PSY201S LEC5101: Statistics I

Summer 2022 Tuesdays & Thursday 6:00PM – 9:00PM EST ROOM: LM 159

Contact Information

Instructor:	Natalia Ladyka-Wojcik, M.A.
Office:	100 St. George Street, Sidney Smith Hall Room 523 (basement)
Office Hours:	*By appointment only (in-person or Zoom):* https://calendly.com/nladyka/office-hours
Teaching Assistants:	Xiao Min Chang, Eric Cui (he/him), Charlotte Leferink (she/her), Mateja Perovic, Dory Xie (she/her), Ariana Youm (she/her)
Email*:	psy201.summer2022@gmail.com *Please include "PSY201" in the subject line for all emails**
Course Website:	Quercus (http://q.utoronto.ca)

**Email is only to be used for emergencies or discussing personal circumstances. Please use the Quercus Discussion Board for questions about course content.*

Course Description

Statistics is the science of collecting, analyzing, interpreting, and presenting data. Although it is possible to memorize the different core concepts in psychology without knowing statistics, a fundamental knowledge of statistics is imperative to evaluate psychology though a critical lens. This knowledge will also allow you recognize and evaluate different statistical claims in your everyday life. The goal of this course is to provide you with the fundamentals of descriptive and inferential statistics to better understand, assess, and apply different statistical arguments.

We will have 3 hours of in-person lecture every Tuesday and Thursday at 6PM EST. Lectures will be recorded and made available for asynchronous viewing each week. Despite this, we will be following quite a tight schedule. We will be covering a wide range of difficult material with many concepts building upon each other. This means that it is critical to stay on pace to succeed in this course.

Prerequisites: PSY100H1/ PSY100Y5/(PSYA01H3 + PSYA02H3)

Recommended Preparation: Grade 12 Calculus

Exclusion: ECO220Y1/ EEB225H1/ GGR270H1/ POL222H1/ SOC202H1/ STA220H1/ STA238H1/ STA248H1/ STA288H1/ PSY201H5/ STA215H5/ STA220H5/ PSYB07H3/ STAB22H3/ STAB23H3/ STAB57H3

It is your responsibility to ensure that you have met **all prerequisites listed in the Psychology section of the A&S Calendar for this course. If you lack any prerequisites, you WILL BE REMOVED from the course. No waivers will be granted.*

What will you learn?

By the end of this course, you should be able to:

1) **Interpret basic statistical results**
   a. Define key statistical terms, research method terms, and research designs
   b. Calculate and interpret different measures of central tendency and variability
   c. Interpret data displayed as statistics, figures, and tables
2) **Apply appropriate statistical and research methods to collect, analyze, interpret, and report research findings to test hypotheses**
   a. Know how to formulate a hypothesis
   b. Apply and identify appropriate research designs to tests given a certain hypothesis or set of data
   c. Select and implement appropriate statistical tests to solve a given research problem or hypothesis
   d. Produce and interpret reports of statistical analyses in APA format
   e. Effectively communicate the results and meaning of statistical information to different audiences (e.g., layperson, scientists, etc.)
3) **Evaluate the public presentation of statistics**
   a. Recognize when statistics are presented in an inaccurate or misleading way (whether intentional or not)
   b. Assess the validity of statistical conclusions in popular science reporting (e.g., blogs, newspapers, etc.)
   c. Understand the limitations of hypothesis testing and identify some of the remedies recommended by the field
   d. Understand the potential ethical implications of using statistics inappropriately
   e. Understand the subjectivity involved in research, including the decisions that researchers must make when analyzing data and reporting results

Who is your instructor?

Natalia Ladyka-Wojcik (natalia.ladyka.wojcik@mail.utoronto.ca)
Office Hours by Appointment Only (https://calendly.com/nladyka/office-hours)

My name is Natalia Ladyka-Wojcik and I am currently a PhD Candidate studying cognitive neuroscience at the University of Toronto, broadly studying how memory works and how we can mitigate memory loss in aging (please don't hesitate to ask me about it!). As such, most of my time is spent reading research from others, designing studies, collecting and analyzing data, and disseminating findings – all of these steps involve a thorough understanding of the statistical concepts that we will learn during this course.

Who are your teaching assistants?

We have an amazing team of teaching assistant who are all happy to help support your learning during this course. To ask general concept questions for your TA team, please use the **Quercus Discussion Board**. Otherwise, if you need to review more specific course content and assessments, or you need studying advice, you can reach your TA team via email at **psy201.summer2022@gmail.com.** For all forms of communication, please use proper punctuation, spelling, grammar, complete sentences, etc. When emailing myself or the TAs, please include "PSY201" in the subject line. We will try our best to respond to all emails and Quercus posts within **2 business days*** — responses may be delayed during especially busy times, so I recommend going over the syllabus, website, and Discussion Board to see if your question has already been answered. ***with the exception of the Term Tests Q&A "Hotline".

Xiao Min Chang	**Charlotte Leferink**	**Mateja Perovic**
Eric Cui	**Ariana Youm**	**Dory Xie**

Course Materials

Textbook (required): Gravetter, F.J., Wallnau, L.B., Forzano, L.B., Witnauer, J.E. (2019). *Essentials of Statistics for the Behavioral Sciences* (10th Ed.) Boston: MA: Cengage Learning. ISBN: 9780357365298

MindTap® Psychology (required): ISBN: 9780357035542
I encourage you to shop around for the best price, but a special UofT price is available at our bookstore. You can purchase the electronic version of our textbook and MindTap® directly from the University of Toronto Bookstore at
https://www.campusebookstore.com/integration/AccessCodes/default.aspx?permalinkId=95013c20-3e69-431f-8862-1cafca37b710frame=YES&t=permalink&sid=rgpgrr45jwir2va2b0vlfv55

Our course's MindTap® page can be accessed at **https://login.nelsonbrain.com/course/MTPN5HTZ5WS0**. In addition, the MindTap® subscription comes with 12 months of access, so this is something to consider if you are taking PSY202 in the upcoming year.

How will this course be structured?

In-person lectures: We will be meeting in-person every Tuesday and Thursday at 6PM EST in LM 159. Although I strongly encourage attending and participating in-person, I am mindful that the impact of the Covid-19 pandemic is still an ongoing reality for many students. As such, I will do my best to record lectures and post them on a weekly-basis for asynchronous viewing on Quercus.

Textbook Readings: The textbook is used to supplement the content that is covered in class. Assigned chapters will review or expand on concepts we cover during the online lectures — there may also be important topics that are not covered in class. To get the most out of this class, I suggest completing all lectures before online lectures are posted. You will be responsible for assigned chapters for all tests.

Term Tests Q&A "Hotline": The day before each term test and final assessment (see "How will I be evaluated in this course" below), your instructor will host a term test Q&A "hotline" on Quercus. I will be available to respond to content-related questions posted on Quercus **up until 11:00 PM EST** the evening before each term test and final assessment**.** This is not an invitation to leave studying to the last minute, it is simply an opportunity for any final lingering questions that you may have encountered during material review.

How will I be evaluated in this course?

Evaluation	Weight	Due Date
MindTap Problem sets	5%	Weekly on Mondays at 11:59 PM EST
Statistical Literacy Final Project	20%	Thursday, Aug. 11th at 11:59PM EST
Term Test 1	22.5%	Friday July 22nd at 6:00PM EST
Term Test 2	22.5%	Friday, Aug. 5th at 6:00PM EST
Final Assessment	30%	24 hours after start date (TBA)

Problem Sets - 5%
Using MindTap®, you will complete problem sets for each of the assigned chapters to practice the concepts covered in the course. Problem sets will be due each week on Monday at 11:59PM EST. Problem sets submitted after the deadline (even by a few minutes) will be given a 0. Extensions for technical difficulties will only be given in the case of a system-wide error, so please plan accordingly. The lowest score from your problem sets will be dropped when computing your final grade.

Statistical Literacy Final Project - 20%
The statistical concepts that we learned in class are seen everywhere in our day-to-day lives. This project is designed as an opportunity to apply what we've learned in class to assess the statistical claims in popular science reporting. More details for this assignment will be provided later on in the term.

Tests - 75%
There will be a total of 2 term tests (worth 22.5% each) and a final assessment (worth 30%). Each of these tests are cumulative and will consist of multiple choice, short answer, and long answer questions covering all the lecture and textbook material up to the date of the test. The questions are designed to not only test your knowledge of the course material, but also your ability to apply the concepts in novel situations. Tests will be available to start on Quercus for 24 hours starting from class time (Thursday at 6PM EST). These tests will be both open-book and untimed — this does not mean open-classmate, open-Google, etc. These are individual assignments and you are expected to follow the University of Toronto's Code of Behaviour on Academic Matters (httD://www.qoverningcouncil.utoronto.ca/Dolicies/behaveac.htm).

The TAs and I will be available for contact via email from 6PM-9PM EST the day of and 9AM-12PM EST the day after the test has started — email response may not be as quick outside this time.

Course Schedule

Week	Day	Date	Topic	Readings	Assignment
1	T	July 5	Introductions, Variables, & Measurement	Ch. 1	
	R	July 7	Frequency Distributions & Data Visualization	Ch. 2	Syllabus Quiz (ungraded)
2	T	July 12	Central Tendency & Variability	Ch. 3 & 4	Ch. 1 - 2 Problem Sets July 11th, 11:59PM EST
	R	July 14	z-scores & Probability	Ch. 5 & 6	
3	T	July 19	The Normal Distribution & Sampling Distributions	Ch. 6 & 7	Ch. 3 - 5 Problem Sets July 18th, 11:59PM EST
	R	July 21	**Term Test 1 Available**		**Term Test 1 Due July 22nd, 6:00PM EST**
4	T	July 26	Introduction to Hypothesis Testing	Ch. 8	Ch. 6 - 7 Problem Sets July 25th, 11:59PM EST
	R	July 28	The t-statistic (part I)	Ch. 9	*Optional* Final Project approval July 27th, 11:59 PM EST
5	T	Aug. 2	The t-statistic (part II)	Ch. 10 & 11	Ch. 8 - 9 Problem Sets Aug. 1st, 11:59PM EST
	R	Aug 4	**Term Test 2 Available**		**Term Test 2 Due Aug. 5th, 6:00PM EST**
6	T	Aug. 9	One-way ANOVA	Ch. 12	Ch. 10 - 11 Problem Sets Aug. 8th, 11:59 PM EST
	R	Aug. 11	Correlations & Regressions	Ch. 14	**Final Project Due Aug. 11th, 11:59PM EST**
7		TBA	**Final Assessment**		**Final Assessment Due 24 hours after start date**

Course Policies

Academic Dishonesty and Plagiarism

Academic integrity will be taken seriously in this course. In accordance with the University of Toronto's Code of Behaviour on Academic Matters, the following are offences:

- Submitting the work of another (whether in part or in whole) as your own
- Possessing prohibited materials while writing tests
- Providing or receiving assistance from another student unless explicitly permitted
- Falsifying or altering any documentation required by the University (e.g., doctors' notes).

Learn more about how to cite and use source material appropriately and for other writing support, see the U of T writing support website at http://writing.utoronto.ca/. Consult the Code of Behaviour on Academic Matters for a complete outline of the University's policy and expectations. For more information, please see http://www.artsci.utoronto.ca/osai and https://www.academicintegrity.utoronto.ca/. **Unless explicitly stated, all homework, writing, and assessments submitted for a grade for this class must be done independently.**

University's Plagiarism Detection Tool

Students will be required to submit their assignments to the University's plagiarism detection tool for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their assignments to be included as source documents in the tool's reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of this tool are described on the Centre for Teaching Support & Innovation website: https://uoft.me/pdt-faq

Grade Dispute Policy

If you believe that your assignment was graded unfairly, please first wait for at least 24 hours following the return of the assignment before contacting us. Then, contact the TA team **within 2 weeks** following the 24 hour period with details on where you think something was overlooked to set up a meeting to review your assignment.

If you still feel your assignment was graded unfairly following this meeting, you can email me a short paragraph detailing your grade concern to request a regrade. Grade disputes are **not** to be directed to your TAs. Keep in mind that the regrade is *final* and your mark could go up, down, or stay the same.

Negotiations for extra marks once final grades are in will not be tolerated. Arbitrary requests for grade increases will not be entertained (e.g., "I need to get into grad school, so could you please change my grade from a B+ to an A-?"). If I did this for one person, I would need to do it for everyone in the class. Please do not ask for special treatment – it is unfair to your classmates.

Quercus

This course uses the University's learning management system, Quercus, to post information about the course. This includes posting readings and other materials required to complete class activities and course assignments, as well as sharing important announcements and updates. The site is dynamic and new information and resources will be posted regularly as we move through the term, so please make it a habit to log in to the site on a regular, even daily, basis. To access the course website, go to the U of T Quercus log-in page at https://q.utoronto.ca. Once you have logged in to Quercus using your UTORid and password, you should see the link or 'card' for PSY201 Statistics I.

Note about grades posted on Quercus: Please also note that any grades posted are for your information only, so you can view and track your progress through the course. No grades are considered official, including any posted in Quercus at any point in the term, until they have been formally approved and posted on ROSI at the end of the course. Please contact me as soon as possible if you think there is an error in any grade posted on Quercus.

Asking Questions

The Quercus Discussion Board is the appropriate place to ask all course content questions. For course policy/deadline/grading questions, please only ask your question after you have double-checked the syllabus and Quercus for the answer to your question. Email should only be used for emergency situations or to discuss personal circumstances. Your TA and I will make every effort to respond to questions posted to the Discussion board within one business day, except for evenings, holidays, and weekends – so plan ahead! The only exception to this will be the Term Test Hotlines.

Course Materials

Course materials are provided for the exclusive use of enrolled students. Do not share them with others. I do not want to discover that a student has put any of my materials into the public domain, has sold my materials, or has given my materials to a person or company that is using them to earn money. **This includes all course recordings**. The University will support me in asserting and pursuing my rights, and my copyrights, in such matters.

Missed Test Policy

I expect students to make every effort to take required exams. There will be no make-up exams. If you miss a term test, you will receive a 0 unless acceptable documentation (i.e., ACORN absence declaration tool) is provided **within one week of the missed test date** (barring any extraordinary circumstances). In this case, your other tests will be reweighted to make up the missing part of your grade. If you miss one term test, for example, your other term test and the final assessment will be reweighted, with the term test weighted at 30% and your final assessment at 45%. If you miss both tests, your final assessment will be weighted at 75%. Students who miss final examinations should file a petition for a deferred exam with their College Registrar's Office.

Penalties for Lateness

MindTap problem sets submitted after the deadline (even by a few minutes) will be given a 0. Your first 0 will count as your lowest grade, which will be dropped from your overall grade. However, subsequent 0s will be part of your grade.

Late assignments (not including tests) will be penalized by 5% per day, for up to 3 days. Assignments will NOT be accepted after 3 days – you will receive an automatic 0 on these assignments.

Appropriate documentation is required in all emergency situations. Extensions will only be granted for rare circumstances and will only be accepted with the appropriate documentation. , Please email me as soon as possible in the case of extraordinary circumstances to discuss these on a case-by-case basis.

Religious Accommodation

As a student at the University of Toronto, you are part of a diverse community that welcomes and includes students and faculty from a wide range of backgrounds, cultural traditions, and spiritual beliefs. For my part, I will make every reasonable effort to avoid scheduling tests, examinations, or other compulsory activities on religious holy days not captured by statutory holidays. Further to University Policy, if you anticipate being absent from class or missing a major course activity (like a test, or in-class assignment) due to a religious observance, please let me know as early in the course as possible, and with sufficient notice (at least two to three weeks), so that we can work together to make alternate arrangements.

Resources

Accessibility Needs

Students with diverse learning styles and needs are welcome in this course. If you have an acute or ongoing disability issue or accommodation need, you should register with Accessibility Services (AS) (www.accessibility.utoronto.ca) at the beginning of the academic year. Without registration, you will not be able to verify your situation with your instructors, and instructors will not be advised about your accommodation needs. AS will assess your medical situation, develop an accommodation plan with you, and support you in requesting accommodation for your course work. Remember that the process of accommodation is private: AS will not share details of your condition with any instructor, and your instructors will not reveal that you are registered with AS. **Please note:** Because I believe that accessibility is an issue that should be addressed broadly, not only for specific individuals with appropriate documentation, I have tried my best to design a flexible course where every learner's needs can be met. For example, everyone may miss one MindTap Problem Set without any explanation required. Of course, if you have specific needs that have not been met by default in the design or format of the course, simply let me know (e.g., via your accommodation letter) and I will make sure it is taken care of. If you have any concerns about your ability to learn in this course, please just let me know.

Mental Health and Well-Being

As a student, you may experience challenges that can interfere with learning, such as strained relationships, increased anxiety, substance use, feeling down, difficulty concentrating and/or lack of motivation, financial concerns, family worries and so forth. These factors may affect your academic performance and/or reduce your ability to participate fully in daily activities. All of us benefit from support and guidance during times of struggle; there is no shame in needing help or in asking for help. There are many helpful resources available through your college Registrar or through Student Life (studentlife.utoronto.ca and studentlife.utoronto.ca/feeling-distressed). An important part of the University experience is learning how and when to ask for help. Please take the time to inform yourself of available resources and do not hesitate to seek assistance from your Teaching Assistant or from me to help learn what supports are available.

Ongoing COVID-19 considerations: I acknowledge that we continue to face challenges related to the Covid-19 global pandemic. As we transition back to in-person classes, I understand that attending lectures on campus after an extended period of remote learning may mean significant adjustments for students. Please speak to me if you have any concerns.

Other Resources

Student Life Programs and Services (http://www.studentlife.utoronto.ca/)
Academic Success Services (http://www.studentlife.utoronto.ca/asc)
Counselling and Psychological Services (http://www.studentlife.utoronto.ca/hwc)