

YORK UNIVERSITY
FACULTY OF HEALTH
DEPARTMENT OF PSYCHOLOGY
PSYC 2021.03 M – DATA ANALYSIS I
WINTER 2014
TUESDAY, 7:00 – 10:00 PM VARY HALL - B
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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OFFICE HOUR:	Tu 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 exams, worth 50% each. All exams consist of 50% multiple-choice questions and 50% problem questions. The midterm exam will take place on February 11; the date for the final exam will be scheduled by the Registrar's Office during the final exam period, April 8 - 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 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 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 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 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 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 delaying or 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 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. 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. **Poor work habits and lack of investing enough regular time and attention is the one prime reason for failure in this course.** Students who come from high schools where anything goes need to take active measures to adjust to a decisive shift in culture.

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:

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 available resources. The instructor and the TA have weekly office hours and are ready to help you out. (3) Form a study group. (4) Calumet College sponsors a support program that is run twice the week by Nathan Saprikin. (5) If you really find that the available resources do not suffice, look for peer tutoring with UPSA at York University. We **DO NOT RECOMMEND** that you hire a tutor who has no association with this course. Experience has shown that students who have done so have not performed well.

COURSE SCHEDULE

Jan.	7	Introduction to the course Introduction to statistics (Chapter 1)
Jan.	14	Making sense out of data – graphic representation (Chapter 2) Measures of central tendencies and measures of dispersion (Chapter 3)
Jan.	21	Introduction to standard scores (Chapter 3 cont'd) Standard scores and the normal curve (Chapter 4)
Jan.	28	Pearson correlation and regression (Chapter 5)
Feb.	4	Review Chapters 1 - 5
Feb.	11	MIDTERM EXAM (50%) covering chapters 1 – 5
Feb.	18	READING WEEK NO CLASSES
Feb.	25	Probability (Chapter 6) Introduction to hypothesis testing (Chapter 7)
March	4	Hypothesis testing: inferences about a single mean (Chapter 8) Elements of research design; the t-test for correlated samples (Chapter 9)
March	7	Last day to drop course without receiving a grade
March	11	Elements of research design ; t-test for correlated samples (Chapter 9 cont'd) t-test for independent samples (Chapter 10)
March	18	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
March	25	The Chi square test, general principle and goodness of fit test; Chi square test for homogeneity, i.e. correlation (Chapter 15)
April	1	Review chapters 6 – 11 and 15
April 8 - 24		FINAL EXAM (50%) covering chapters 4 – 11 and 15.