PSYB07 – SUMMER 2006
DATA ANALYSIS IN PSYCHOLOGY
SYLLABUS

Course Objectives:

The focus of this course is statistics and data analysis. In addition to dealing with the computational aspects of statistics, this course (including the text and class material) will emphasize a conceptual understanding of the rationale for various statistical techniques. Knowing why you use a statistical procedure is as important as knowing how to compute it.

By the end of this course, you should have the skills to read the Results section of research articles and, in many cases, be familiar with the statistical procedures used there, or at least be able to interpret the outcome, even if the procedure is one that we have not covered.

I can appreciate that students will vary in their competency levels on these abilities. You can expect to acquire these abilities only if you honour all course policies, attend class regularly, complete all assigned work in good faith and on time, and meet all other course expectations of you as a student.

Where:	SW 143
When:	Tuesdays 5-8 pm
Instructor:	Marty Niewiadomski
Office:	SW 563
Email:	martin@psych.utoronto.ca
Web Site:	http://www.psych.utoronto.ca/~martin/PsyB07
Office Hours:	Thursdays, 1:30-3 pm

Teaching Assistants: **Office Hours**

   Sonia Shukla

   Jason Ozubko

   Blair Armstrong

Text: Howell, D.C. (2002). Statistical methods for psychology. Fifth Edition. Pacific Grove, CA: Duxbury (www.duxbury.com).

Chapters listed below are required reading. Allow yourself adequate time to absorb the material by adhering to the reading schedule provided. Please note that this is not a course that the average student can "cram" for in last-minute preparation. So please keep up with the readings. Each major section of each chapter includes exercises designed to test your knowledge of the key concepts, principles, and procedures described within that section. You should complete these exercises as you read the chapters and review them in preparation for the tests and exam. Answers for odd-numbered exercises are provided in the text for you to check your work. Complete as many exercises as are needed for you to feel confident in your knowledge of the material. Because the exercises are highly repetitive, this will require working through the computations for only a fraction of the exercises. Oftentimes, simply reading through an exercise and recognizing its similarity to previous exercises that you successfully completed is enough to go on. The ability to complete the exercises with confidence indicates that you are sufficiently prepared for the test/exam.

Calculator: You will need a reliable calculator for this course (available at the UTSC Bookstore and most other stores)

Evaluation:

Term Test I	—	35%
Quizzes	—	10%
Final Exam	—	55%

- The midterm will include multiple choice, short answer, and problem-solving questions.
- There will be 5 or 6 **unannounced** quizzes, depending on how much time we have. Your best 4 will count, each worth 2.5%. These quizzes will be written in class and you will have about 15 minutes to complete the quiz. There will be no make-ups for missed quizzes.
- The **comprehensive** final exam will cover the entire course

Web Notes

A somewhat modified version of lecture slides will be available on the web. Go to **http://www.psych.utoronto.ca/~martin/PsyB07** to download them. You may find it helpful to print the slides out in a handout format with 3 slides per page prior to each class and use them for note taking. NB – The slides are not complete. They will not serve as a substitute for attending class. If you choose to rely solely on them, do so at your own risk.

Note for Math-Phobics:

If any of you are worried about the mathematical aspects of the course let me mention a couple of things. First, the math is actually very basic, relying on little more than basic arithmetic and some basic work with fractions. If this still does not comfort you, I strongly recommend you visit http://cne.gmu.edu/modules/dau/math/index.html. Do so as soon as possible as the sooner you get your math fears behind you the better. This is not tough math stuff. Once you feel comfortable that you can do the necessary math, then you can concentrate on the real meat of the course, the concepts related to the presentation and analysis of experimental data. The refresher I recommend is provided by the Defense Acquisition University. I'm afraid the examples are all rather militaristic as it is meant for a military user. However, it assumes very little knowledge and is the best tutorial I could find - try it, I think you'll like it. It's set up like a subway map. The "entire subway" contains more information than you need for this course. All you need worry about is the "yellow line." If you travel the yellow line from beginning to end and it all feels good to you, then you are in good shape, mathematically, for this course.

About the prof

In case you're curious, I'm currently working on my PhD in Psychology under the supervision of Dr. Steve Joordens. My current interests focus mainly on human memory, particularly on recognition memory. My research has dealt primarily with the role of decision making in recognition memory, as well as with the function of familiarity. The questions that underlie most of my work tend to orbit around the dissection of familiarity-based decisions from the so-called criterion changes, where familiarity remains unchanged, yet the perception of memory fluctuates.

Course Outline

Topics	Reading Assignments in Howell
Basic Concepts and Review	Chap. 1
Descriptive Statistics: Graphing, Central Tendency, Measures of Variability	Chap. 2 (delete 2.3, 2.4, 2.6, 2.10, 2.11, 2.12, and all references to Minitab)
Standard Scores (z), the Normal Distribution, & Probability	Chap. 3 Chap. 5, p. 115-122 only
Inferential Statistics: Sampling Distributions Hypothesis Testing	Chap. 4 and Chap. 7 (7.1 and 7.2 only)
t-tests (t) -single sample t-tests -correlated samples t-tests -independent sample t-tests	Chap. 7 (7.3 – 7.7)
Power	Chap. 8
Correlation (r) and regression	Chap. 9 (p. 244-268, 273-274, 282-285)
Chi Square ($\chi 2$)	Chap. 6 (p. 142-162)
Analysis of Variance (F) -logic of ANOVA -1-way between-Ss ANOVA	Chap. 11 (p. 320-326) Chap. 11 (p.326-333, 11.8, 11.11)

The above schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances.