YORK UNIVERSITY
FACULTY OF HEALTH
DEPARTMENT OF PSYCHOLOGY
PSYC 2021.03 M –STATISTICAL METHODS I
TUESDAY 7:00 – 10:00 PM
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:	T 4:00 – 6:00 and		
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TEXTBOOK:

Wolfram, M. and Cheng, L. Statistical Concepts and Procedures: The Essentials, 4th ed.
York University, Toronto, 2012. Available in class from rep for $50.- during the break.

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 February 12; the date for the final exam will be scheduled by the Registrar's Office during the final exam period, April 10 - 26.
To help students monitor their progress, there will be weekly assignments. Detailed collective feedback will be provided on a weekly basis. Students are free to hand in their completed assignment to receive individualized feedback; however, assignments are strictly for practice and 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 test. There will be no individual accommodation. For information on acceptable reasons for missing a test and admissible documentation consult the Department of Psychology website regarding guidelines for missed exams.

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 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 students who will continue with PSYC 2022 (statistical methods II), PSYC 3030 (intermediate statistics), and PSYC 4000 (thesis course) or PSYC 4170 (advanced methodology). It is advantageous for students to take this course as early as possible in their course of study.

PARTICULARITIES OF A STATISTICS COURSE:

Statistics is an important course. Succeeding in it will open doors for you, 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 mandatory for psychology majors. Mastering Psych 2021 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 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 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:

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 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, consider registering for peer tutoring with UPSA (Undergraduate Psychology Student Association) at York University.

IS THIS COURSE FOR YOU?

As already mentioned, statistics is important, the course can be mastered by anyone who is prepared to invest the necessary time and effort, and it is best taken as early as possible. However, unless you are in fact ready to invest the necessary time and effort it may be more advisable for you to drop it from your agenda and get your money back before it is too late. This advice is primarily for the benefit of those who don't believe that any of this talk about needing to invest time and effort applies to them. They may assume that they have their own way of doing things.

There has to be a clear understanding that grades in this course are strictly based on performance. They are not based on the number of medical notes or on what the student "needs", or on additional assignments the student may offer in case the grade falls short. I also don't need my car washed, my yard weeded, assistance on my research, or anything else students offer to improve their grades. I don't increase grades out of sheer charity either, since it amounts to cheating the taxpayer who foots the bill for a large part of university education and is poorly served by graduates with inflated grades. While this point is perfectly obvious to the vast majority of our students, we unfortunately get a few every year who seem to have come from schools where grades are handed out in a fraudulent fashion and who consider that paying tuition is enough to get their requests for grades granted. Personal misfortunes may give you sympathy but not grades.

Please do ponder your options and make an informed decision whether you are prepared to match your investment in money with the necessary investment in time and effort. Taking a costly course without investing the necessary work is like buying a Mercedes and then running it without oil. The result is a big loss. If you decide to take this course it would be wise to start with establishing a schedule that will reserve specific time slots for work on statistics and also for other activities which, if neglected, will sooner or later interfere with your studying plans.

COURSE SCHEDULE

Jan.	8	Introduction to the course Introduction to statistics (Chapter 1)
Jan.	15	Making sense out of data – graphic representation (Chapter 2) Measures of central tendencies and measures of dispersion (Chapter 3)
Jan.	22	Introduction to standard scores (Chapter 3 cont'd) Standard scores and the normal curve (Chapter 4)
Jan.	29	Pearson correlation (Chapter 5) Regression and prediction (Chapter 5 cont'd)
Feb.	5	Review Chapters 1 - 5
Feb.	12	**MIDTERM EXAM (50%)** covering chapters 1 – 5
Feb.	**19**	**READING WEEK – NO CLASSES**
Feb.	26	Introduction to probability (Chapter 6) Introduction to hypothesis testing (Chapter 7)
March	5	Hypothesis testing: inferences about a single mean, z and t-test (Chapter 8)
March	12	Elements of research design (Chapter 9) the t-test for correlated samples t-test for independent samples (Chapter 10)
March	**15**	**Last day to drop course without receiving a grade**
March	19	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	26	The Chi square test, general principle and goodness of fit test (Chapter 15) Chi square test for homogeneity, i.e. correlation
April	2	Review
Exam Period **April 10 – 26**		**FINAL EXAM (50%)** covering chapters 6 – 11 and 15)