YORK UNIVERSITY
FACULTY OF HEALTH
DEPARTMENT OF PSYCHOLOGY
PSYC 2022.03 A – DATA ANALYSIS II
MONDAY 7:00 – 10:00 PM in CURTIS LECTURE HALL E
Pre- requisite PSYC 2021.03

INSTRUCTOR:	Dr. Margarete Wolfram	TA:	Galina Goren
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OFFICE HOUR:	Mo 5:00 – 6:00 PM		
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TEXTBOOK:
recommended Wolfram, M. and Cheng, L. Statistical Concepts and Procedures: The Essentials
York University, Toronto, 2014 extended edition (available in class for $50.-).

EVALUATION PROCEDURE (official grades and self-assessment):

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 20; the date for the final exam will be scheduled by the Registrar's Office during the final
exam period, December 9 - 22. To help students monitor their progress, there will be weekly
assignments. Detailed collective feedback on these assignments will be provided on a weekly basis,
allowing students to compare their work with the solutions given. Carrying out the assignments is
highly recommended for students to practice their skills. While such practice will greatly increase
the chances of performing well on the exams, assignments do not count towards the course grade.

PROCEDURES FOR MISSED EXAMS:

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 exam. There will be no individual accommodation. For information on
acceptable reasons for missing a test and required documentation consult the Department of
Psychology website regarding guidelines for missed exams. Alternatively the final will count 100%.

GOAL OF THE COURSE:

The goal of this course is statistical literacy, especially in the area of inferential statistics, and
competence in choosing and carrying out statistical analyses appropriate to different research
questions. Students will gain a better understanding of the experimental findings they encounter in
other courses and they will be able to interpret and critically evaluate research findings reported in
the media. The course will also provide solid preparation for PSYC 2030 (research methods), PSYC
3010 (intermediate research methods, PSYC 4000 (thesis course) or 4170 (advanced methodology).

PARTICULARITIES OF A STATISTICS COURSE:

As you may already have discovered taking PSYC 2021, 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. Mastering statistics does not require an unusual degree of aptitude for mathematics, but the course **does require** a fair amount of **regular work**. According to a questionnaire, successful students spend an average of six hours per week studying statistics in addition to class time. There is, however, a large range in the time required by different students. **Lack of investing enough regular time and attention is the one prime reason for failure in this course. The misconception that it is enough to go through the motion of writing exams, appealing to the staff's charity on the basis of what grade is needed and the adversity of one's circumstances is the most frequent reason for repeated failure in this course and failure to continue in the psychology honours program.** Students are encouraged to call on the teaching staff for extra help to achieve the grades they need; yet the grades themselves are strictly based on demonstrated performance.

As Henry Ford 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 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 (EXCEPT during exams),
(d) making use of the models provided,
(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:

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. When you do communicate by e-mail, state **2022** A in the subject line and identify yourself clearly (first and last name).

IF YOU FEEL THAT YOU NEED EXTRA HELP:

(1) For starters, make 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. (3) Form a study group. (4) If you really find that the available resources do not suffice, we recommend registering for peer tutoring with UPSA (Undergraduate Psychology Student Association) at York University. We DO NOT RECOMMEND hiring a tutor.

COURSE SCHEDULE

Sept.	8	Introduction to the course Review of hypothesis testing (Chapters 7 and 8 of W&C)
Sept.	15	Review of t-tests (Chapters 9 and 10 of W&C) one sample, two related samples, and two independent samples; effect sizes
Sept.	22	Analysis of variance for k (>2) independent samples Post hoc comparison of group means; effect sizes (Chapter 12 of W&C)
Sept.	29	Analysis of variance for repeated measures (Chapter 13 of W&C) Comparison of means; effect sizes
Oct.	6	Review of principles of hypothesis testing, t-tests and 1-way ANOVAs Effect of N on the outcome of hypothesis testing (Chapter 11 of W&C)
Oct.	13	THANKSGIVING - no classes

Oct.   20   Midterm exam (50%) covering chapters 7 – 13 of Wolfram and Cheng

Oct.	27	The notion of interaction between variables (Chapter 14 of W&C) Two-way analysis of variance for two independent groups
Nov.	3	Testing hypotheses about distributions of ranks for two groups The sign test, Wilcoxon test for correlated samples; effect sizes Mann-Whitney U for independent samples; effect sizes (Chapter 16 of W&C)

November 7   last day to drop course without receiving a grade

Nov.	10	Testing hypotheses about distributions of ranks for more than two groups Friedman Analysis for k (k>2) related groups; effect size Kruskal-Wallis test for k independent groups; effect size (Ch 16 cont'd)
Nov.	17	Testing hypotheses about correlations; Pearson r and Spearman r (Chapter 17 of W&C)
Nov.	24	Review of chi square and its uses (Chapter 15 of W&C) How to choose a statistical procedure appropriate to a given data set
Dec.	1	How to choose a statistical procedure appropriate to a given data set (cont'd) General Review

Final Exam Period   **Final exam (50%) covering chapters 7 – 17 of Wolfram and Cheng**
December 9 – 22