APA Format and Avoiding Plagiarism	---
	R Nov 24	Probability Theory			
13	T Nov 29	Hypothesis Testing I		Poster Session	Assignment 5: Poster **(due 11:59pm the night before YOUR lab session this week)**
	R Dec 1	Hypothesis Testing II			
14	T Dec 6	Review		**No lab**	Assignment 6: Survey Research Write Up **(due WED Dec 7th, 11:59pm)**
	W Dec 7	*Fall Term Lectures End. Last day to withdraw with permission from Fall Term half courses.*			
	Dec 10-20	**Exam 3** All material in the course with an emphasis on material since Exam 2 (Nov. 17 – Dec. 1st, inclusive) *Fall Final Exam Period*			

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%

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-).

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

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/legal-services/sites/default/files/teams/1/Policies-Student-Academic-Misconduct-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 (https://www.ucalgary.ca/legal-services/university-policies-procedures/acceptable-use-material-protected-copyright-policy) 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 **Thursday, September 15, 2022.** Last day add/swap a course is **Friday, September 16, 2022**. The last day to withdraw from this course is **Wednesday, December 7, 2022**
https://www.ucalgary.ca/pubs/calendar/current/academic-schedule.html#fall2017