



PSYC 312 Experimental Design and Quantitative Methods in Psychology SS 2015

Instructor:	Dr. K Edwin Sheppard / Dr. Melissa Boyce	Lecture Location:	ES 162
Phone:	403-220-8970 / 403-210-6257	Lecture Days/Time:	M /W/F: 10:30 – 12:20
Email:	kesheppa@ucalgary.ca / mboyce@ucalgary.ca		
Office:	A157A / A258		
Office Hours:	TBA		

Contact your instructor regarding general course issues, questions about lecture material and course content, and grading of exams.

Course Description and Goals

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.

Notes: A final grade of at least an A- is required in this course or in an advanced research methods and statistics course (PSYC 407, PSYC 411, PSYC 417) in order to be admitted to the honours program in psychology.

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 projects are integrated with the lecture schedule.

Prerequisites

Math 30 or 31 or Mathematics II and Psyc 205 – Principles of Psychology

Recommended Text

Howell, D. C. (2011). *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.

Course Notes

Notes for each week's classes will be posted at the beginning of the week. In addition, announcements, grades, and information regarding lab assignments and your research paper will be posted on this site. Web-based modules will be found here as well that you may use as an additional resource in this course.

Evaluation

Class components (60% of final grade).

Exams. There will be six exams during this course, each of which will be worth 10% of your mark and will cover lecture material. Exams will feature multiple-choice questions and are non-cumulative insofar as they will be limited to material covered since the previous test. However, many of the concepts in this course are inherently cumulative in that they assume knowledge and understanding of material introduced earlier.

Exam dates are as follows:

Exam Dates

Exam 1: June 5, 2015

Exam 2: June 26, 2015

Exam 3: July 27, 2015

Exam 4: August 14, 2015

Lab components (40% of final grade).

Report. A typed, double-spaced, scientific report based on a study to be conducted during lab. The final version, worth 20% of your mark, is due at the beginning of **class** on Tuesday, April 6. Instructions for completing your report will be posted on D2L and provided in lab.

Labs. Each student must be registered in a lab section associated with this lecture section. There will be eleven lab assignments, which in total will comprise 20% of your grade. Lab assignments will be due in hard copy at the beginning of lab (due dates indicated on lab schedule). The grades allocated for each assignment are as follows:

Lab Assignment 1: Literature Search	2%
Lab Assignment 2: Observational Research	2%

Lab Assignment 3: Survey Research Parts 1 & 2	2%
Lab Assignment 4: Poster	2%
Lab Assignment 5: <i>t</i> -Tests	2%
Lab Assignment 6: Factorial ANOVA	2%
Lab Assignment 7: Draft of Intro & Methods	2%
Lab Assignment 8: Paired <i>t</i> -Tests	2%
Lab Assignment 9: Repeated Measures ANOVA	2%
Lab Assignment 10: Regression	2%
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Total	20%

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. If you miss an exam without medical documentation, you will receive a score of 0 for that exam. Late 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 & 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 (textbook, notes) are allowed during tests.**

Department of Psychology Grade Distribution Policy

The distribution of grades in Psychology courses (the percentage of A grades, B grades, etc.) will be similar to the distribution of grades in other courses in the Faculty of Arts. The Department monitors the grade distributions of 200-, 300-, and 400-level courses in the Faculty to ensure that the grade distributions in Psychology courses are comparable. Based on these reviews, students can expect that 1) up to 30% of grades in 200- and 300-level psychology courses will be “A” grades (A+, A, and A-), and 2) up to 40% of grades in 400-level psychology courses will be “A” grades.

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. **In this course there will be no rounding up of final grades, especially in light of the opportunities students have to increase their final grade via research participation.**

Tentative Lecture Schedule: Spring Session

Week	Date	Important Dates	Lecture Topic	Text Material	Lab Topic	Lab Assignment Due Date
1	R May 14	Spring Term Lecture begins.			NO LAB	
	F May 16		Introduction to the Course and the Science of Psychology	Ch. 1 and 2		
2	M May 18	Victoria Day, University Closed.			NOTE: No Monday and Thursday labs this week due to the Victoria Day holiday	
	W May	Last day to change	The Role of Statistics in			

	20	registration	Research Ethics		Tuesday and Wednesday: Writing Research Papers in APA format and Conducting a Literature Search	
	F May 22					
3	M May 25		Research ideas and Hypotheses		Monday and Tuesday in lab lab: Observational Research	Due Monday and Tuesday at the beginning of lab: Literature Search Assignment
	W May 27		Measuring and Manipulating Variables		Wednesday and Thursday in lab: Observational Research Work Period	
	F May 29					
4	M June 1		Non-Experimental Methods I		Monday and Tuesday in lab: Survey Part 1: Survey Development	Due Monday and Tuesday at the beginning of lab: Observational Research Assignment
	W June 3		Non-Experimental Methods II and Review		Wednesday and Thursday: No lab due to Exam 1 on Friday	
	F June 5	EXAM 1		All material to date		
5	M June 8		Internal Validity, Alternative Research Designs, and Plotting Data		Monday and Tuesday in lab: Putting Together a Poster	
	W June 10				Wednesday and Thursday in lab: Survey Research Part II: Data Analysis	
	F June 12		Measures of Central Tendency and Measures of Variability	Ch. 4 & 5		
6	M June 15		The Normal Distribution and z-scores	Ch. 6	Monday and Tuesday in lab: Poster Session	Due Monday and Tuesday at the beginning of lab: Poster
	W					

	June 17				Wednesday and Thursday in lab: Participate in an online study and outline of final research paper	Due Wednesday and Thursday at the beginning of lab: Survey Research Assignment
	F June 19		Probability and Hypothesis Testing Part 1	Ch. 7		
7	M June 22		Hypothesis Part II	Ch. 8	No lab (due to term ending this week)	
	W June 24		Review			
	F June 26	EXAM 2 Spring Term Lectures End. Last day to withdraw from full session Spring Term courses.		All Material since Exam 1		

Tentative Lecture Schedule: Summer Session

Week	Date	Important Dates	Lecture Topic	Text Material	Lab Topic	Lab Assignment Due Date
	R July 2	Summer Term Lecture begins.			No lab (due to first week of the Summer term)	
	F July 3		The One-Sample t-test and Confidence Limits on the mean	Ch. 12		
8	M July 6		Experiments with Two Groups: The t-test for	Ch. 14	Monday and Tuesday: No lab	
	W July 8	Last day to add/drop			Wednesday and	

		or swap summer courses.	Independent Groups and the Wilcoxon Rank Sum Test		Thursday in lab: Independent Groups t-tests	
	F July 10					
9	M July 13		Practice with Two Group Between-Subjects Designs and Power		Monday and Tuesday in lab: One-Way ANOVA: Wednesday and Thursday in lab: Analyze Experiment and Q and A about final research paper (can be used as a work period)	Due Monday and Tuesday at the beginning of lab: t-test Assignment
	W July 15		Experiments with More than Two Groups: One-Way ANOVA			
	F July 17		Experiments with More than Two Groups: Multiple Comparisons and Practice with One-Way ANOVA	Ch. 17		
10	M July 20		Factorial Designs		Monday and Tuesday in lab: Factorial ANOVA	Due Monday and Tuesday at the beginning of lab: Draft of Research Paper Intro and Method
	W July 22					
	F July 24		Factorial ANOVA and Review	All material since Exam 2	Wednesday and Thursday in lab: Paired t-tests	
11	M July 27	EXAM 3		Ch. 13	Monday and Tuesday in lab: Repeated Measures ANOVA	Due Monday and Tuesday at the beginning of lab: Factorial ANOVA
	W July 29		Repeated Measures ANOVA			
	F August 31		Within-Subjects Designs: The Paired t-test and the	Ch. 18 and 19	Wednesday and Thursday in lab: Regression	Due Wednesday and Thursday at the beginning of lab: Paired t-test

			Wilcoxon Signed Rank Test			Assignment
12	M August 3	University Closed Heritage Day			Monday and Tuesday: No lab due to Heritage Day Wednesday and Thursday in lab: Critiquing Research	Due Wednesday and Thursday at the beginning of lab: Repeated Measures and ANOVA and Regression Assignments
	W August 5		Practice with Two Groups Within-Subjects Designs and Chi-Square	Ch. 9 and 10		
	F August 7	RESEARCH PAPER DUE AT THE BEGINNING OF CLASS				
13	M August 10		Correlation and Regression		No lab (due to summer term ending)	
	W August 12		Multiple Regression and Review			
	F August 14	EXAM 4 Summer Term Lectures End. Last day to withdraw from full session Summer Term courses.		All material since Exam 3		

Reappraisal of Grades

A student who feels that a piece of graded term work (e.g., term paper, essay, test) has been unfairly graded, may have the work re-graded as follows. The student shall discuss the work with the instructor within 15 days of being notified about the mark or of the item's return to the class; no reappraisal of

term work is permitted after the 15 days. If not satisfied, the student shall immediately take the matter to the Head of the department offering the course, who will arrange for a reassessment of the work within the next 15 days. The reappraisal of term work may cause the grade to be raised, lowered, or to remain the same. If the student is not satisfied with the decision and wishes to appeal, the student shall address a letter of appeal to the Dean of the faculty offering the course within 15 days of the unfavourable decision. In the letter, the student must clearly and fully state the decision being appealed, the grounds for appeal, and the remedies being sought, along with any special circumstances that warrant an appeal of the reappraisal. The student should include as much written documentation as possible.

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 Accommodation

It is the student's responsibility to request academic accommodations. If you are a student with a documented disability who may require academic accommodation and have not registered with the Disability Resource Centre, please contact their office at 403-220-8237. Students who have not registered with the Disability Resource Centre are not eligible for formal academic accommodation. You are also required to discuss your needs with your instructor no later than 14 days after the start of this course.

Absence From A Test/Exam

Makeup tests/exams are NOT an option without an official University medical excuse (see the University Calendar). A completed Physician/Counselor Statement will be required to confirm absence from a test/exam for health reasons; the student will be required to pay any cost associated with this Statement. Students who miss a test/exam have 48 hours to contact the instructor and to schedule a makeup test/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. Except in extenuating circumstances (documented by an official University medical excuse), a makeup test/exam must be written within 2 weeks of the missed test/exam.

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 except under exceptional circumstances. Students are advised to wait until the final examination schedule is posted before making any travel arrangements.

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 via the Department Office (Admin 275), 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.

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 (2) 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 14th, 2015.**

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 170 and may be contacted at 403-220-5567.

Student Union VP Academic: Phone: 403-220-3911 suypaca@ucalgary.ca

Student Union Faculty Rep.: Phone: 403-220-3913 socialscirep@su.ucalgary.ca

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** and the last day for registration/change of registration is **May 20, 2015**. The last day to withdraw from this course is **August 14th, 2015**.