

**Faculty of Health  
Department of Psychology  
PSYC 2021 3.0 A: STATISTICAL METHODS I  
Wednesday / 2:30pm – 5:30pm / LAS B  
Fall / 2023**

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- We will meet **in person every Wednesday at 2:30pm in LAS B**. Each class will involve a lecture followed by demonstrations/ activities to aid in your understanding of the concepts covered in the lecture. Lecture attendance is strongly encouraged as material will expand upon the slides provided and demonstrations will be valuable to understand course material and statistical software use.
- In the case of a **university/provincial shut down of in-person learning lectures will be delivered online via Zoom** (information will be provided on eClass if this occurs). Please note these sessions should be treated like an official class and therefore you are expected to conduct yourself in a respectable manner.
- Please note that your quizzes will take place during the assigned class time 2:30pm – 5:30pm and therefore **it is expected that you will be available during this time**. More information about your quizzes is provided below. All other assessments can be completed outside the assigned class time but will have specific due dates. **There will be no weekly live class activity on the day a quiz is scheduled.**

**Instructor and T.A. Information:**

Instructor: **Stefania Moro, PhD**

Office Hours: By appointment only

Email: [moros@yorku.ca](mailto:moros@yorku.ca) (when sending an email please include PSYC2021A in the subject box and your full name and student number in the signature of the message)

<b>T.A.</b>	<b>Sarah Campbell</b>	<b>William Fisher</b>
<b>Email</b>	<a href="mailto:scampb@yorku.ca">scampb@yorku.ca</a>	<a href="mailto:wfshr@yorku.ca">wfshr@yorku.ca</a>
<b>Office Hours</b>	By appointment only	By appointment only

*Please note that it may take the instructor and TAs up to 3 business days to respond to your emails. If you send us an email over the weekend please do not expect a response until the normal work week (Monday – Friday) unless otherwise stated by a member of the teaching team or it is an urgent matter.*

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

- HH/PSYC 1010 6.00 (Introduction to Psychology)

**Course Credit Exclusions:**

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

**Course website:** [eClass](#)

All course materials will be available on the course eClass site, unless otherwise indicated by the instructor. The site will be your central access point for course materials. **Note: Please do not send the teaching team messages through the chat on eClass.**

**Course Description:**

An introduction to the fundamental concepts and application of descriptive statistics. An introduction to probability and inferential statistics, including hypothesis testing with the normal- and t-distributions.

**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.

**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)
  - $\chi^2$  Goodness of Fit
  - $\chi^2$  Test of Independence
  - One-sample t test
  - Introduce independent and dependent designs
- \*Effect size is included as part of all inferential statistics covered in this course.*

**Specific Learning Objectives:**

- Choose descriptive statistics such as measures of central tendency and variability that are appropriate for summarizing and organizing variables with different scales of measurement.
- Demonstrate the ability to summarize, organize, and present the essential features of data numerically and graphically.
- Identify the differences between descriptive and inferential statistics (e.g., summarize sample data vs. use sample data to make inferences about the population).

- Identify limitations of descriptive statistics (e.g., cannot be used to test hypotheses about the population under study).
- Demonstrate the ability to generate statistical hypotheses (i.e., null and alternative) that are applicable to various research situations.
- Demonstrate the ability to formulate and perform hypothesis tests that are applicable to various research situations (i.e., z test, t tests, correlations).
- Use statistical software (jamovi) to conduct descriptive and inferential statistics.
- Interpret and present results in APA.

**Required Text:**

Nolan, S. A. & Heinzen, T. E. (2020). *Statistics for the Behavioral Sciences* (5<sup>th</sup> Edition). Worth Publishers. MacMillan Learning.

**Recommended Texts (Open Source):**

Cote, L. R., Gordon, R., Randell, C. E., Schmitt, J., & Marvin, H. (2021). *Introduction to Statistics in the Psychological Sciences*. <https://open.umn.edu/opentextbooks/textbooks/an-introduction-to-psychological-statistics>

Navarro, J. D., Foxcroft, D. R. (2019). *Learning Statistics with jamovi*. <https://www.learnstatswithjamovi.com>

**Required Software:**

Students are required to download the “solid” version of jamovi (version 2.3.28) from [www.jamovi.org](http://www.jamovi.org). This software is required for students to complete activities and assignments in the course. Students are advised to download this software as soon as possible to be prepared for the start of the course.

**APA resource:**

[https://owl.purdue.edu/owl/research\\_and\\_citation/apa\\_style/apa\\_formatting\\_and\\_style\\_guide/reference\\_list\\_books.html](https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/reference_list_books.html)

**Course Requirements and Assessment:**

Assessment	Date of Evaluation (if known)	Weighting
Achieve Learning Curves	Weekly	12%
Mini Assignment 1	September 27, 2023	6%
Mini Assignment 2	November 8, 2023	6%
Quiz 1	October 18, 2023	15%
Quiz 2	November 29, 2023	15%
Assignment 1	October 9, 2023	20%
Assignment 2	December 4, 2023	26%
<b>Total</b>		<b>100%</b>

### **Description of Assignments:**

**Learning Curves:** Learning Curve online activity can be found on the textbook's online accompaniment site: Achieve. You must complete a Learning Curve for each chapter covered in our course. Learning Curve's are game-like quizzing that adapts based on performance. ***There will be no opportunities to make up grades for missed Learning Curves.***

**Mini Assignments:** Students will complete an activity that covers key material taught throughout the course. **This activity will be completed outside the normal class meeting time and students will work individually.** The activity may take the form of a scenario where students will be asked to read some information and then respond to a question(s) – students will need to use course materials and other resources to respond. These activities will be made available on eClass on the assigned dates provided and you will receive them in advance of the due date. **Late assignments will receive a penalty of 10% per day, up until 3 days when a grade of 0 will be assigned.**

**Quizzes:** Quizzes will be non-cumulative and cover the material from lectures, readings, class, and mini assignments. The format of the quizzes may be a mix of multiple-choice and open-ended/short-answer questions (e.g., defining concepts or responses to analysis questions). **Quizzes will take place during the assigned class time: 2:30pm-5:30pm ONLINE.** More information about the content, format and length of the quiz will be provided prior to its administration.

**Major Assignments:** The purpose of an assignment is to further evaluate your conceptual understanding of the material covered in class, to demonstrate that you can perform the types of analysis covered in this course and that you can interpret/report the results. **Major Assignments will be completed outside the normal class time and students are expected to complete their assignment individually.** More information will be provided in eClass and you will receive each assignment in advance of the due date. **Late assignments will receive a penalty of 10% per day, up until 3 days when a grade of 0 will be assigned.**

### **Class Format and Attendance Policy:**

Students are strongly encouraged to attend the class sessions as the material covered in the course in a given week build on the previous week's material and enhances your overall learning experience. These sessions will also help you to stay on track with the course material.

### **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 89, B+ = 75 to 79, etc.)

For a full description of York grading system see the York University Undergraduate Calendar – [Grading Scheme for 2023-24](#)

**Missed Tests/Midterm Exams/Late Assignment:**

For any missed quiz or late assignment, students MUST complete the following online form which will be received and reviewed in the Psychology undergraduate office. At this time, due to COVID-19 an Attending Physician’s Statement (APS) is not required, **however, a reason for missing an evaluated component in the course must be provided.**

**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 missed quiz or late assignment.

**Missed Quiz:** If you miss a Quiz you must complete the Missed Tests/Exam Form and contact your Teaching Assistant within 48 hours of missing the Quiz. Once you have notified us about your missed quiz, a member of the teaching team will be in contact with you to schedule a make-up. **There is only one opportunity to write a make-up quiz;** the makeup may be in a different form from the original test. If you do not contact us or complete the form within 48 hours you will be assigned a 0. **Please note that a Mini Assignment or Major Assignment cannot be used as a substitute for a missed quiz.**

**Late Mini Assignment/ Major Assignment:** Similar to your quizzes you must have a valid reason for missing the scheduled due date for your mini or major assignment. It is up to the course instructor to determine how much additional time, if any, will be allowed to complete and submit the stats check/assignment. **Please note that a quiz cannot be used as a substitute for a Mini Assignment or Major Assignment.**

**Add/Drop Deadlines:**

For a list of all important dates please refer to: [Undergraduate Fall/Winter 2023-2024 Important Dates](#)

	Fall (Term F)	Year (Term Y)	Winter (Term W)
Last date to add a course <b>without permission</b> of instructor (also see Financial Deadlines)	Sept. 20	Sept. 20	Jan. 22
Last date to add a course <b>with permission</b> of instructor (also see Financial Deadlines)	Sept. 28	Sept. 28	Jan. 31
Drop deadline: Last date to drop a course without receiving a grade (also see Financial Deadlines)	Nov. 8	Feb. 8	Mar. 11
Course Withdrawal Period (withdraw from a course and receive a grade of “W” on transcript – see note below)	Nov. 9 - Dec. 5	Feb. 9 - April 8	March 12 - April 8

**Add and Drop Deadline Information:**

There are deadlines for adding and dropping courses, both academic and financial. Since, for the most part, the dates are **different**, be sure to read the information carefully so that you understand the differences between the sessional dates below and the [Refund Tables](#).

You are strongly advised to pay close attention to the "Last date to enrol without permission of course instructor" deadlines. These deadlines represent the last date students have unrestricted access to the registration and enrolment system.

After that date, you must contact the professor/department offering the course to arrange permission.

You can drop courses using the registration and enrolment system up until the last date to drop a course without receiving a grade (drop deadline).

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:**

Turnitin will be used to detect any evidence of plagiarism.

**Electronic Device Policy:**

Electronic devices (e.g., tablets, laptops) are permitted during class time for course-related purposes. It is expected that you would complete tests/exams in a manner that does not require consulting an unauthorised source during an examination unless the tests/exams are open-book.

**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.

### **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 university encourages students with disabilities to register with Student Accessibility Services (SAS) to discuss their accommodation needs as early as possible in the term to establish the recommended academic accommodations that will be communicated to Course Directors as necessary. Please let me know as early as possible in the term if you anticipate requiring academic accommodation so that we can discuss how to consider your accommodation needs within the context of this course. <https://accessibility.students.yorku.ca/>

### **Excerpt from Senate Policy on Academic Accommodation for Students with Disabilities:**

1. Pursuant to its commitment to sustaining an inclusive, equitable community in which all members are treated with respect and dignity, and consistent with applicable accessibility legislation, York University shall make reasonable and appropriate accommodations in order to promote the ability of students with disabilities to fulfill the academic requirements of their programs. This policy aims to eliminate systemic barriers to participation in academic activities by students with disabilities.

All students are expected to satisfy the essential learning outcomes of courses. Accommodations shall be consistent with, support and preserve the academic integrity of the curriculum and the academic standards of courses and programs. 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 **PSYC 2021 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](#).

### **Calumet and Stong Colleges' Student Success Programming:**

[Calumet](#) and [Stong](#) Colleges aim to support the success of Faculty of Health students through a variety of **free programs** throughout their university career:

- [Orientation](#) helps new students transition into university, discover campus resources, and establish social and academic networks.
- [Peer Mentoring](#) connects well-trained upper-year students with first year and transfer students to help them transition into university.

- [Course Representative Program](#) aims to build the leadership skills of its Course Reps while contributing to the academic success and resourcefulness of students in core program classes.
- [Peer-Assisted Study Session \(P.A.S.S.\)](#) involve upper-level academically successful and well-trained students who facilitate study sessions in courses that are known to be historically challenging.
- [Peer Tutoring](#) offers one-on-one academic support by trained Peer Tutors.
- Calumet and Stong Colleges also support students' [Health & Wellness](#), [leadership and professional skills development](#), [student/community engagement and wellbeing](#), [career exploration](#), [Indigenous Circle](#), [awards and recognition](#), and [provide opportunities to students to work or volunteer](#).
- Please connect with your Course Director about any specific academic resources for this class.
- For additional resources/information about our student success programs, please consult our websites ([Calumet College](#); [Stong College](#)), email [scchelp@yorku.ca](mailto:scchelp@yorku.ca), and/or follow us on Instagram ([Calumet College](#); [Stong College](#)), Facebook ([Calumet College](#); [Stong College](#)) and [LinkedIn](#)
- Are you receiving our weekly email (Calumet and Stong Colleges - Upcoming evens)? If not, please check your Inbox and Junk folders. If you do not find our weekly emails, then please add your 'preferred email' to your Passport York personal profile. If you need support, please contact [ccscadm@yorku.ca](mailto:ccscadm@yorku.ca), and request to be added to the listerv.

## Course Schedule

Week	Date	Topic	Reminder
1	Sept. 6	Course Overview Introduction to Statistics (Chapter 1)	<i>Learning Curve Ch. 1 Due</i>
2	Sept. 13	Frequency Distributions & Visual Displays of Data (Chapters 2 & 3)	<i>Learning Curves Ch. 2 &amp; 3 Due</i>
3	Sept. 20	Central Tendency & Variability (Chapter 4) Working with data: Introduction to jamovi	<i>Learning Curve Ch. 4 Due</i>
4	Sept. 27	Sampling and Probability (Chapter 5)	<i>Learning Curve Ch. 5 Due</i> <b>Mini Assignment #1 (6%) DUE</b>
5	Oct. 4	The Normal Curve, Standardization, & z-scores (Chapter 6)	<i>Learning Curve Ch. 6 Due</i>
	Oct. 11	<b>NO CLASS – FALL READING WEEK</b>	<b>ASSIGNMENT 1 (20%) DUE MON OCT 9</b>
6	Oct. 18	<b>QUIZ (15%)</b>	
7	Oct. 25	Hypothesis Testing with z-scores (Chapter 7) Confidence Intervals, Effect Size, & Statistical Power (Chapter 8)	<i>Learning Curves Ch. 7 &amp; 8 Due</i>
8	Nov. 1	Single-Sample t-test (Chapter 9)	<i>Learning Curve Ch. 9 Due</i>
9	Nov. 8	Correlation (Chapter 15)	<i>Learning Curve Ch. 15 Due</i> <b>Mini Assignment #2 (6%) DUE</b>
10	Nov. 15	<b>NO CLASS – Final assignment work period</b>	
11	Nov. 22	Chi-Square Tests (Chapter 17)	<i>Learning Curve Ch. 17 Due</i>
12	Nov. 29	<b>QUIZ (15%)</b>	<b>ASSIGNMENT 2 (26%) DUE MON DEC. 4</b>

**QUIZ 1 (15%) - COVERS WEEKS 1-5**  
**QUIZ 2 (15%) - COVERS WEEKS 7-12**