This course will consist of both asynchronous (completed individually on your own time) and synchronous (completed as a community at a scheduled day and time) components.

**Asynchronous recorded lectures:** Pre-recorded content-based lectures will be shared through eClass. These videos will provide instruction of course material. Videos demonstrating the use of statistical software (jamovi) will also be available on eClass. **Students are expected to have watched the pre-recorded lecture(s) before attending the live (synchronous) community meetings each week.** Any additional supplemental, review, or practice materials to be completed on students’ own time will also be shared through eClass.

**Synchronous community meetings:** Live community meetings for the course community (students, teaching team) will be held via Zoom every Monday and Wednesday at 7pm for 1 – 1.5 hours. **Students are expected to have watched the relevant pre-recorded lecture(s) before attending the live community meetings.** These meetings will consist Q&A sessions (for which students can submit questions through eClass up until 12 noon the day of the scheduled meeting), review of assigned practice problems, and additional opportunities to apply course content. Recordings of live community meetings will be posted to eClass for students who are unable to attend (e.g., International students living in different timezones, those with caregiving/parenting responsibilities).

Students are expected to spend **an average of 6 - 8 hours per week** on this course, including the time spent watching pre-recorded lectures and attending live community meetings.

**Instructor and T.A. Information**

**Instructor:** Dr. Jodi Martin  
**Office Hours:** By appointment on Zoom (see Communications folder on eClass to book)  
**Email:** jodimart@yorku.ca

<table>
<thead>
<tr>
<th>T.A.</th>
<th>Miranda DiLorenzo</th>
<th>Arleen Aksay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email</td>
<td><a href="mailto:mgdilo@yorku.ca">mgdilo@yorku.ca</a></td>
<td><a href="mailto:aaksay@yorku.ca">aaksay@yorku.ca</a></td>
</tr>
<tr>
<td>Office Hours</td>
<td>See Communications folder on eClass to book appointments</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE: ALL OFFICE HOURS WILL BE HELD AS ZOOM MEETINGS**

**Course Prerequisite(s):** 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: eClass

eClass (formerly known as Moodle) will be your central access point for all course materials including important details about the course, weekly content-based lecture videos & lecture slides, question submissions for weekly community meetings, links to weekly community meetings via Zoom, quizzes, assignment instructions and submissions, and appointment sign-ups for instructor & TA office hours. All communications from instructor to students will also take place through eClass’s Course Announcements.

It is absolutely necessary that you are regularly accessing eClass to be successful in this course. “I didn’t know it was on eClass” or “I don’t know how to use eClass” are not acceptable excuses for missing any course component. Following our initial orientation with the course eClass page, it is the students’ responsibility to review and become comfortable with using eClass for the purposes of this course.

Course Description

Statistical literacy is an important skill obtained through an undergraduate education in psychology. This course introduces students to the basic concepts of both descriptive and inferential statistics. We will take a hands-on, skills-based approach aimed at facilitating students’ understanding of the use and interpretation of various statistical methods. Students will obtain both conceptual and applied knowledge in a range of topics including data visualization, central tendency & variability, probability & sampling distributions, hypothesis testing, and effect sizes as well as both parametric and non-parametric statistical methods. Students will gain hands-on analytic experience working with real data by using software (jamovi) to run statistical analyses and by interpreting their results.

Program Learning Outcomes

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

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**

1. Compare and contrast descriptive and inferential statistics
2. Provide examples of the different scales of measurement
3. Summarize, organize, and present the essential features of different data types numerically and graphically
4. Calculate relevant descriptive statistics such as measures of central tendency and variability for different types of variables
5. Generate research questions and statistical hypotheses (i.e., null and alternative) for different research scenarios
6. Explain the process underlying hypothesis testing and how researchers use this process to test hypotheses and answer research questions
7. Conduct and interpret the results of various statistical tests using statistical software (jamovi)

**Required Software & Text**

Students are required to download the “solid” version of jamovi 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.

**There is no required text for this course.** Activities and opportunities for practice will be provided to you in pre-recorded lectures, live community meetings, and through eClass.

You can, however, consider the following **FREE** texts available to download online to supplement your learning in the course. **If you use one of these books, keep in mind that all quizzes will be based on lecture materials alone, not content of the texts (they are just for additional optional support).**

1) [https://www.learnstatswithjamovi.com/](https://www.learnstatswithjamovi.com/)
This book covers intro to statistics while also giving a lot of supplemental learning on using jamovi. Although this book goes far more in depth on some topics than is needed for this course, I would recommend it to supplement the application of your learning using jamovi, but also refer to the jamovi materials posted on eClass if you find this book too dense or intimidating.

2) [https://open.umn.edu/opentextbooks/textbooks/an-introduction-to-psychological-statistics](https://open.umn.edu/opentextbooks/textbooks/an-introduction-to-psychological-statistics)

This book covers general conceptual knowledge of statistics.

You can also consider the following options for PAID hard copy or e-books as optional supplemental material for the course:


Please note that if you purchase a textbook thinking it is required you may not be able to return it. Before buying the book, make sure you are aware of the seller's refund policy.

Course Requirements and Assessment:

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Date of Evaluation (if known)</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quiz 1</td>
<td>May 31</td>
<td>17.5%</td>
</tr>
<tr>
<td>Quiz 2</td>
<td>June 21</td>
<td>17.5%</td>
</tr>
<tr>
<td>Apply It 1</td>
<td>May 20 – 23</td>
<td>5%</td>
</tr>
<tr>
<td>Apply It 2</td>
<td>June 3 – 6</td>
<td>5%</td>
</tr>
<tr>
<td>Apply It 3</td>
<td>June 17 – 20</td>
<td>5%</td>
</tr>
<tr>
<td>Assignment 1</td>
<td>May 28</td>
<td>25%</td>
</tr>
<tr>
<td>Assignment 2</td>
<td>June 25</td>
<td>25%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Description of Assessments

**Quizzes**

Students will complete two (2) quizzes on eClass throughout the course. **Quizzes should be completed without reliance on additional aids (e.g., course notes, web searches, lecture slides) and without consulting with other students.** Each quiz will be non-cumulative based on content from pre-recorded lectures and live community meetings and will focus on students’ conceptual knowledge of statistics. Quizzes will be comprised of multiple choice questions be randomly selected from a large question bank so no two students will complete an identical quiz. **Quizzes will be available between 7pm and 9:30pm (Toronto time) on their scheduled date. Once started, students will have a specified period of time (i.e., not the full 2.5 hours) to**
complete the quiz but all quizzes will auto-submit at 9:30pm; students are advised to plan timing accordingly. More information about quizzes will be available on eClass.

Note: eClass outages or other internet-related disruptions during quizzes will not be considered the fault of the student and the instructor will make adjustments to deadlines as needed to accommodate any such issues.

Apply Its
Students will complete three (3) Apply Its throughout the course. These are brief low-stakes assignments (worth 5% each) that assess students’ ability to apply course content to new situations, contexts, or data, and scaffold skills required to complete larger course assignments.

Apply Its can be completed in pairs should students prefer a team approach. Apply Its will be due during a 4-day submission window (see schedule on page 9), students should treat the first day of this window as the deadline and the remaining 3 days as “bonus” time should it be needed. Completing Apply Its will usually require students to use the statistical software, jamovi. Students will receive feedback on Apply Its that will aid them in completing the larger summative assignments. Apply Its will be accessible through eClass and will be submitted using an application called Crowdmark. More information will be provided through eClass.

Assignments
Students will complete two summative assignments in this course. Assignments can be completed in pairs should students prefer a team approach. These assignments assess students’ conceptual understanding of course materials as well as their ability to apply knowledge through the conducting and interpreting of statistical analysis of data. Each assignment is cumulative and will require knowledge and skills developed throughout all preceding course modules. More information will be released about each assignment on eClass. Both assignments will be accessible through eClass and submitted through Crowdmark.

Note: Assignment instructions will be provided well in advance of deadlines. It is recommended that students start assignments early and work on them gradually throughout the course as they gain the knowledge to do so.

Class Format and Attendance Policy
Course content will be delivered through both pre-recorded videos posted on eClass which students will watch on their own time and through two live community meetings held each week on Mondays and Wednesdays at 7:00pm on Zoom. Community meetings will be spent on Q&A on course content and opportunities to apply course content through practice problems. These meetings are also the main opportunity for students to interact both with each other and the teaching team as a community. Attendance to these meetings is strongly recommended, but these sessions will be recorded in order to accommodate students who are truly unable to attend (i.e., International students residing in other time zones, those with conflicting
caregiving/parenting responsibilities). Recordings of all community meetings will be posted on eClass and will be available to all students throughout the entire semester.

**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 2020-21](#)

**Missed Quizzes, Late Apply Its and Late Assignments**

**Missed Quizzes**

For any missed quiz students MUST complete the Missed Quiz form found in the Communication & Contact Info folder on eClass. Failure to complete the form within 48 hours of the original quiz dates will result in a grade of 0 for the missed quiz. At this time, due to COVID-19 an Attending Physician’s Statement (APS) is not required, however, a reason or explanation for missing an evaluated component in the course must be provided.

Once you have notified us of a missed quiz a TA will contact you to schedule a make up quiz. If you miss your scheduled make up quiz, you must again completed the Missed Quiz form with a reason and the weighting will be redistributed across the remaining assessments in the relevant category.

**Late Apply Its**

Apply Its that are not submitted during the 4-day submission window will receive a grade of 0 and no extensions will be granted, except in extreme circumstances. Apply It deadlines each span a 4-day submission window, which acts as built-in extra time for their completion. This does not mean that the final day of a submission window is the actual deadline, rather, students should submit their Apply It at a time during the submission window that is most convenient for them.

Exceptions to this policy can be made for truly exceptional circumstances – should you think you have such a circumstance please email the instructor as soon as possible to discuss.

**Late Assignments**

Both assignments have a 2-day grace period where students can submit after the deadline at no penalty. Assignments submitted beyond this 2 day grace period will receive a 5% per day penalty up to a total of 3 days (i.e., up to 5 days after original due date). No assignments will be accepted 5 days beyond their due date; assignments more than 5 days late will receive a grade of 0.
Example: The deadline for Assignment 1 is May 28\textsuperscript{th} at 11:59pm. If additional time is needed (due to falling behind in the course, having a lot of deadlines around then, perfectionism, etc.), students can submit Assignment 1 with no late penalty until May 30\textsuperscript{th} at 11:59pm. Assignments submitted May 31\textsuperscript{st}, June 1\textsuperscript{st}, or June 2\textsuperscript{nd} will receive a 5\% per day late penalty (e.g., 5\%, 10\%, 15\% penalty, respectively). If a student has not submitted Assignment 1 by June 2\textsuperscript{nd} at 11:59pm they will receive a grade of 0.

This policy holds for all both assignments in this course and their respective deadlines.

Exceptions to this policy can be made for truly exceptional circumstances – should you think you have such a circumstance please email the instructor as soon as possible to discuss.

Add/Drop Deadlines

For a list of all important dates please refer to: Summer 2021 Important Dates

<table>
<thead>
<tr>
<th>Event</th>
<th>S1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last date to add a course without permission of instructor</td>
<td>14-May</td>
</tr>
<tr>
<td>Last date to add a course with permission of instructor</td>
<td>21-May</td>
</tr>
<tr>
<td>Last date to drop course without receiving a grade</td>
<td>07-Jun</td>
</tr>
<tr>
<td>Course Withdrawal Period (withdraw from course and receive a “W” on transcript – see Add and Drop Deadline Information below)</td>
<td>June 8-June 21</td>
</tr>
</tbody>
</table>

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.

Electronic Device Policy
This course will be delivered in an online format and therefore electronic devices (e.g., tablets, laptops) are permitted during class time for course-related purposes. It is expected that you would complete quizzes in a manner that does not include consulting an unauthorised source during the quiz.

Any sharing of screenshots and/or personal feedback received from completing course assessments will be considered a violation of the electronic device policy and there will be consequences for this behaviour. The unauthorized sharing of these details or any other course materials by any means (e.g., What’s App group, student forum, Reddit, Facebook group etc.) is strictly prohibited.

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.

This includes the sharing of screenshots and/or personal feedback received from completing course quizzes online. The sharing of these details by any means (e.g., What’s App group, Discord, SnapChat, Reddit, etc.) is strictly prohibited.

Course Group Chats

Participating in group chats other than the Student Forum on eClass (e.g., What’sApp, Discord, Reddit, SnapChat, etc.) in the interest of forming a course community that is solely for the students is permitted, but students should proceed with caution for the following reasons:

1. The professor, teaching assistants, department and York University overall have no jurisdiction over adverse behaviours (e.g., hacking, bullying, etc.) that may occur in these contexts. That means that it is difficult if not impossible for the professor to intervene if an unsafe situation arises. If such an event occurs, students are advised to shut down the group and form a new one. To reduce the risk of external individuals joining a course chat group please only share links to the group through private means
(i.e., don’t post the link publicly on Reddit) and share only with other members of PSYC2021A.

2. Participation in illicit activity (e.g., cheating) that occurs in such groups may put your academic integrity at risk. Sharing of answers or asking for an answer on a graded quiz through such a group chat is considered an act of academic dishonesty and is strictly prohibited. Any violations will be reported to the Department of Psychology and are subject to consequences (e.g., a failing grade on the assessment in question, a grade of 0 on the particular assessment, a failing grade in the course, etc.).

3. The sharing of screenshots of emails or answers provided by the professor or other members of the teaching team through emails is not permitted in course community group chats. All email communications between student and professor/teaching team are considered private and should not be shared without express permission from the professor/teaching team.

**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 PSYC2021A 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.
**Proposed Course Schedule** (subject to change)

<table>
<thead>
<tr>
<th>Week</th>
<th>Live Mtg Date</th>
<th>Topic</th>
<th>What’s due when?</th>
</tr>
</thead>
</table>
| 1    | May 10        | Course Overview  
eClass Orientation | Getting to Know You Survey  
May 12<sup>th</sup> @ 12 noon |
|      | May 12        | Introduction to Statistics  
Intro to jamovi (in Zoom meeting) |  |
| 2    | May 17        | Examining Data: Tables & Figures |  |
|      | May 19        | Measures of Central Tendency &  
Variability | Apply It 1 (May 20 – 23) |
|      | May 24        | Victoria Day – NO CLASS |  |
| 3    | May 26        | z-scores & the Normal Distribution |  |
|      | **May 28**    | **ASSIGNMENT 1 DUE MAY** |  |
| 4    | May 31        | Quiz 1 *(NO LIVE MEETING)* | Apply It 2 (June 3 – 6) |
|      | June 2        | Probability & Intro to Hypothesis Testing |  |
| 5    | June 7        | Errors in Hypothesis Testing,  
Statistical Power, & Effect Size |  |
|      | June 9        | One-sample t-test |  |
| 6    | June 14       | Correlation |  |
|      | June 16       | Chi-square Statistic: Tests for  
Goodness of Fit & Independence | Apply It 3 (June 17 – 20) |
| 6+   | June 21       | Quiz 2 *(NO LIVE MEETING)* |  |
|      | **JUNE 25**   | **ASSIGNMENT 2 DUE** |  |