UNIVERSITY OF
CALGARY

Department of Psychology

Design and Analysis in Experimental Research
Psychology 411 (L20) Spring 2006

Instructor:	Rebecca L. Malhi	**Office:**	Admin. 231
Phone:	220-8229	**Office hours:**	TBA
E-mail:	rmalhi@ucalgary.ca		
Lecture Day/Time:	TR 14:00-16:45	**Location:**	SH274
Lab 20 Day/Time:	TR 9:00-10:50	**Location:**	SS018
Lab 21 Day/Time:	TR 11:00-12:50	**Location:**	SS018

Textbook: None.
Readings: Will be posted on BlackBoard.
Lab: Attendance is **mandatory**. You must complete the laboratory component to pass the course. A separate handout on the laboratory component will be given out during the first lab.

Course Objectives:

This 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. Subsets of the GLM to be considered are: (a) Linear and multiple regression, including direct and hierarchical procedures; (b) Mixed models involving both categorical and continuous independent variables; (c) Multivariate Analysis of Variance (MANOVA); (d) Discriminant Function Analysis; (e) Analysis of Covariance (ANCOVA), and (f) Planned Comparisons

Learning Goals:

Upon completion of this course, students should:
- 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 planned comparisons and Analysis of Covariance (ANCOVA).
- Understand the basics of multivariate analysis including the concepts of eigenvalues and eigenvectors.

Distribution of Credit:

Midterm exam	30 %	June 5, 2006
Final exam	40 %	To be scheduled by registrar
Laboratory	30 %	See lab outline
Total	**100 %**	

Grades:
The following grading scale will be used to determine final course grades. However, 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. Grades might be "curved up" if the class performance is abnormally low. **Grades will not be curved down under any circumstances.** Also, note that students have the opportunity to increase their final grade via bonus course credits for participation in research (see section later in the outline).

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%

Exams:
Exams will consist of both short-answer and computational-type questions. The final exam will be CUMULATIVE.

Tentative Topic Outline and Readings

DATE	Readings (TBA)
May 15	**Introduction and overview. Review of GLM basics.**
May 17	**Introduction to regression analysis**
May 22	**No class – Victoria Day**
May 24	**Regression analysis cont'd**
May 29	**ANOVA**
May 31	**ANOVA cont'd / REVIEW**
Jun. 5	***MID-TERM EXAM***
Jun. 7	**Planned comparisons**
Jun. 12	**Mixed model regression**
Jun. 14	**ANCOVA**

Jun. 19	**MANOVA (Multivariate Analysis of Variance)**
Jun. 21	**MANOVA cont'd**
Jun. 26	**Discriminant Function Analysis / REVIEW**

N.B. The above schedule and procedures in this course are subject to change in the event of extenuating circumstances.

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

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

1. An experiential learning component relevant to the program objectives

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 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 a student's responsibility to request academic accommodation. If you are a student with a disability who may require academic accommodation and **have not** registered with the Disability Resource Centre, please contact their office at 220-8237. If you are seeking academic accommodation, please notify your instructor no later than fourteen (14) days after the commencement of the course. Note that the lecturer must approve any tape recordings of lectures.

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.

Bonus 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. Information about current experiments is on the Experimetrix website at http://experimetrix.com/uc. The read.me link at that site provides a guide to using the system and assigning your credits. The last day to participate in research and ALLOCATE YOUR CREDITS TO YOUR COURSES is June 26, 2006.

Important Dates
The last day to drop this course and **still receive a fee refund** is May 17, 2006. The last day to withdraw from this course is June 27.2006.