Faculty of Health
Department of Psychology
PSYC 2020 6.0 A: STATISTICAL METHODS I AND II
Thursday/19:00- 22:00/FC203
FW/2017

Instructor and T.A. Information

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Email etiquette: Always put PSYC2020A in the Subject heading of any email and include your full name and student name in the body of the message.

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Office Hours	In class or by appointment

Course Prerequisite(s) or corequisite: Course prerequisites are strictly enforced.

- HH/PSYC 1010 6.00 (Introduction to Psychology), with a minimum grade of C when used as a prerequisite.

Course Credit Exclusions

Please refer to York Courses Website for a listing of any course credit exclusions.

Course website: Moodle

Course Description

This course is designed to provide the student with the statistical skills necessary to analyze, understand and communicate the data from psychological research. Topics covered will include basic concepts of measurement, measures of central tendency, variability and relationship. As well, selected inferential statistics will be covered (for example t-tests, ANOVAs, correlation and regression), there will also be non-parametric test such as χ^2 and tests of ordinal data.

Students should have a reasonably good working knowledge of high school mathematics. It is expected that students will complete independent work on the course material equivalent to two or three times that spent in lecture. End of chapter questions should be completed and online mastery quizzes are assigned. Also homework will be assigned and taken up during class. Students should always attempt the homework questions and raise problems they have with the homework so concepts can be further explained. Statistics is a course that requires "doing the math", it is best not to hide from this.

Program Learning Outcomes

Upon completion of this course, students should be able to:

1. Compute descriptive statistics and inferential statistics.
2. Interpret and report the results of descriptive statistics and inferential statistics.
3. Distinguish between the role of descriptive statistics and inferential statistics.
4. Compute inferential statistics for univariate linear models (ANOVA, regression).
5. Interpret and report the results of inferential statistics for univariate linear models.
6. Recognize the limits of inferential statistics.

Topics Covered

- Defining Key Statistical Terms
- Frequency Distributions
- Central Tendency
- Variability
- z-Scores/Normal Distribution
- Probability
- Sampling Distribution
- Confidence Intervals
- Power
- Effect Size
- Hypothesis Testing
- Correlation (Pearson at minimum)
- χ^2 Goodness of Fit
- χ^2 Test of Independence
- One-sample t test
- Two independent samples t-test
- Paired samples t-test
- Review of basic statistical concepts
- One-way Independent Groups ANOVA (with contrasts)
- Two-way Independent Groups ANOVA (with interaction and contrasts)
- One-way Repeated Measures ANOVA (with contrasts)
- Correlation (including partial correlation)
- Simple Regression
- Multiple Regression
- **Effect size is included as part of all inferential statistics covered in this course.*

Specific Learning Objectives

This course should allow students to be able to identify and calculate both descriptive and inferential statistics. By understanding topics covered above, students should gain

knowledge of which test to use in a specific situation and how to communicate results to similarly familiar audiences.

Required Text

- Nolan, S.A. & Heinzen, T. E. (2017) Statistics for the Behavioural Sciences 4th Ed. New York NY: Worth Publishers/MacMillan Learning. With Launchpad
- Or you can use the Loose leaf + Launchpad
- Launchpad is required so that Learning Curve and Mastery Quizzes can be accessed.

Course Requirements and Assessment:

Assessment	**Date of Evaluation (if known)**	**Weighting**
Mastery Quizzes	Approx. weekly (best 10 count)	10
Test1	Oct 12 2017	12
Test 2	Nov 23 2017	12
Test 3	January 18 2018	12
Test 4	March 1 2018	12
Test 5	March 29	12
Cumultive Final	Winter Exam period (April 9-23)	30
Total		100%

Description of Assignments

Mastery Quizzes are run through Launch Pad. The first one will NOT be for grade, rather it is to ensure that everyone works out how to complete this aspect of the course evaluation without technological concerns. No late work is accepted.

Mastery Quizzes are timed multiple choice tests, content linked to each lecture and sets of three or four will be due before each Term Test. You may have up to three attempts on each Quiz. They will be graded as follows:

16 < out of 20 = 100%

14 or 15 out of 20 = 50%

< 14 out of 290 = 0%

The scores for the best 10 out of the 16 will count.

Term Tests are worth 12%, held in class on five occasions. Questions may be in true/false, multiple choice, paragraph and short answer calculation format. A formulae sheet will be given as will any required statistical tables needed. These term tests cover topics covered preceding the test date.

The cumulative final is worth 30% and is made up of questions from the entire course content.

Grading as per Senate Policy

The grading scheme for the course conforms to the 9-point grading system used in undergraduate programs at York (e.g., A+ = 9, A = 8, B+ - 7, C+ = 5, etc.). Assignments and tests* will bear either a letter grade designation or a corresponding number grade (e.g. A+ = 90 to 100, A = 80 to 90, B+ = 75 to 79, etc.)

(For a full description of York grading system see the York University Undergraduate Calendar - Grading Scheme for 2017-18)

Late Work/Missed Tests or Exams

Students with a documented reason for missing a course test, such as illness, compassionate grounds, etc., which is confirmed by supporting documentation (Attending Physician Statement which can be found at: http://myacademicrecord.students.yorku.ca/pdf/attending-physicians-statement.pdf may request accommodation from the Course Instructor. Further extensions or accommodation will require students to submit a formal petition to the Faculty.

APS is the ONLY form of medical documentation accepted. A Doctor's note is NOTE sufficient. If in doubt contact Dr Jenkin to be advised as other forms of documentation will be accepted.

Missed Test: If you miss a term test you will score a zero. There are no make-ups for missed tests. With appropriate documentation you can request a re-weighting onto the cumulative final. Note that when one term test is missed the final is then weighted 45%, two tests would result in a final worth 60%. If your health is so severely compromised that you miss more than one test you should consider dropping as you will probably be missing too much lecture time to do well in the course. If more than one term test is missed, then be aware that you may not have a true understanding of your performance in the course before the drop deadline.

A missed final will require documentation along with a Deferred Standing Agreement in order for course completion.

Important New Information Regarding Missed Tests

For any missed tests or late assignments, students MUST complete the following online form which will be received and reviewed in the Psychology undergraduate office.

HH PSYC: Missed Tests/Exams Form. Failure to complete the form within 48 hours of the original deadline will result in a grade of zero for the test/assignment.

Add/Drop Deadlines

For a list of all important dates please refer to: Fall/Winter 2017-18 - Important Dates

	FALL (F)	**YEAR (Y)**	**WINTER (W)**
Last date to add a course **without permission** of instructor (also see Financial Deadlines)	Sept. 20	Sept. 20	Jan. 17
Last date to add a course **with permission** of instructor (also see Financial Deadlines)	Oct. 4	Oct. 18	Jan. 31

	FALL (F)	YEAR (Y)	WINTER (W)
Drop deadline: Last date to drop a course without receiving a grade (also see Financial Deadlines)	Nov. 10	Feb. 9	March 9
Course Withdrawal Period (withdraw from a course and receive a grade of "W" on transcript – see note below)	Nov. 11 - Dec. 4	Feb. 10 - Apr. 6	March 10 - Apr. 6

***Note**: *You may withdraw from a course using the registration and enrolment system after the drop deadline until the last day of class for the term associated with the course. When you withdraw from a course, the course remains on your transcript without a grade and is notated as "W". The withdrawal will not affect your grade point average or count towards the credits required for your degree.*

Information on Plagiarism Detection

It is expected that students do not put forward another's work as their own. Work on all the course evaluations should be done independently. Do not show your work to anyone (or make it available to anyone). Do not look at others' work.

Electronic Device Policy

No photography of slides or board work is allowed without the instructor's permission

Attendance Policy

Attendance will not be taken regularly but lecture attendance is expected so that problems with material can be discussed when homework questions are taken up in class. Both the instructor and TA are present in lecture time slot to help students who are having difficulties.

Academic Integrity for Students

York University takes academic integrity very seriously; please familiarize yourself with Information about the Senate Policy on Academic Honesty.

It is recommended that you review Academic Integrity by completing the Academic Integrity Tutorial and Academic Honesty Quiz.

Test Banks

The offering for sale of, buying of, and attempting to sell or buy test banks (banks of test questions and/or answers), or any course specific test questions/answers is not permitted in the Faculty of Health. Any student found to be doing this may be considered to have breached the Senate Policy on Academic Honesty. In particular, buying and attempting to sell banks of test questions and/or answers may be considered as "Cheating in an attempt to gain an improper advantage in an academic evaluation" (article 2.1.1 from the Senate Policy) and/or "encouraging, enabling or causing others" (article 2.1.10 from the Senate Policy) to cheat.

Electronic Devices During a Test/Examination

Electronic mobile devices of any kind are not allowed during a test or examination. Students are required to turn off and secure any electronic mobile device in their bag which is to be placed under the chair while a test/exam is in progress. Any student observed with an electronic devise during a test/exam may be reported to the Undergraduate Office for a potential breach of Academic Honesty.

Academic Accommodation for Students with Disabilities

While all individuals are expected to satisfy the requirements of their program of study and to aspire to do so at a level of excellence, the university recognizes that persons with disabilities may require reasonable accommodation to enable them to do so. The York University Accessibility Hub is your online stop for accessibility on campus. The Accessibility Hub provides tools, assistance and resources. Policy Statement.

Policy: York University shall make reasonable and appropriate accommodations and adaptations in order to promote the ability of students with disabilities to fulfill the academic requirements of their programs.

The nature and extent of accommodations shall be consistent with and supportive of the integrity of the curriculum and of the academic standards of programs or courses. Provided that students have given sufficient notice about their accommodation needs, instructors shall take reasonable steps to accommodate these needs in a manner consistent with the guidelines established hereunder.

For Further Information please refer to: York university academic accommodation for students with disabilities policy.

Course Materials Copyright Information

These course materials are designed for use as part of the PSYC2020A course at York University and are the property of the instructor unless otherwise stated. Third party copyrighted materials (such as book chapters, journal articles, music, videos, etc.) have either been licensed for use in this course or fall under an exception or limitation in Canadian Copyright law.

Copying this material for distribution (e.g. uploading material to a commercial third-party website) may lead to a violation of Copyright law. Intellectual Property Rights Statement.

Course Schedule

Sept 7	Introduction and Basic Mathematics	Ch. 1 Appendix A
Sept 14	Frequency Distributions	Ch. 2
Sept 21	Visual Displays of Data	Ch. 3
Sept 28	Central Tendency	Ch. 4
Oct 5	Variability	Ch. 4
Oct 12	Test 1	12%
Oct 19	Sampling and probability	Ch. 5
Oct 26	Fall Reading Days	

Nov 2	Normal curve, standardization and z scores	Ch. 6
Nov 9	Hypothesis tests with z	Ch. 7
Nov 16	Confidence intervals, Effect size and Statistical Power	Ch. 8
Nov 23	Test 2	12%
Nov 30	Single sample t test	Ch. 9
	Winter Break	
Jan 4	Paired samples t test, Wilcoxon signed ranks test	Ch. 10, 18
Jan 11	Independent samples t test, Mann-Whitney U test	Ch. 11, 18
Jan 18	Test 3	12%
Jan 25	1–way between groups ANOVA	Ch. 12
Feb 1	1–way between groups ANOVA, Kruskal-Wallis H test	Ch. 12, 18
Feb 8	1–way within groups ANOVA, Friedman	Ch. 13, Supplemental notes
Feb 15	2–way between groups ANOVA	Ch. 14
Feb 22	Winter Reading Week	
Mar 1	Test 4	12%
Mar 8	Correlation, Spearman Rank-order correlation	Ch. 15, 18
Mar 15	Regression	Ch. 16
Mar 22	Chi-Square	Ch. 17
Mar 29	Test 5	12%
April 9 - 23	Winter Exams – cumulative final exam	30%