

PSYC 2021 (Section A) Statistical Methods 1

Fall 2017 Wednesdays 14:30-17:30 (CLH G)

Course Director:	John Anderson statisticsyork2017@gmail.com 5030 VFD Building (by appt. only) Appointments can be booked at: https://johnaeanderson.youcanbook.me/	<p>MY HOBBY: EXTRAPOLATING</p> <p>https://xkcd.com/605</p>
Teaching Assistants:	Rivka Green: rrgreen@yorku.ca BSB 130 Julian Digiovanni: juliand@my.yorku.ca	
Admin contact:	Mihaela Stancescu mihaelas@yorku.ca	

Course Description:

This course will focus on the fundamentals of the theory and the application of statistical procedures used in psychological research. Specifically, we will cover: fundamentals of descriptive and inferential statistics, including population and sampling distributions, simple association, probability, estimation, and hypothesis testing. A good working knowledge of algebra is assumed. As an addendum, given that psychology has been moving away from simple null hypothesis significance testing in recent years, we will conceptually cover modern techniques including: effect sizes and Bayesian statistics.

*Statistics is all about **storytelling** using data. More than anything else, I hope that you take from this course the idea that all the graphs, numbers, and tables are **tools** to help you prove your story to your audience.*

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.

- 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

Topics Covered

- Defining Key Statistical Terms
- Frequency Distributions
- Central Tendency
- Variability
- z-Scores/Normal Distribution

**Effect size is included as part of all inferential statistics covered in this course.*

Expectations:

We are about to embark on an adventure together. There will be challenging bits, exciting and rewarding bits, and dare I say, tedious bits - but we will get through all of them ☺. Part of our responsibility to each other is *being prepared* to face the dangers statistics present to the unwary (one never wants to face a t-test without the right equipment). Therefore, please do the assigned readings and homework **before** class. In turn, I will try to keep the material as fun as possible while showing you how to navigate this subject. Looking forward to meeting you all & getting to know you!



<http://www.emmanuellemoureux.com/forest-of-numbers/>

John

Course Prerequisite(s) or co-requisite:

Course prerequisites are strictly enforced

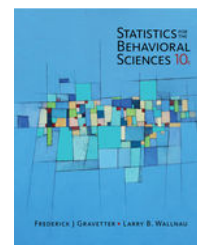
- HH/PSYC 1010 6.00 (Introduction to Psychology), with a minimum grade of C when used as a prerequisite.

Course Credit Exclusions

Please refer to [York Courses Website](#) for a listing of any course credit exclusions.

Required Text:

Gravetter, F & Wallnau, L. (2016). *Statistics for The Behavioral Sciences* (with MindTap Access). Wadsworth.
ISBN: 1305504917



This one!

- * **Important:** In order to complete weekly homework assignments, you will need to purchase the book bundled with **MindTap**, or purchase **MindTap** separately (this contains an electronic version of the textbook). For assistance installing & setting up MindTap/Aplia, or for general troubleshooting, please contact the Nelson Rep Breken Finnie (breken.finnie@nelson.com)

Course Webpage:

<http://www.yorku.ca/moodle/>

*Date of the final exam will be determined by the Registrar’s office. See www.yorku.ca for schedule.

Other important Dates:

For a list of all important dates please refer to: [Fall/Winter 2017-18 - Important Dates](#)

Last date to enrol **without** permission of course instructor – Sept. 20 2017

Last date to enrol **with** permission of course instructor – Oct. 4 2017

Last date to drop courses without receiving a grade – Nov. 10, 2017

Last date to withdraw from a course and receive a grade of “W” - Nov. 11 - Dec. 4, 2017

Evaluation:

Class Participation (exit quizzes):	5%
Aplia Assignments (13):	20%
Midterm Exam:	30%
Research Report:	15%
Final Exam	30%
Total	100%

Aplia Assignments (20%)

Aplia assignments are due the **same day** as the lecture at 11:00 PM. This is to gently encourage you to keep up with the readings ☺. It also shifts the focus of the lecture from introducing you to content for the very first time to reviewing material you have encountered on your own. This will hopefully allow you to voice concerns and questions about the material and discuss it with the class.

Midterm (30%) and Final Exam (30%):

There will be one in-class midterm on the dates outlined on the schedule at the end of this document, and a final exam scheduled by the Registrar’s Office during the December exam period. Each test will consist of multiple choice questions and short answer questions. Tests will be based on lectures, textbook readings, and Aplia assignments.

Research Report (15%):

This final written assignment provides students with an opportunity to write a research report similar to one published in peer-reviewed journals. For this assignment, students will be given a dataset to analyze. Each student will pre-register a hypothesis with me (we will set up a Google Form for this). Papers will be written according to APA style and will therefore need a title,

abstract, introduction, methods, results, discussion, and works cited. I will provide an example paper early in the course. This assignment will be peer graded using the platform peer scholar (<http://www.pearsoned.ca/highered/peerscholar/>).

Assignment Submission: Proper academic performance depends on students doing their work not only well, but on time. Assignments will be submitted **BOTH** to peerscholar (for grading) and to TurnItIn (via Moodle) to ensure academic honesty.

Lateness Penalty: Assignments received later than the due date will be penalized 5% per day that the assignment is late. Exceptions to the lateness penalty for valid reasons such as illness, compassionate grounds, etc., may be entertained by the Course Instructor but will require supporting documentation (e.g., a doctor's letter).

Grading: 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](#))

Class attendance & participation:

Each class there will be a quiz on content presented that class. This is **NOT** the same as the Aplia quizzes. The quiz will count towards the 5% participation grade.

Policy on Missed Exams:

1. If you know you will be missing an exam well in advance for whatever reason, **speak to me** - we can arrange for you to write the test on an alternative date. I will be far more sympathetic to proactive students who take this approach rather than people who "remember" after the test that they had their trip to the Bahamas and could not make the test ... and please can they re-write the test?
2. Students with a documented reason for missing a course test, such as illness, compassionate grounds, etc., which is confirmed by relevant and current 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.
3. Students **must** contact the course instructor, within 48 hours of the missed exam. In this email, please (a) outline the reason for your absence, and (b) confirm that you have medical or other relevant documentation to support this reason. Be sure to note your full name and student number in the subject header of your email. Failure to complete the form within 48 hours of the original deadline will result in a grade of zero for the test/assignment.
4. Please note that there will only be **one set date for the make-up test/exam**. If both exams are missed, students will have to retake the course unless they successfully petition.

5. Please also note that if you miss a test, regardless of your reason, you have waived the right to have a specific percentage of graded feedback available to you prior to the drop date.
6. Note also that deferred final exams are held on a single common date determined by the Department of Psychology. No individualized testing is available unless arranged formally through one of the offices at the University (e.g., Counselling and Disability Services - CDS).
7. If you produce a valid medical document, signed by a physician, stating that you were medically unable to take the exam/test for a specific time period, you will be able to take a makeup exam/test. If you miss an exam/test for non-medical reasons, you still must produce **current** supporting documentation (e.g., death certificate, obituary notice, automobile accident report, airline ticket for emergency travel, etc.).
8. Students are expected to write each test on the dates specified. If you miss a test for *no documented reason(s)*, you will receive a grade of zero.
9. If you have a legitimate reason (e.g., death in the family, severe illness, etc.) for being excused from a test/exam, and have documentation to verify your absence you may take a make-up test/exam in lieu of the missed test/exam.
10. Once you have contacted the course instructor and the TA, you will need to have completed the attending physician's statement found at <http://www.registrar.yorku.ca/exams/deferred/>. **You are required to bring this form to the make up exam.** You will then receive confirmation of the make-up examination date from your TA. It is your responsibility to find out the information about when the make up test/exam is and ensure that you are set to write the make-up test/exam.

Important Information For Students:

All students are expected to familiarize themselves with the following information, available on the Senate Committee on Academic Standards, Curriculum & Pedagogy webpage:

- Senate Policy on Academic Honesty and the Academic Integrity Website
- Course requirement accommodation for students with disabilities, including physical, medical, systemic, learning, and psychiatric disabilities
- Student Conduct Standards
- Religious Observance Accommodation

Code of Student Rights and Responsibilities:

<http://www.yorku.ca/secretariat/policies/document.php?document=202>

York University Secretariat Home:

<http://www.yorku.ca/secretariat/index.html>

Important Dates from the Registrar:

<http://www.registrar.yorku.ca/enrol/dates/>

Policy on Accommodation for students with disabilities:

<http://www.yorku.ca/secretariat/policies/document.php?document=68>

Please read the information on plagiarism and academic honesty:

<http://www.yorku.ca/academicintegrity/students/index.htm> <http://www.yorku.ca/univsec/policies/document.php?document=69>

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 device 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 PSYC2021-A 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](#).

Month	Day	Lecture Topic	Chapters	Aplia Quiz(es) Due (11:00 PM)	Grade Weight
September	13-Sep	Introduction Lecture: Introduction to Aplia & Frequency Distribution	1 & 2		
	20-Sep	Central Tendency	3	Chapters 1 - 3	
	27-Sep	Variability	4	4	
October	04-Oct	Z-Scores	5	5	
	11-Oct	Term-Test 1	Chapters 1-5	5	30%
	18-Oct	Probability 1	6	6	
	25-Oct	Probability 2	6		
November	01-Nov	Probability and samples	7	7	
	08-Nov	Introduction to Hypothesis Testing	8	8	
	15-Nov	Correlation	15	15	
	22-Nov	T-tests	9-11	9-11	
	29-Nov	The Chi-Square Statistic	17	17	
December	6-Dec	<i>No Class</i>			Written Report Due (15%)
	Final Exam	Time, date, and location will be announced on Moodle once this is known April 7-24 is Exam Period)		Cumulative (Chapters 1-11 & 15 & 17)	30%
<p>The 13 quizzes, together, are worth 20% of your course grade.</p>					