

PSY201H1F-L0101 - Statistics I

May/June 2022

Course Format: Online asynchronous

Course Website: Quercus (<https://q.utoronto.ca>)

Instructor: Rebekah Reuben (rebekah.reuben@mail.utoronto.ca); Pronouns: She/Her

Teaching Assistants:

Nichole Bouffard Stephanie Simpson

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Course Email: psy201.mayjune2022@gmail.com

Office Hours by Appointment:

For TAs: By appointment; Calendly links to schedule posted on Quercus.

For Rebekah: <https://calendly.com/rebekah-reuben/15-min> to schedule; held on [Zoom](#)
(Password: PSY201)

Prerequisite: 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

Please ensure that you meet these criteria – if you lack the prerequisites, you will be removed from the course and no waivers will be granted. Please refer to the Psychology section in the University of Toronto Faculty of Arts and Science Calendar for more details.

Course Materials (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, ISBN: 9780357655467 ***URL and Course Key to be posted on Quercus**

About the course materials: A special U of T price is available at our bookstore—MindTap® alone (which includes an ebook of the text) can be purchased for \$64.95, while MindTap® with a paperback version of the text can be purchased for \$134.95. Additionally, purchasing through the bookstore comes with 2 terms of access, which is useful if you are planning on taking PSY202 as well! The link to purchase the MindTap® access code with ebook from the U of T bookstore is [here](#).

Course Description

Statistics is the science of collecting, analyzing, interpreting, and presenting data. A fundamental knowledge of statistics is needed to practice and evaluate research through a critical lens. This knowledge will also allow you to 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.

Learning Objectives

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. Calculate and interpret measures of statistical and practical significance
 - e. Produce and interpret reports of statistical analyses in APA format
 - f. 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

Course Structure

Lectures

This course will be fully online – you will need access to a reliable computer and internet connection. New modules containing video lectures will be released on Tuesdays and Thursdays at 9AM ET. These will be available asynchronously, so you will be able to watch them at anytime.

We will introduce and discuss important concepts of the course and their real-world applications and 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. I strongly encourage you to take notes while watching the lecture videos and ask any questions you have to clarify and expand on the material covered. The TAs and I will also be available to answer any questions you have about content covered outside of lectures via email or office hours.

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 lectures – there may also be important topics that are not covered in class. You will be responsible for assigned chapters for all tests.

Independent Practice with MindTap®

Regular practice of the concepts learned in the class will be critical to succeed in this class. MindTap® was selected for this class because it provides multiple research-based methods of review to support you through this course. Only the Problem Sets will be completed for a grade in this course, but the remaining types of activities (Mastery Training, End of Chapter Problems, Exam Reviews) are recommended for extended practice.

Course Communication

I encourage you to communicate openly—whether you want to clarify concepts you might not understand, further explore topics you are interested in, have questions about the real-world application of statistics, or have questions about grading.

Most general questions related to course content, policies, or assessments should first be posted to the Quercus Discussion Board – this will help you, but also many of your

classmates who might have the same question! You are encouraged to both ask and respond to questions on the Discussion Board. The TAs and I will be monitoring the board as well.

You can also sign up for office hours with the TAs at their Calendly links above. The TAs can help you to review content, get study advice, or if you have questions about grading. You may also sign up for office hours with me to discuss course content at my Calendly link above.

All questions about the course via email should be directed to the course email (psy201.mayjune2022@gmail.com). However, for issues regarding verification of illness or accessibility concerns you may email me at my personal email: rebekah.reuben@mail.utoronto.ca.

When emailing, please include “PSY201” in the subject line. This will help make sure that your email doesn’t accidentally get lost in our inboxes. We will try our best to respond to all emails within 2 business days – responses may be delayed during busy times, so I recommend going over the syllabus, website, and Discussion Board first to see if your question has already been answered.

Course Assessments

Problem Sets – 10%

Using MindTap®, you will complete problem sets for each of the assigned chapters. practice the concepts covered in the course. Problem sets will be due each week on Sunday by 11:59pm. The problem sets are set up for three possible attempts and your grade will be calculated as the average of the attempts. The lowest two scores from your problem sets will be dropped when computing your final grade.

Statistical Literacy Assignment – 15%

The statistical concepts we learn 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 real-world concepts and build your statistical literacy. You will be given the opportunity to choose a popular news article related to psychology and describe the statistical approach you would take to support a claim from the article. Further details about this assignment will be provided later in the course.

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/computation 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.

These exams will be open book, but all assessments are to be completed individually, and you are expected to follow the University of Toronto's Code of Behaviour on Academic Matters (<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>). You will have a roughly one-day window to complete each test, and you can complete the test any time within the testing window. The tests will be untimed but should take approximately three hours to complete.

Course Schedule

Week	Date	Topic	Readings	Assignments
1	Tues, May 10 th	Lec 1: Introductions, Variables & Measurement	Ch. 1	
	Thurs, May 12 th	Lec 2: Frequency Distributions & Data Visualization	Ch. 2	Ch. 1-2 Problem Sets Due Mon May 16 th at 11:59pm
2	Tues, May 17 th	Lec 3: Central Tendency & Variability	Ch. 3-4	
	Thurs, May 19 th	Lec 4: z-scores, Probability & Normal Distribution	Ch. 5-6	Ch.3-6 Problem Sets Due Mon May 23 rd at 11:59pm
3	Tues, May 24 th	Term Test 1 will be posted Tues May 24 th at 9am and will be due Tues May 24 th at 11:59pm		
	Thurs, May 26 th	Lec 5: Sampling & Intro to Hypothesis Testing	Ch. 7-8	Ch. 7-8 Problems Sets Due Mon May 30 th at 11:59pm
4	Tues, May 31 st	Lec 6: Hypothesis Testing with the t-statistic	Ch. 9	
	Thurs, June 2 nd	Lec 7: T-tests with Two Samples	Ch. 10-11	Ch. 9-11 Problems Sets Due Mon June 6 th at 11:59pm
5	Tues, June 7 th	Last Day to Drop F Courses Mon June 6 th Term Test 2 will be posted on Tues June 7 th at 9am and due on Tues June 7 th at 11:59pm		
	Thurs, June 9 th	Lec 8: One-way ANOVA	Ch. 12	Ch. 12 Problem Set Due Mon June 13 th at 11:59pm

6	Tues, June 14 th	Lec 9: Correlations and Regressions	Ch. 14	Ch. 14 Problem Set Due Mon June 20 th at 11:59pm
	Thurs, June 16 th	Statistical Literacy Assignment due Thurs, June 16 th at 11:59pm		
Finals	June 22 nd – 29 th	Final Assessment will be posted on Wed, June 22 nd at 9am and due on Wed June 22 nd at 11:59pm		

Course Policies and Resources

Academic Misconduct Policy

All students, faculty and staff are expected to follow the University's guidelines and policies on academic integrity. For students, this means following the standards of academic honesty when writing assignments, collaborating with fellow students, and writing tests and exams. Ensure that the work you submit for grading represents your own honest efforts. Plagiarism—representing someone else's work as your own (whether in part or in whole) or submitting work that you have previously submitted for marks in another class or program—is a serious offence that can result in sanctions. Additional serious academic offenses include possessing prohibited materials while writing tests and providing or receiving assistance from another student unless explicitly permitted to do so. **Unless explicitly stated, all homework, writing, and assessments submitted for a grade for this class must be done independently.** Speak to me or your TAs for advice on anything that you find unclear.

To 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://www.writing.utoronto.ca>. Consult the Code of Behaviour on Academic Matters for a complete outline of the University's policy and expectations (<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>). For more information, please see <https://www.artsci.utoronto.ca/current/academicadvising-and-support/student-academicintegrity> and <http://academicintegrity.utoronto.ca>.

Any suspected cases of academic dishonesty will be investigated following the procedures outlined in the University of Toronto's Code of Behaviour on Academic Matters (<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>). If you have any questions or concerns regarding academic integrity, it is *your responsibility* to seek out the proper information either from the course instructor or other institutional resources (see www.utoronto.ca/academicintegrity/resourcesforstudents.html).

Normally, students will be required to submit their course essays 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 essays 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 web site (<https://uoft.me/pdt-faq>).

Missed Test Policy

If you miss a term test or require a short extension, you must submit acceptable documentation (e.g. absence declaration, registrar's letter, etc.) within a 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, your other term test and the final exam will be reweighted, with the term test weighted at 25% and your final assessment at 50%. If you miss both tests, your final exam will be weighted at 75%. Makeup exams will not be issued—if you do not submit the appropriate documentation, you will receive a 0 on your missed test.

Late and Extension Policy

In order to provide some flexibility for minor illness, technological difficulties, outside obligations, and other extenuating circumstances, you will be given two 48-hour late tickets to extend any single assignment deadline other than tests (i.e., Problem Sets and the Statistical Literacy Assignment). These can be used no questions asked and no documentation necessary. Use them wisely, as once they're gone, there will be no further opportunities for extensions.

To use a ticket, send a message to the course email (psy201.spring2022@gmail.com) before the time of the original assignment deadline to indicate your intent to use a late ticket, and then submit the assignment in the usual way no later than 48 hours past the deadline. In addition, the lowest two Problem Sets will be dropped automatically at the end of the course.

Otherwise, late assignments will not be accepted – you will receive a 0 without the proper use of a 48-hour late ticket, registered accommodations, or extraordinary circumstances. Extraordinary circumstances extensions will be granted rarely and will only be accepted with accompanying documentation. Please email me within 12 hours (or as soon as possible) after the missed deadline before an assignment is due to discuss an extension.

Grading 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. Any grade concerns must be raised within 14 days of the return of the assignment.

Contact the TA who graded your assignment with specific details on where you think something was overlooked to discuss reviewing your assignment. This may be able to be resolved via email, or you may decide to set up a meeting to discuss in more detail.

If you still feel as if your assignment was graded unfairly following a meeting with the TA, 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. Only reasonable and well-justified concerns will be considered, and by submitting a request you are consenting to a full regrade of the assignment. Keep in mind that the regrade is final and your mark could go up, go down, or stay the same.

Audio Recording and Lecture Materials Usage Policy

Materials provided by me and the TAs (including, but not limited to, the syllabus, lecture slides, handouts, recordings, etc.) are to be used by yourself and the other class members only. They are not to be posted in any public access forum (i.e. online or on a shared server), shared with others not enrolled in this course, or otherwise distributed without explicit permission from your instructor. Students are not permitted to record or distribute live office hours or review sessions.

Live review sessions in this course, including your participation, will be recorded on video and will be available to students in the course for viewing remotely and after each session. Course videos and materials belong to your instructor, the University, and/or other sources depending on the specific facts of each situation and are protected by copyright. In this course, you are permitted to download session videos and materials for your own academic use, but you should not copy, share, or use them for any other purpose without the explicit permission of the instructor. For questions about the recording and use of videos in which you appear, please contact your instructor.

Lectures, slides, and recordings are the intellectual property of the instructor, and non-compliance with these terms violates an instructor's intellectual property rights and the Canadian Copyright Act. Students violating this agreement will be subject to disciplinary actions under the Code of Student Conduct. Specifically, 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. The University will support me in asserting and pursuing my rights, and my copyrights, in

such matters.

Religious Accommodations

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 cultural and religious traditions. 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 (such as 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.

Students with Disabilities or Accommodation Requirements

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) at the beginning of the academic year by visiting <http://www.studentlife.utoronto.ca/as/new-registration>. 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 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 needs or condition with any instructor, and your instructors will not reveal that you are registered with AS.

Verification of Illness

For this term, a Verification of Illness (also known as a "doctor's note") is temporarily not required. Students who are absent from academic participation for any reason (e.g., COVID, cold, flu and other illness or injury, family situation) and who require consideration for missed academic work should report their absence through the online absence declaration. The declaration is available on ACORN under the Profile and Settings menu. Students should also advise their instructor of their absence.

If an absence extends beyond 14 consecutive days, or if you have a non-medical personal situation preventing you from completing your academic work, you should connect with your College Registrar. They can provide advice and assistance reaching out to instructors on your behalf. If you get a concussion, break your hand, or suffer some other acute injury, you should register with Accessibility Services as soon as possible.

Accommodation for Personal Reasons

There may be times when you are unable to complete course work on time due to nonmedical reasons and require accommodations beyond what the general course flexibility policies cover. If you have concerns, speak to me or to an advisor in your College Registrar's office; they can help you to decide if you want to request an extension or accommodation. They may be able to provide you with a College Registrar's letter of support to give to your instructors, and importantly, connect you with other resources on campus for help with your situation.

Equity, Diversity and Inclusion

The University of Toronto is committed to equity, human rights and respect for diversity. All members of the learning environment in this course should strive to create an atmosphere of mutual respect where all members of our community can express themselves, engage with each other, and respect one another's differences. U of T does not condone discrimination or harassment against any persons or communities.

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. Everyone feels stressed now and then – it is a normal part of university life. Some days are better than others, and there is no wrong time to reach out. 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. There are resources for every situation and every level of stress. There are many helpful resources available through your College Registrar or through Student Life (<http://studentlife.utoronto.ca> and <http://www.studentlife.utoronto.ca/feelingdistressed>).

Academic Success Centre

“Academic Success professional staff are dedicated to helping you reach your highest learning potential. Every student is capable of achieving academic excellence, but not all learning takes place in the classroom, and not everyone learns in the same way. Your life is more complex than your academic responsibilities, so [they] look at the whole picture and take an individualized approach to supporting you. [They] know there is no ‘right’ way to get through university, and [they] welcome the opportunity to explore strategies that might help you find greater balance between life and learning.” Check out their study spaces, attend a workshop or meet with a learning strategist here: <https://www.studentlife.utoronto.ca/asc/about-us>

English Language Resources

For anyone who would like to advance their understanding and command of English, there are many supports available at the University of Toronto. Two examples are: <http://www.artsci.utoronto.ca/current/advising/ell/resources-for-students> and <http://www.writing.utoronto.ca/advice/further-resources/online-esl-resources>. Your College Registrar will also be able to direct you to other resources.

Writing Support

As a student at the University of Toronto, you are expected to develop strong writing skills (even in a statistics class!) The university provides its students with a number of resources to help them achieve this. For more information on campus writing centres and writing courses, please check in with your College Registrar or visit <http://www.writing.utoronto.ca/>

Recognized Study Groups

I encourage everyone to strongly consider joining or leading a study group. The Faculty of Arts and Science has a Recognized Study Groups (now fully online!) program that can help you facilitate this (particularly useful if you don't know anyone else in the class!). If you become a study group leader, you can also receive co-curricular credit. To learn more about the program and join or start a study group visit: <https://sidneysmithcommons.artsci.utoronto.ca/recognized-study-groups/>

Meet To Complete (MTC) Program

New this year, Meet to Complete online drop-in sessions allow students across academic disciplines to work alongside peers to support motivation and community, set goals with the support of a student staff member, and earn a CCR credit after participating in 6 MTC sessions. Learn more by visiting: <https://sidneysmithcommons.artsci.utoronto.ca/meet-to-complete/>