Syllabus
Psychology C08: Experimental Design in Psychology
Spring 2000

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Classes are Tuesdays 1-2 and Thursdays 1-3 in S309.

Tutorials are Tuesdays at 11 am and begin on January 11, 2000.

General Course Overview

This course is basically a continuation of Data Analyses in Psychology (PsyB07). We will discuss somewhat more complicated experimental designs and outline the appropriate statistical analysis for that design.

The basic format of the course will be the following. I will present the material in class, staying fairly close to the text book. When I present it I will try to use as many analogies and examples as possible to bring the material across in an understandable way. Hopefully you will also feel comfortable asking questions as I believe that interactive classes produce the best learning.

There will be weekly tutorials with a quiz presented for the first part of each tutorial. The quiz will be on the topic covered during class on the week prior to the quiz.

I am happy to provide copies of my lecture overheads to you in advance. These overheads are available in two forms.

1) They can be purchased as a booklet (details of this will be provided in the first class).
2) They can be printed/downloaded from a website devoted to the course located at http://psych.utoronto.ca/~joordens/courses/PsyC08

Textbook

The Textbook we will be using for the course is the fourth edition of Statistical Methods for Psychology authored by David C. Howell. We will be covering Chapters 11 through 14 (approximately). Previous editions of the text can also be used although I leave it to the student to identify and compensate for any changes that have occurred across editions.

Evaluation

Your mark in this course will be determined on the basis of a final exam (60%), a midterm exam (40%).

The Midterm Exam is on Saturday February 26th, 1-3 in H214 & H215. This date will (barely) give us time to have the midterm marks back to you prior to the drop date (March 3rd), thereby allowing you to make an informed decision.

The Final Exam will be sometime during the final exam period and will likely be in the gymnasium. More information will be provided when it is available.

The exams are not cumulative. Rather, the midterm will focus on Chapters 11 & 12, and the final on chapters 13 & 14. That said, there is a fair degree of conceptual overlap throughout the course so many of the core concepts carry over.

With respect to the content of the exams, I basically try to measure (and teach) two aspects of your statistical knowledge. Approximately 65-85% of the exams will consist of "applied" questions wherein you show me you know which test is appropriate in a given situation, how to employ the test, and how to interpret the results with respect to the initial research question. The remaining questions are more "conceptual" and attempt to measure your knowledge of why we do certain tests the way we do, and why certain assumptions are necessary. I will discuss this more prior to each exam.

Calculator

You should purchase a scientific calculator for use in this course. Make sure that, at the very least, the calculator has a button for calculating square roots. Note that "programmable calculators" are not allowed! As a general rule, if the calculate has an output display that is greater than one line, it is likely too fancy to be considered applicable for the course. Note however that statistics calculates are OK and, in fact, I would encourage you to learn how to use them.

The "Fairness" Clause

I strongly believe that every student in the class should be evaluated in an identical manner. In order to insure this I must lay down certain ground rules that attempt to prevent any student from gaining any form of special treatment.

I. I **do not** give out any marks other than rounding up to the nearest integer. If you end up being one mark away from the next highest letter grade, then that is where you'll stay. In my opinion, the focus in on you achieving the highest mark attainable, not on me giving it to you.

II. Midterms and Final Exams can only be missed for extreme reasons and formal documentation explaining your absence is required and will be checked up on.

III. My office hours are meant to assist students who are having difficulties with the course despite regular class attendance. I **will not** spend office hours re-teaching a class to a student who chose not to attend that class.

Assumed Knowledge

Some of you may have taken your introductory statistics course a while back, and may be worried about how best to be prepared. To you, and to the others, I offer the following advice.

First of all, the course is fairly self-contained. That is, I will not be assuming very much with respect to the knowledge you have coming in. Rather, I will tend to be fairly explicit about re-teaching certain bits that I think are critical.

That said, I clearly must make some assumptions about the students incoming knowledge. The following are the concepts I expect you to know and be comfortable with coming into this course. If they are just a vague memory, I suggest that you brush up on them by reading the sections in the Howell text as indicated below:

1) A good understanding of what means and variances are, and how they are computed (Chapter 2, sections 2.8 and 2.9 with emphasis on mean and variance)
2) Knowledge of the normal distribution and what it represents (all of Chapter 3)
3) The logic of hypothesis testing (all of Chapter 4)
4) Hypothesis testing as applied to means, especially matched and independent samples t-tests. Here, really think about and understand the central limits theorem (Chapter 7)