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<b>PSYC 411</b>	<b>Design and Analysis in Psychological Research</b>	<b>Fall 2016</b>
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<b>Instructor:</b>	Dr. K. Edwin Sheppard	<b>Lecture Location:</b>	SA 147
<b>Phone:</b>	403-220-8970	<b>Lecture Days/Time:</b>	M/W/F: 8:00-8:50am
<b>Email:</b>	<a href="mailto:kesheppa@ucalgary.ca">kesheppa@ucalgary.ca</a>	<b>[Lab and/or TA info in remaining cells (delete if N/A)]</b>	SS 018
			M: 11:00-12:50
			M: 13:00-14:50
<b>Office:</b>	AD 155B		
<b>Office Hours:</b>	M/W: 10:00 – 11:00		

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**Course Description and Goals**

Experimental design problems and techniques for analysis of psychological data.

**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](http://psyc.ucalgary.ca/undergraduate/program-learning-outcomes)), and the expected level of achievement.

Course Learning Outcomes	PLO(s)	Level(s)
Critically evaluate statistical analyses and understand the advantages and limitations associated with each	2, 3, 7	A
Accurately identify which analyses should be used to answer a research question(s)	3	A
Draw appropriate inferences from obtained findings	2, 3	A
Apply statistical analyses using SPSS to analyze data	3	A
Communicate research findings effectively through written reports in APA format	4, 5	A
Locate, interpret, evaluate, and communicate psychological information and findings	2, 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, 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

PSYC 201 – Principles of Psychology II

PSYC 312 – Experimental Design and Quantitative Methods for Psychology

**Required Text**

No required text. Supplementary readings will be made available by the professor for when applicable.

## Evaluation

Course Component	Weighting	Date
Midterm Exam #1	25%	October 12, 2016
Midterm Exam #2	25%	November 9, 2016
Final Exam	30%	To be scheduled by registrar
Laboratory	20%	Seven assignments will be due throughout the term. See the lab schedule below for descriptions.

### Exams (80% of final grade):

Exams will consist of both short answer and computation questions, with the considerable emphasis on short answer questions. The first midterm (**Oct 12**) will cover the material up to and including the end of researcher generated regression. The second midterm (**Nov 9**) will cover polynomial regression, ANOVA, and planned comparisons. The final exam (to be scheduled by the registrar) **will be cumulative**.

The use of calculators is permitted for computational questions on the exams. However, you will be graded on your work. Accordingly, **if you fail to show your work, you will receive a 0 for the question (i.e., for the computation component of the question) even if the final answer is correct.**

**The use of computers or any other technology is NOT permitted for exams in this course. Exam answers must be written in the exam booklets provided during the exam.**

**No study aids will be permitted during exams for this course, apart from those that may be provided by the instructor during the exam.**

### Laboratory (20%):

Lab assignments must be handed in at the beginning of the lab on which the due date falls (see the lab Schedule below). Under exceptional conditions (e.g., illness), other arrangements may be made at the discretion of the Teaching Assistant. Late lab assignments will not be accepted, except under exceptional circumstances and at the discretion of the Teaching Assistant with the approval of the instructor. Lab assignments submitted electronically will NOT be accepted.

Assignment	Value
Lab 1: Survey Completion / Data Entry	2%
Lab 2: Linear Regression	3%
Lab 3: Multiple Regression	3%
Lab 4: Hierarchical Regression	3%
Lab 5: ANOVA	3%
Lab 6: Mixed Model Regression	3%
Lab 7: MANOVA / DFA	3%

**NOTE: 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 will be deducted 10% per day (including weekends), up to a maximum of 70% (7 days), at which point, late assignments will no longer be accepted.**

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

### **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 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.

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

Date	Topic/Activity/Readings/Due Date
M Sep 12	Lecture begins.  <b>Introduction to PSYC 411 and the General Linear Model (GLM)</b>
W Sep 14	<b>Foundations of the GLM</b>
F Sep 16	<b>Foundations of the GLM Continued and Linear Regression</b>
M Sep 19	<b>Linear Regression Continued</b>
W Sep 21	<b>Linear Regression Continued</b>
F Sep 23	<b>Linear Regression Continued and Multiple Regression</b>  Last day to drop full courses (Multi-term) and Fall Term half courses. No refunds for full courses (Multi-term) or Fall Term half courses after this date.
M Sep 26	<b>Multiple Regression Continued</b>  Last day to add or swap full courses (Multi-term) and Fall Term half courses. Last day for change of registration from audit to credit or credit to audit.
W Sep 28	<b>Multiple Regression Continued</b>
F Sep 30	<b>Multiple Regression Continued</b>  Fee payment deadline for Fall Term full and half courses.
M Oct 3	<b>Multiple Regression Continued</b>
W Oct 5	<b>Multiple Regression Continued</b>
F Oct 7	<b>Midterm 1 Review</b>
M Oct 10	Thanksgiving Day, University closed (except Taylor Family Digital Library, Law, Medical, Gallagher and Business Libraries). No lectures.
W Oct 12	<b>Midterm 1</b> <b>From Intro to the GLM to Multiple Regression</b>
F Oct 14	<b>Hierarchical Regression / Polynomial Regression</b>
M Oct 17	<b>Hierarchical Regression / Polynomial Regression</b>
W Oct 19	<b>Hierarchical Regression / Polynomial Regression</b>
F Oct 21	<b>ANOVA</b>
M Oct 24	<b>ANOVA</b>

W Oct 26	<b>ANOVA</b>
F Oct 28	<b>ANOVA</b>
M Oct 31	<b>ANOVA</b>
W Nov 2	<b>Planned Comparisons</b>
F Nov 4	<b>Planned Comparisons</b>
M Nov 7	<b>Midterm 2 Review</b>
W Nov 9	<b>Midterm 2 From Hierarchical regression to Planned Comparisons</b>
Nov 10--13	Reading Days. No lectures.
F Nov 11	Remembrance Day (Observed). University Closed (except Taylor Family Digital Library, Law, Medical, Gallagher and Business Libraries). No lectures.
M Nov 14	<b>Mixed Model Regression</b>
W Nov 16	<b>Mixed Model Regression</b>
F Nov 18	<b>Mixed Model Regression</b>
M Nov 21	<b>Mixed Model Regression</b>
W Nov 23	<b>ANCOVA</b>
F Nov 25	<b>ANCOVA</b>
M Nov 28	<b>ANCOVA</b>
W Nov 30	<b>ANCOVA</b>
F Dec 2	<b>MANOVA and DFA</b>
M Dec 5	<b>MANOVA and DFA</b>
W Dec 7	<b>MANOVA and DFA</b>
F Dec 9	<b>Final Exam Review</b>  Fall Term Lectures End. Last day to withdraw with permission from Fall Term half courses.
Dec 12-22	Fall Term Exam Period.

#### TENTATIVE LAB SCHEDULE

Date	Topic	Assignments
M Sep12	<b>NO LAB</b>	
M Sep 19	<b>Lab Introduction and Orientation</b>	<b>Receive assignment 1 – Survey Completion and Data Entry (Due in lab)</b>
M Sep 26	<b>Linear Regression</b>	<b>Receive Assignment 2 – Linear Regression</b>
M Oct 3	<b>Multiple Regression</b>	<b>Receive Assignment 3 – Multiple</b>

	<b>Midterm 1 Review</b>	<b>Regression</b> <i>Assignment 2 Due</i>
M Oct 10	<b>NO LAB - Thanksgiving</b>	
M Oct 17	<b>Hierarchical Regression</b>	<b>Receive Assignment 4 – Hierarchical Regression</b> <i>Assignment 3 Due</i>
M Oct 24	<b>ANOVA</b>	<b>Receive Assignment 5 – ANOVA</b> <i>Assignment 4 Due</i>
M Oct 31	<b>Midterm 2 Review</b>	<i>Assignment 5 Due</i>
M Nov 7	<b>NO LAB</b>	
M Nov 14	<b>NO LAB</b>	
M Nov 21	<b>Mixed Model Regression</b>	<b>Receive Assignment 6 - MMR</b>
M Nov 28	<b>MANOVA and DFA</b>	<b>Receive Assignment 7 – MANOVA</b> <i>Assignment 6 Due</i>
M Dec 5	<b>Final Exam Review</b>	<b>Assignment 7 Due - MANOVA</b>

### **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**

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/](http://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\\_0.pdf](http://www.ucalgary.ca/policies/files/policies/student-accommodation-policy_0.pdf) .

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 up to 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 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 [http://www.ucalgary.ca/registrar/exams/deferred\\_final](http://www.ucalgary.ca/registrar/exams/deferred_final). Under no circumstances will this be accommodated by the department.

### **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 [http://www.ucalgary.ca/registrar/exams/deferred\\_final](http://www.ucalgary.ca/registrar/exams/deferred_final). Under no circumstances will this be accommodated by the department.

### **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 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:**

**[For 3-5XX Fall HALF-courses:]**

#### **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 **Dec 9, 2016**.

### **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 130 and may be contacted at 403-220-5567.

**Student Union VP Academic:** Phone: 403-220-3911 [suvpaca@ucalgary.ca](mailto:suvpaca@ucalgary.ca)

**Student Union Faculty Rep.:** [arts1@su.ucalgary.ca](mailto:arts1@su.ucalgary.ca)

### **Student Ombudsman's Office**

The Office of the Student Ombudsmen provides independent, impartial and confidential support for students who require assistance and advice in addressing issues and concerns related to their academic careers. The office can be reached at 403-220-6420 or [ombuds@ucalgary.ca](mailto:ombuds@ucalgary.ca) (<http://www.ucalgary.ca/provost/students/ombuds>)

### **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** is **September 23, 2016**. Last day for registration/change of registration is **September 26, 2016**. The last day to withdraw from this course is **December 9, 2016**.