

PSYB07: DATA ANALYSIS IN PSYCHOLOGY UNIVERSITY OF TORONTO SCARBOROUGH

FALL 2020 SYLLABUS – ONLINE

Instructor: Olivia Podolak Lewandowska, PhD

Email: olivia.podolak@mail.utoronto.ca

Office Hours: Thursdays from 11 a.m. – 12 p.m.

Lectures: Live on Tuesdays from 2 – 5 p.m. on Bb Collaborate (Lectures will be recorded).

| Teaching Assistants | Email | Tutorial Time |
|----------------------|--|---------------|
| Greg Depow | greg.depow@mail.utoronto.ca | TBA |
| Lawrence Guo | linn.guo@mail.utoronto.ca | TBA |
| Nayani Ramakrishnan | nayani.ramakrishnan@mail.utoronto.ca | TBA |
| Marco Sama | marco.sama@mail.utoronto.ca | TBA |
| Dilakshan Srikanthan | dilakshan.srikanthan@mail.utoronto.ca | TBA |
| Vignash Tharmaratnam | vignash.tharmaratnam@mail.utoronto.ca | TBA |

Note: Lectures and tutorials will begin 10 minutes after the hour on Bb Collaborate.

Please use your university email for all contact with the instructor and TAs. **Please include the course code in your email subject, as both PSYB07 and PSYC09 are being taught this semester.**

Course Description, Prerequisites & Objectives

From the UTSC Course Calendar: This course focuses on the fundamentals of the theory and the application of statistical procedures used in research in the field of psychology. Topics will range from descriptive statistics to simple tests of significance, such as chi-squared tests, t-tests, and one-way analyses of variance (ANOVA). A working knowledge of algebra is assumed. Students in the Specialist programs in Psychology, Psycholinguistics or Neuroscience will be given priority for this course.

Exclusion: ANTC35H3, MGE11H3/(ECMB11H3), MGE12H3/(ECMB12H3), PSY201H, (SOCB06H3), STAB22H3, STAB23H3, STAB52H3, STA220H, STA221H, STA250H, STA257H

Breadth Requirements: Quantitative Reasoning

Note: It is the student's responsibility to check whether they have completed the prerequisites for this course. If you have an issue with your prerequisites or if you have any further questions, please contact the instructor and/or the administrative staff within the Department of Psychology.

Course Objectives

Statistics are utilized in most (if not all) fields of research, and beyond. This widespread application of statistics makes it imperative for you to possess the knowledge to be successful in your professional career, and generally a

good consumer of statistical information. Additionally, in this class, you will learn how to conduct various statistical analyses, apply them to various research designs, and report them according to the guidelines set by the American Psychological Association.

Required Course Textbook

Bors, D. (2018). *Data analysis for the social sciences: Integrating theory and practice*. London, UK: SAGE Publications Ltd.

Note: Hardcopies of the textbook can be acquired at the University Bookstore. Electronic copies can be acquired on Amazon Kindle and Google Play.

It is expected that students read the textbook to enhance their learning and understanding of the course content, as it delves into important theories, concepts and calculations in greater detail than can be fit into lecture. Moreover, the textbook contains an abundance of practice questions, challenge questions, recommended readings, as well as complementary interactive demonstrations online that help illustrate various topics covered in this course.

Interactive Demos & Practice Questions: <https://study.sagepub.com/bors>

Course Webpage

Quercus will contain important course-related announcements, lecture slides (to be posted prior to each lecture), tutorial slides, lecture recordings, practice questions, and course marks. **You must check Quercus regularly for course updates.**

Lectures

Lectures will be live-streamed on Tuesdays from 2 – 5 p.m. via Bb Collaborate, and recorded for students who cannot make it to the live-stream. It is **strongly encouraged** that you attend the live-stream of the lecture because it will be more engaging and interactive than watching a recorded lecture only. There is also a (albeit very small) chance that the recording might not work due to issues with technology. Most importantly, attending a regularly-scheduled lecture can provide structure to your studies and can help reduce procrastination, which can be catastrophic for a cumulative course like statistics.

Tutorials

While attending tutorials is not mandatory for this course, it is **strongly encouraged** that students attend tutorials regularly in order to further their understanding of the material being taught in lecture. Tutorials will only be recorded at the discretion of the TA, so it is not guaranteed that there will be tutorial recordings available for later use. To help encourage attendance, students do not need permission from TAs or the instructor if they need to switch tutorials due to scheduling conflicts, or because they find that a particular TA's teaching style suits their learning better. In fact, students are encouraged to attend more than one tutorial for additional practice, since the TAs may differ slightly in the content they cover.

That being said, **tutorials are not substitutes for lecture.** There is simply not enough time to review all the concepts taught in lecture in an hour. Furthermore, there might be slight discrepancies between the material taught in lecture and in tutorial. Generally speaking, content presented in tutorial but not in lecture will not be tested; however, if you are unsure, please do not hesitate to contact the instructor for clarification.

Facilitated Study Groups

NOTE: The instructor does not control the scheduling of FSG sessions – all sessions are scheduled at the availability and discretion of the Centre for Teaching and Learning and its staff.

FSG sessions were developed by the Centre for Teaching and Learning as an important resource in helping students master the concepts in statistics, including those covered in PSYB07. However, FSG facilitators are **not** specifically hired by the Department of Psychology to help plan or support PSYB07, and are thus not accountable to instructor and/or TAs when creating FSG content. It is solely your responsibility (not the responsibility of the FSG facilitators) to know what content you are supposed to study for in this course. FSG facilitators should not be your primary point of contact if you have questions or concerns about PSYB07.

Course Assessments

1. ONLINE QUIZZES [10%]

The nature of statistics is inherently cumulative – that is, theories, concepts and calculations learned at the beginning of the semester are utilized up to the end of this course (and beyond!). As a result, it is **imperative** that you watch the lectures regularly and ensure that you do not fall behind in your work. To help keep you on track and motivated to study throughout the semester, there will be short quizzes every lecture (maximum one hour) that will test your understanding of the material presented in lecture every week. The quizzes will be due one hour before the following week's lecture (i.e., 1 p.m. on Tuesdays). **The top 7 out of 10 quizzes will be counted towards your final grade.**

Understandably, you may be worried that the quizzes will bring down your overall grade because you will not have an opportunity to study the content extensively before taking the quiz. To remedy this, the 10% weight of the quizzes will be added to your final exam (40% + 10% = 50%) if you score higher on your final exam than on the quizzes.

**THERE ARE NO MAKE-UPS FOR ONLINE QUIZZES, EVEN WITH DOCUMENTATION.
THERE WILL BE NO ACCOMMODATIONS MADE FOR STUDENTS WITH COURSE/WORK CONFLICTS.
THESE QUIZZES ARE TO BE COMPLETED INDIVIDUALLY.**

2. ASSIGNMENTS [20%]

The assignments in this course will: (1) challenge your knowledge of the course content, (2) help refine your skills in scientific writing, specifically pertaining to the results of various statistical analyses, and (3) ultimately prepare you for the final examination. Additional information regarding the assignments will be given closer to the due date.

Note: It is a student's responsibility to retain copies of their assignments (including hand-written calculations or assignments) in case an assignment goes missing. Students who do not have a copy of their assignment to send upon the request of the instructor or a teaching assistant will be given a zero. Students will not be given an opportunity to re-do or re-submit an assignment if their submission is illegible, or in a corrupt file.

4. MIDTERM EXAM [30%] & FINAL EXAM [40%]

Midterm and final examinations will consist of two parts: a theory portion and a calculation portion. Additional information will be provided closer to the date of the exams.

1) **Theory:** This portion will consist of an oral exam, in which students will be asked to answer questions about the theoretical concepts and how they relate to the statistical analyses taught in the class. The oral exam will be administered in a one-on-one Zoom meeting with a randomly assigned TA.

2) **Calculation:** For this portion of the exam, you will be provided a PDF with a few calculation questions via Quercus. You will be required to handwrite your work, and then submit a PDF or a good quality photo to Quercus within a designated time frame.

As mentioned previously, the content of this course is inherently cumulative; therefore, the final exam is technically cumulative as well. The date of the final is not announced by the University until the middle of the term. You should **not** make travel plans until you learn the date of your final exams. You **cannot** take the final at a different date/time unless you have a **verifiable** medical/personal reason that is deemed acceptable by the department. See the section on "Missed Term Work Due to Medical Illness or Emergency" below for more information.

Grading Summary

1. ONLINE QUIZZES: 10%

2. ASSIGNMENTS: 20%

4. MIDTERM EXAMINATION: 30%

5. FINAL EXAMINATION: 40%

Extensions & Late Penalties

Short extensions may be granted for good reasons, such as illness, conflict of due dates with assignments for other courses, or personal issues; however, extensions will be granted at the instructor's discretion and are **not guaranteed**. Extension requests must be made **before the due date**.

If an extension has been granted before the assignment is due, there will be no penalty for lateness. If no extension has been granted, **a penalty of 10% per day will apply to late submissions:**

10% deduction: 5 minutes to 24 hours late

20% deduction: 24 hours & 5 minutes to 48 hours late

30% deduction: 48 hours & 5 minutes to 72 hours late

40% deduction: 72 hours & 5 minutes to 96 hours late

50% deduction: 96 hours & 5 minutes to 120 hours late

COURSE WORK WILL NOT BE ACCEPTED IF MORE THAN 5 CALENDAR DAYS HAVE PASSED.

Course Policies

Classroom Conduct and Participation: Our classroom is a place where you should always feel safe and respected. It is also a place that is conducive to learning and intellectual curiosity. Any behaviors compromising this environment will not be tolerated and the student(s) and/or individual(s) will be asked to leave. I work to create an interactive dynamic during my lectures that engages you to think and contribute. I challenge you to use this time to not only become familiar with the content we are discussing, but to also develop your critical thinking skills along with me. It is expected that you sign-in to online lectures and tutorials prepared with a pencil, eraser and calculator so that you are able to participate fully and actively.

Lecture slides: For your convenience, lecture slides will usually be posted by the evening before a lecture. They will be posted in PDF format in three versions (1 slide, 3 slides and 4 slides per page).

LECTURE SLIDES ARE NOT A SUITABLE REPLACEMENT FOR ATTENDING LECTURE.

Lecture slides are not exhaustive and we will regularly cover important material that extends beyond them during lecture. You are responsible for this material with respect to testing. Instructional materials are only for the purpose of learning in this course and must not be distributed or used for any other reason whatsoever. If the instructor has discovered that a student has put any of the course materials into the public domain, has sold the materials, or has given the materials to a person or company that is using them to earn money, the University will support the instructor in asserting and pursuing their rights and copyrights in such matters. Likewise, lecture recordings are to be used exclusively by enrolled students for their personal learning only and are not to be shared in any way.

E-mail policy: In most cases, e-mails will be answered within 48 hours of receipt (not including weekends). The email subject should include **the course name** and nature of the inquiry. Emails that you send should contain no more than 1-3 questions and you should try to explain your current understanding of the concept in the email (which will be affirmed or corrected). If you have questions that require extensive answers, you may be asked to set up an office hour appointment instead.

If you are not used to writing emails in an academic context, I encourage you to review this online resource so that you adopt proper email etiquette now and in the future:

<https://www.insidehighered.com/views/2015/04/16/advice-students-so-they-dont-sound-silly-emails-essay>

Office hours: Office hours are a valuable resource for you to learn more about the class and/or important things related to (but outside of) the class. You should consider visiting the instructor's online office hours if you: (1) would like to discuss course content, (2) have an issue with course performance or progress, or (3) would like to discuss the field of psychology/neuroscience and how to get more involved.

All office hours will be conducted over Bb Collaborate, which does not currently support private meetings. Therefore, if you have a sensitive matter that you would like to discuss privately, please email the instructor to set up a Zoom meeting.

Syllabus changes: There may be minor changes made to the syllabus during the term. You will be notified of these changes immediately and no changes will be instituted that dramatically affect your ability to properly prepare for an assessment or examination (e.g., posting an assignment the week of the midterm).

Course Topics Outline *** (Subject to Revision, depending on when the midterm is scheduled) ***

| WEEK | TOPIC |
|-------------|---|
| 1 – Sep 8 | Introductions, Syllabus & Descriptive Statistics (<i>Textbook Chapters 1 & 2</i>) <i>No tutorials or quizzes during first week of class.</i> |
| 2 – Sep 15 | Descriptive Statistics & Graphing (<i>Textbook Chapter 2</i>) |
| 3 – Sep 22 | Probability (<i>Textbook Chapter 3</i>) |
| 4 – Sep 29 | Probability Distributions (<i>Textbook Chapters 3 & 4</i>) |
| 5 – Oct 6 | Hypothesis Testing: Z-Scores & Intro to T-Tests (<i>Textbook Chapter 5</i>) |
| 6 – Oct 13 | READING WEEK – NO LECTURES OR TUTORIALS |
| 7 – Oct 20 | T-Tests (<i>Textbook Chapter 5</i>) |
| 8 – Oct 27 | T-Tests Continued: Power Analyses & Non-Parametric Alternatives (<i>Textbook Chapter 5</i>) |
| 9 – Nov 3 | Chi-Squared Tests (<i>Textbook Chapter 6</i>) |
| 10 – Nov 10 | Correlation & Regression (<i>Textbook Chapter 7</i>) |
| 11 – Nov 17 | Introduction to the Analysis of Variance (ANOVA; <i>Textbook Chapter 8</i>) |
| 12 – Nov 24 | ANOVA (Continued; <i>Textbook Chapter 8</i>) |
| 13 – Dec 1 | Spillover and/or Review Lecture |

Time zone conflicts

If you are physically in a different time zone and a quiz or midterm is scheduled outside of 7:00am to midnight in your local time, you may use the following form to request special arrangements. Note that the form is only for term work. [Final exam conflicts](#) are handled by the Registrar's Office.

The form must be submitted **at least ten (10) business days before the activity**.

Form: <https://uoft.me/PSY-TimeZone>

Submit via email to: Keely Hicks, Departmental Assistant, keely.hicks@utoronto.ca

Missed Term Work due to Medical Illness or Other Emergency

All students citing a documented reason for missed term work must submit their request for accommodations **within three (3) business days** of the deadline for the missed work.

Submit via email to: Keely Hicks, Departmental Assistant, keely.hicks@utoronto.ca

Students must submit **BOTH** of the following:

- (1.) A completed Request for Missed Term Work Accommodations form (<http://uoft.me/PSY-MTW>), and
- (2.) Appropriate documentation to verify your illness or emergency, as described below.

Appropriate documentation:

For missed **ASSIGNMENTS** or **TERM TESTS** due to **FLU-LIKE SYMPTOMS** or **SELF-ISOLATION REQUIREMENTS**:

- Email the Request for Missed Term Work Accommodations form (uoft.me/PSY-MTW) to Keely (keely.hicks@utoronto.ca), and
- Declare your absence on **ACORN** (Profile & Settings > Absence Declaration)

For missed **ASSIGNMENTS** due to **OTHER ILLNESS**:

- Email the Request for Missed Term Work Accommodations form (uoft.me/PSY-MTW) to Keely (keely.hicks@utoronto.ca), along with the Self-Declaration of Student Illness Form (uoft.me/PSY-self-declare-form).

For missed **TERM TESTS** due to **OTHER ILLNESS**:

- Email the Request for Missed Term Work Accommodations form (uoft.me/PSY-MTW) to Keely (keely.hicks@utoronto.ca), along with a scan/photo of the original copy of the official UTSC Verification of Illness Form (uoft.me/UTSC-Verification-Of-Illness-Form) or an original copy of the record of visitation to a hospital ER.
- Forms are to be completed in full, clearly indicating the start date, anticipated end date, and severity of illness. The physician's registration # and business stamp are required.
- Note: If an end date of "ongoing" is specified, the medical note will be assumed to cover a period of two weeks. If no end date / an "unknown" end date is specified, the

note will be assumed to cover a period of three business days (starting from illness start date.)

For missed **TERM TESTS** due to **ACCESSABILITY REASONS**:

- Meet with your AccessAbility consultant and have them email Keely (keely.hicks@utoronto.ca) detailing accommodations required.

For missed **ASSIGNMENTS** due to **ACCESSABILITY REASONS**:

- If your desired accommodation is within the scope of your Accommodation Letter (ex. your letter includes “extensions of up to 7 days” and you need 1-7 more days), email the Request for Missed Term Work Accommodations form (uoft.me/PSY-MTW) to Keely (keely.hicks@utoronto.ca), and attach a copy of your letter. Specify how many days extension you are requesting in your email.
- If your desired accommodation is outside the scope of your Accommodation Letter (ex. your letter includes “extensions of up to 7 days” but you need more time than that) you will need to meet with your AccessAbility consultant and have them email Keely (keely.hicks@utoronto.ca) detailing the accommodations required.

For missed **ASSIGNMENTS** or **TERM TESTS** in **OTHER CIRCUMSTANCES**:

Email the Request for Missed Term Work Accommodations form (<http://uoft.me/PSY-MTW>) form to Keely (keely.hicks@utoronto.ca), along with:

- For the death of a family member/friend, provide a copy of the death certificate.
- For U of T varsity-level or professional athletic commitments, an email from your coach or varsity administrator should be sent directly to Keely (keely.hicks@utoronto.ca) well in advance of the missed work, detailing the dates and nature of the commitment.
- For religious accommodations, please email Keely (keely.hicks@utoronto.ca) well in advance of the missed work.
- For circumstances outside of these guidelines, please email Keely (keely.hicks@utoronto.ca) on or before the date of the test / assignment deadline to describe your circumstances and determine appropriate documentation.

Documents covering the following situations are NOT acceptable: medical prescriptions, personal travel, weddings, personal/work commitments.

As stated above, your documents must be submitted within three (3) business days of the deadline for the missed work.

After Submitting Your Documentation:

Within approximately one to five business days, you will receive a response from your instructor detailing the accommodations to be made (if any).

You are responsible for checking your official U of T email and Quercus course announcements daily, as accommodations may be time-critical.

You should continue to work on your assignments to the best of your ability, as extension accommodations may be as short as one business day, depending on the nature of the illness/emergency.

If an accommodation has been granted but you are unable to meet the conditions of the accommodation (ex. you need a longer extension, or you missed a make-up test), you will need to repeat the missed term work procedure and submit additional forms to request further accommodation. Note that in the case of a missed make-up test, an opportunity to write a second make-up test may not be provided.

Completion of this form does NOT guarantee that accommodations will be made. The course instructor reserves the right to decide what accommodations (if any) will be made. Failure to adhere to any aspect of this policy may result in a denial of your request for accommodation.

Missed Accommodations

If an accommodation is granted but a continued illness/emergency prevents you from meeting the requirements of your accommodation, you must repeat the missed term work procedure to request additional accommodations.

(E.g.) If you miss a make-up midterm, you would need to submit another Request for Missed Term Work Accommodations form. If your original medical note / documentation included the date of the make-up midterm, then only the Request form is required. If the date of the make-up midterm fell outside of the dates indicated on your original medical note/other documentation, then a new medical note/other appropriate documentation must also be submitted.

Importance of Three Business Day window:

If you are unable to submit your documents within the three business day window, you must email Keely (keely.hicks@utoronto.ca) within the three business day window to explain the nature of the delay, and when you will be able to provide your documents. Exceptions to the documentation deadline will only be made under exceptional circumstances.

NOTE: Assignments due at end of term

Instructors cannot accept term work any later than five business days after the last day of class. Beyond this date, you would need to file a petition with the Registrar's Office (<https://www.utoronto.ca/registrar/term-work>).

NOTE: Final Exams

This policy applies only to missed assignments and term tests. Missed final exams are handled by the Registrar's Office (<http://www.utoronto.ca/registrar/missing-examination>).

AccessAbility Services

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability or health consideration that may require accommodations, please feel free to approach the instructor and/or the AccessAbility Services Office (in SW-302) as soon as possible. Your instructor will work with you and AccessAbility Services to ensure you can achieve your learning goals in this course. Enquiries are confidential. The UTSC AccessAbility Services staff members are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations.

AccessAbility Services contact information

Phone: (416) 287-7560 Email: ability@utsc.utoronto.ca

Academic Integrity

Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. Behaviours that constitute academic dishonesty and the processes for addressing academic offences are outlined in The University of Toronto's Code of Behaviour on Academic Matters: <http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>

Potential offences include, but are not limited to:

- *On tests and exams:*
 - (a) Using or possessing unauthorized aids;
 - (b) Looking at someone else's answers during an exam or test;
 - (c) Misrepresenting your identity.
- *In academic work:*
 - (a) Falsifying institutional documents or grades;
 - (b) Falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters.

Useful Links

Statistical help and resources

Textbook: Interactive Demonstrations <http://statsapp-demos.utsc.utoronto.ca/>
Facilitated Study Groups <https://www.utsc.utoronto.ca/ctl/twc/facilitated-study-groups-fsg>
Khan Academy <https://www.khanacademy.org/math/statistics-probability>
APA Formatting <https://owl.english.purdue.edu/owl/resource/560/01/>

Skill building, future planning

Academic Advising, Career Centre <http://www.utsc.utoronto.ca/aacc/>
Writing Services <http://www.utsc.utoronto.ca/twc/>
Presentation Skills <http://www.utsc.utoronto.ca/ctl/presentation-skills>
Co-op Program <http://www.utsc.utoronto.ca/askcoop/>

Your well-being

Health and Wellness <http://www.utsc.utoronto.ca/hwc/>
Test anxiety https://www.anxietybc.com/sites/default/files/Test_Anxiety_Booklet.pdf

The Department of Psychology

UTSC Experiential Learning <http://www.utsc.utoronto.ca/psych/experiential-learning>
Psychology lab opportunities <http://tinyurl.com/jjq25t7>
The Psychology & Neuroscience Departmental Association <http://www.thepnda.org/>