

YORK UNIVERSITY
FACULTY OF HEALTH
DEPARTMENT OF PSYCHOLOGY
PSYC 2021.03 M – DATA ANALYSIS I
TUESDAY 7:00 – 10:00 PM in CSE - 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:	Ryan Barnhart	Timothy Leonard
PHONE:	736-2100 Ext. 33336			
OFFICE:	BSB 274		BSB 262	BSB 374
OFFICE HOUR:	Tu 4:00 – 5:30		Tu 5:00 – 6:30	
	Thursday 12:00 – 1:30			
e-mail:	wolfram@yorku.ca		rbarnhar@yorku.ca	tsk@yorku.ca

TEXTBOOKS:

Gravetter, F.J. and Walnau L.B. Statistics for the Behavioral Sciences (including Aplia software).
9th ed. Wadsworth, Belmont, CA, 2013

Wolfram, M. and Cheng, L. Understanding Statistical Concepts and Procedures: The Essentials.
3rd ed. York University, Toronto, 2011.

The first of these two books is the department's choice; the second is one which I wrote with my associate and have been using for the last three years. It is available in class for \$50.-

EVALUATION PROCEDURE:

Grades will be based on the outcome of three tests, worth 30%, 35% and 35%. All tests consist of 50% multiple-choice questions and 50% problem questions. Test dates are January 31, March 2 and a date during the April exam period, TBA by the Registrar's office. A total of 10% of the course grade can be substituted by assignments, **submitted prior to the exams** for which they are to serve as a partial substitute. Assignments cannot be handed in to upgrade low performance on past exams.

PROCEDURES FOR MISSED EXAMS AND LATE ASSIGNMENTS:

There are **no make-ups for missed exams** or extensions on assignments. With appropriate documentation to justify their absence, students may add the weight of a missed exam to that of the immediately following exam. In case of a missed final exam University regulations apply.

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. They will also be able to better interpret and critically evaluate research findings reported in the media. The course will provide top

preparation for PSYC 2022, PSYC 2030, PSYC 3030 and PSYC 4000 or PSYC 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. Understanding statistics will greatly help you to understand other subject matters, which is the reason why in most universities statistics is a requirement for any psychology courses other than PSYC 1010. Mastering PSYC 2021 requires 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. 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) making use of an excellent free website **Khanacademy.org** to increase mental fitness and upgrade basic math skills,
- (b) keeping oneself in good operating conditions,
- (c) setting aside weekly time periods for regular homework,
- (d) using several smaller time periods rather than one big block,
- (e) making friends with classmates and working with others EXCEPT during exams,
- (f) making use of the models provided, and
- (g) asking for help when encountering difficulties, i.e. essentially staying on top rather than letting things slide, hoping to catch up at some future point in time.

CORRESPONDENCE:

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

Jan	3	Introduction to the course Introduction to statistics Making sense out of data – graphic representation
Jan.	10	Measures of central tendencies and measures of dispersion
Jan.	17	Why is the standard deviation the preferred measure of dispersion? Standard scores and the normal curve
Jan.	24	Optional assignment #1 (3%) Pearson correlation and regression
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Jan.	31	FIRST EXAM (30%)
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Feb.	7	Probability Introduction to inferential statistics
Feb.	14	Hypothesis testing: inferences about a single mean
Feb,	21	READING WEEK no classes
Feb.	28	Optional assignment #2 (3.5%) Elements of research design; the t-test for two correlated samples
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March	6	SECOND EXAM (35%)
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March	9	Last day to drop course without receiving a grade
March	13	t-test for two independent samples The power of statistical tests and the problem of hypothesis testing
March	20	Chi square test for goodness of fit and chi square test for homogeneity
March	27	Optional assignment #3 (3.5%) Review
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Final Exam Period		FINAL EXAM (35%)
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