UNIVERSITY OF CALGARY

Department of Psychology

Design and Analysis in Experimental Research

Psychology 411 (L02) Winter 2007

Instructor:	Brian C. Holtz	**Lecture Location:**	A 0167
Phone:	220-8482	**Lecture Days/Time:**	MWF 9:00-9:50
Email:	bholtz@ucalgary.ca		
Office:			
Office Hours:	By appointment		

Textbook: None.

Readings: Supplemental readings will be placed on course reserve in the library.

Lab: Attendance is **mandatory**. You must pass the laboratory component of this course to pass the course. A separate handout on the laboratory component will be given out during the first lab.

Course Objectives:

This course will provide an overview of research design issues in psychology. Further the course is designed to present the theoretical and mathematical foundations of the General Linear Model (GLM) and explore how statistical procedures commonly used in psychological research are subsets of the model. Procedures to be considered include: (a) Regression; (b) ANOVA; (c) Analysis of Covariance (ANCOVA); (d) Multivariate Analysis of Variance (MANOVA); and (e) Discriminant Function Analysis.

Learning Goals:

Upon completion of this course, students should:

- Understand the role of theory and design in psychological research
- Have a firm conceptual and mathematical grasp of the General Linear Model (GLM).
- Understand how specific analytical techniques are derived from the GLM.
- Be able to run a variety of univariate and multivariate analyses using the SPSS statistical package.
- Be able to critically read and review empirical papers published in scholarly journals with respect to analytic procedures.
- Know how to analyze and interpret statistical interactions.
- Understand the basics of multivariate analysis.

Distribution of Credit:

Component	Weight
Exams	55%
Presentation	15%
Laboratory	30%

Grading scale:

Please note the grading scale for the course is not the standard scale used in other psychology courses. The following grading scale will be used to determine final course grades. However, it should be noted that grades might be "curved up" if the class performance is abnormally low. Grades will not be curved down under any circumstances.

A+	>97%	B+	87-89.9%	C+	77-79.9%	D+	67-69.9%
A	93-96.9%	B	83-86.9%	C	73-76.9%	D	63-66.9%
A-	90-92.9%	B-	80-82.9%	C-	70-72.9%	D-	60-62.9%
						F	0-59.9

Exams:

Exams will consist of multiple choice, short-answer, and computational-type questions. There will be four exams during the course of the semester. Exam 1, 2, and 3 are each worth 15 points. Exam 4 is worth 10 points. Your total exam points will account for 55% of your overall course grade.

Article Presentations:

You will find an empirical article of interest to you. The article must be from a quality peer-reviewed scientific journal. You are required to give an 8-10 minute presentation of the article, preferably in PowerPoint format. The presentation should include the following components: an overview of the topic, hypotheses, research design, statistical analyses, results, and implications. The article must include one of the statistical procedures discussed in this class. The *final version* of your presentation slides must be sent to me by 5:00 PM the evening before your presentation.

University of Calgary Curriculum Objectives

Based upon the structure and content of this course, the following **Core Competencies** are addressed:

1. Analysis of problems
2. Critical and creative thinking
3. Logical calculation, mathematical ability
4. Abstract reasoning and its applications
5. Interpretive and assessment skills
6. Effective oral communication

The following **Curriculum Redesign Features** are addressed in this course:

1. An experiential learning component relevant to the program objectives

Important Issues:

Reappraisal of Grades

A student who feels that a piece of graded term work (term paper, essay, test, etc.) has been unfairly graded, may have the work re-graded as follows. The student shall discuss the work with the instructor within fifteen days of being notified about the mark or of the item's return to the class. 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 fifteen 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 fifteen days of the unfavorable 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 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 fourteen (14) days after the start of this course.

Absence from a Test

Make-up exams are NOT an option without an official University medical excuse (see the University Calendar).You must contact the instructor before the scheduled examination or you will have forfeited any right to make up the exam. At the instructor's discretion, a make-up exam may differ significantly (in form and/or content) from a regularly scheduled exam. Except in extenuating circumstances (documented by an official University medical excuse), a makeup exam is written within two (2) weeks of the missed exam.

A completed Physician/Counselor Statement will be required to confirm absence from a test for health reasons. The student will be required to pay any cost associated with the Physician Counselor Statement.

Course Credits for Research Participation

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 an individual's final grade. Students can create an account and access the Research Participation System website at http://ucalgary.sona-systems.com. The last day to participate in research is April 12, 2007.

Student Organizations

Psychology students may wish to join the Psychology Undergraduate Students' Association (PSYCHS). They are located in the Administration building, room 170 or may be contacted at 220-5567.

Student Union VP Academic: Phone: 220-3911 suvpaca@ucalgary.ca
Student Union Faculty Rep.: Phone: 220-3913 socialscirep@su.ucalgary.ca

Important Dates

The last day to drop this course and **still receive a fee refund** is January 19, 2007. The last day to withdraw from this course is April 13, 2007.

Schedule

Date	Topic
Jan. 8	Introduction
Jan. 10	Goals of Scientific Research
Jan. 12	Research Design Issues
Jan. 15	Research Design Issues
Jan. 17	General Linear Model
Jan. 19	Correlation and Covariance
Jan. 22	Review
Jan. 24	**Exam 1**
Jan. 26	
Jan 29	Simple Regression
Jan 31	Continued
Feb. 2	Multiple Regression
Feb. 5	Continued
Feb. 7	Mediated Regression
Feb. 9	Moderated Regression
Feb. 12	Continued
Feb. 14	Review
Feb. 16	**Exam 2**
Feb. 18-25	**No classes – Reading Week**
Feb. 26	ANOVA
Feb. 28	Continued
March 2	RM ANOVA
March 5	Continued
March 7	Factorial ANOVA
March 9	Continued
March 12	Review
March 14	**Exam 3**
March 16	ANCOVA
March 19	ANCOVA

March 21	MANOVA
March 23	MANOVA
March 26	DFA
March 28	DFA
March 30	Review
April 2	**Exam 4**
April 4	Presentations
April 6	**No classes – Good Friday**
April 9	Presentations
April 11	Presentations
April 13	Presentations **Last day of lectures for Winter Session**

Note: The above schedule may be modified from time to time as circumstances warrant. Students will be advised of any changes that are made.