YORK UNIVERSITY
FACULTY OF HEALTH
DEPARTMENT OF PSYCHOLOGY
PSYC 2021.06 B – DATA ANALYSIS I
FALL 2013
FRIDAY 2:30 – 5:30 AM in CURTIS LECTURE HALL A
Pre- or Co-requisite PSYC 1010 6.0
with a minimum grade of C in PSYC 1010 if used as a prerequisite

| INSTRUCTOR: | Dr. Margarete Wolfram | TA: | Daniel Lahham |
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| PHONE: | 736-2100 Ext. 33336 | | Saoud Wafa |
| OFFICE: | BSB 274 | | |
| OFFICE HOUR: | Mo 5:00 – 6:00 and Fr 12:30– 1:30 | | |
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## TEXTBOOK:

Required:      Wolfram, M. and Cheng, L. Statistical Concepts and Procedures: The Essentials
               York University, Toronto, 2013. (available in class for $50.-)

## EVALUATION PROCEDURE:

Grades will be based on the outcome of two tests, worth 50% each.  All tests consist of 50%
multiple-choice questions and 50% problem questions. The midterm exam will take place on
October 18; the date for the final exam will be scheduled by the Registrar's Office during the final
exam period, December 10 - 23. To help students monitor their progress, there will be weekly
assignments. Detailed feedback on these assignments will be provided on a weekly basis.
Assignments are strictly for practice and do not count towards the course grade.

## PROCEDURES FOR MISSED MIDTERM EXAM:

Students who fail to write the exam at the scheduled time need to contact the instructor by e-mail
within 48 hours. If they can document a valid reason for their absence they will be allowed to write
a make-up exam at a time specified by the instructor. The date of the make-up will be the same for
all students who missed the test. There will be no individual accommodation. For information on
documentation consult the Department of Psychology website

## GOAL OF THE COURSE:

The goal of this course is statistical literacy and competence in choosing and carrying out statistical
analyses appropriate to different research questions. Students will gain a better understanding of the
experimental findings to which they are exposed in other courses, and they will be able to interpret
and critically evaluate research findings reported in the media. The course will also provide
preparation for students who will continue with PSYC 2022, 3030, 4000 or 4170. It is advantageous
for students to take this course as early as possible in their course of study.

## PARTICULARITY OF A STATISTICS COURSE:

Statistics is an important course. Succeeding in it will open doors for you in your course of study, while failing to succeed will keep these doors shut. Understanding statistics will greatly help you to understand other subject matters, which is the reason why statistics is a mandatory course for psychology majors. Mastering Psych 2021 does not require a special aptitude for mathematics; what it **does require** is a fair amount of **regular work**. According to a questionnaire, successful students spend an average of five hours per week studying statistics in addition to class time. There is, however, a large range in the time required by different students.

Statistics differs from many other courses in that one thing builds on another. Students have to retain it all. The only way this can be achieved is by mastering each part to the point where it becomes automatic. Using statistics then becomes similar to speaking a language fluently without having to explicitly recall each rule. **Lack of investing enough regular time and attention is the one prime reason for failure in this course.**

Some students spend a lot of time wondering whether or not they will succeed. Henry Ford had the answer to their question when he said: "Whether you think you can or think you can't, - either way you are right." People tend to live up (or down) to their own expectation. However, positive expectations need to be combined with concrete strategies to move beyond wishful thinking.

## STRATEGIES TO SUCCEED IN THIS COURSE:

Maximum efficiency can be achieved by:
(a) good resource management, i.e. keeping oneself in good operating conditions (i.e. staying healthy and functional) and setting aside weekly time periods for regular homework,
(b) using several smaller time periods rather than one big block,
(c) making friends with classmates and working with others (but NOT during exams),
(d) making use of the models provided by the assignments, and
(e) asking for help when encountering difficulties, i.e. essentially staying on top rather than letting things slide and hoping to catch up at some future point in time.
(f) understanding the material AND making its use automatic through practice

## CORRESPONDENCE:

Please be aware that this is not a correspondence course. Attending lectures cannot be substituted by requesting information and explanation from the instructor or the TA via e-mail. Identify yourself clearly (first and last name, course number and section) when you need to communicate by e-mail or phone. State "**2021**" in the subject line of any e-mail. Please read your course outline carefully. It contains all the administrative information students tend to ask about.

## IF YOU FEEL THAT YOU NEED EXTRA HELP:

(1) Consider whether you have made an honest effort to cope on your own. Some students simply assume that they cannot handle the material. Hiring a tutor fulfils their need to depend on somebody other than themselves. (2) Make use of the resources available. The instructor and the TAs have weekly office hours and are ready to help you out. (3) Form a study group. (4) If you really find that the available resources do not suffice, look for peer tutoring with UPSA at York University.

# COURSE SCHEDULE

Sept.   13      Introduction to the course
                  Introduction to statistics (Chapter 1)

Sept.   20      Making sense out of data – graphic representation (Chapter 2)
                  Measures of central tendencies and measures of dispersion (Chapter 3)

Sept.   27      Introduction to standard scores (Chapter 3 cont'd)
                  Standard scores and the normal curve (Chapter 4)

Oct.    4       Pearson correlation and regression (Chapter 5)

Oct.   11      Review Chapters 1 - 5

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Oct.   18      **MIDTERM EXAM (50%)** covering chapters 1 – 5

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Oct.   25      Probability (Chapter 6)
                  Introduction to hypothesis testing (Chapter 7)

**Nov.    1      FALL READING WEEK    aka co-curricular week      NO CLASSES**

Nov.    8       Hypothesis testing: inferences about a single mean (Chapter 8)
                  Elements of research design; the t-test for correlated samples (Chapter 9)

**Nov.    8       Last day to drop course without receiving a grade**

**Nov.  15**      Elements of research design
                  t-test for correlated samples (Chapter 9)
                  t-test for independent samples (Chapter 10)

Nov.   22      t-test for independent samples (Chapter 10 cont'd)
                  review of z- and t-tests
                  The power of statistical tests and the problem of hypothesis testing (Chapter 11)
                  The confounding effect of N in the outcome of hypothesis testing

Nov.   29      The Chi square test, general principle and goodness of fit test
                  Chi square test for homogeneity, i.e. correlation (Chapter 15)

Dec.    6       Review chapters 6 – 11 and 15

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**Final Exam Period    FINAL EXAM (30%) covering chapters 6 – 11 and 15.**
(Dec. 10 – 23)

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