YORK UNIVERSITY
FACULTY OF HEALTH
DEPARTMENT OF PSYCHOLOGY
PSYC 2022.03 M – DATA ANALYSIS II
FRIDAY 2:30 – 5:30 IN VARY HALL – C
Pre- requisite PSYC 2021 3.0

INSTRUCTOR:	Dr. Margarete Wolfram	TA:	Ryan Barnhart
PHONE:	736-2100 Ext. 33336		
OFFICE:	BSB 274		
OFFICE HOUR:	Tu 5:00 – 6:00 PM		
	Fr 12:30 – 1:30 PM		
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TEXTBOOK:
recommended Wolfram, M. and Cheng, L. Statistical Concepts and Procedures: The Essentials
(fourth edition). York University, Toronto, 2012.

EVALUATION PROCEDURE:

Grades will be based on the outcome of two exams, worth 50% each. All exams consist of 50%
multiple-choice questions and 50% problem questions. The midterm exam will take place on
February 14; the date for the final exam will be scheduled by the Registrar's Office during the final
exam period, April 8 to 24.
To help students monitor their progress, there will be weekly assignments. Detailed feedback on
these assignments will be provided on a weekly basis. Assignments do not need to be handed in,
and they do not count towards the course grade. Their function is similar to that of practice sessions
for an athlete or any other performer. Students who ignore the assignments will find themselves at a
serious disadvantage, just as performers would if they did not practice.

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 have
the final exam count for 100% of their course grade. Students who write the midterm and perform
better on the final will also have their final count for 100%. Exams are cumulative.

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), and
PSYC 4000 (thesis course) or PSYC 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 without having to explicitly recall each rule. Mastering statistics does not require an unusual degree of aptitude for mathematics. What it **does require are discipline, work habits, and the ability to make an effort.** According to a questionnaire, successful students spend an average of five hours per week on a regular basis studying statistics, in addition to class time. Some spend considerably more.**Poor work habits and lack of investing enough regular time and attention is the one prime reason for failure in this course.** Those who come from high schools where anything goes need to take active measures to adjust to a decisive shift in culture. 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 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,
(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. If you do contact us by e-mail, identify yourself clearly (first and last name, course number and section). State **2022** 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 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. If you can't make the office hours, alternative times can often be arranged. (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 rather than hiring a tutor.

COURSE SCHEDULE

Jan.	10	Introduction to the course Review of hypothesis testing
Jan.	17	Review of t-tests: one sample, two related samples, and two independent samples; effect sizes
Jan.	24	Analysis of variance for k (>2) independent samples Post hoc comparison of group means; effect sizes
Jan.	31	Analysis of variance for repeated measures Comparison of means; effect sizes
Feb.	7	Review of principles of hypothesis testing, t-tests and 1-way ANOVAs Effect of N on the outcome of hypothesis testing

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Feb.14   Midterm exam (50%) covering chapters 7 – 13 of Wolfram and Cheng

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Feb.	21	READING WEEK - NO CLASSES
Feb.	28	The notion of interaction between variables Two-way analysis of variance for two independent groups
March	7	Testing hypotheses about distributions of ranks – general procedure. Wilcoxon test for correlated samples; Mann-Whitney U for independent samples; Friedman Analysis for k (k>2) related groups; Kruskal-Wallis test for k independent groups;
March	7	last day to drop course without receiving a grade
March	14	The importance of calculating strength of association and effect sizes
March	21	Testing hypotheses about correlations; Pearson r and Spearman r
March	28	Review of chi square and its uses. How to choose a statistical procedure appropriate to a given data set
April	4	Review

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April 8 – 24   Final exam (50%) covering chapters 7 – 17   of Wolfram and Cheng

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