

PSYC08: ADVANCED DATA ANALYSIS IN PSYCHOLOGY UNIVERSITY OF TORONTO SCARBOROUGH

WINTER 2021 SYLLABUS – ONLINE

Instructor: Olivia Podolak Lewandowska, PhD

Email: olivia.podolak@mail.utoronto.ca

Office Hours: Thursdays at 11 am (subject to change)

Lectures: Live on Wednesdays from 12 – 3 pm on Bb Collaborate (Lectures will be recorded).

Teaching Assistants	Email	Tutorial Time
Dilakshan Srikanthan	dilakshan.srikanthan@mail.utoronto.ca	Mondays at 9 am
Anna Vasilevskaya	hanna.vasileuskaya@mail.utoronto.ca	Mondays at 3 pm
Vignash Tharmaratnam	vignash.tharmaratnam@mail.utoronto.ca	Tuesdays at 3 pm
Marco Sama	marco.sama@mail.utoronto.ca	Thursdays at 1 pm
Greg Depow	greg.depow@mail.utoronto.ca	Fridays at 3 pm

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. **Given the online nature of this course, students need to be in the habit of checking emails and announcements regularly. Accommodations will not be made for students who miss emails or announcements.**

Course Description, Prerequisites & Objectives

From the UTSC Course Calendar: This course is a continuation of PSYB07H3. The primary focus of this course is on the understanding of Analysis-of-Variance and its application to various research designs. Examples will include *a priori* and *post hoc* tests. Finally, there will be an introduction to multiple regression, including discussions of design issues and interpretation problems.

Prerequisite: [PSYB07H3 or STAB23H3 or STAB22H3] and [an additional 0.5 credit at the B-level in Psychology]

Exclusion: STAC52H3, PSY202H

Breadth Requirements: Quantitative Reasoning

Enrolment Limits: Restricted to students in the Specialist/Specialist Co-op and Major programs in Psychology, Mental Health Studies, Neuroscience and Paramedicine. Students in the Minor in Psychology will be admitted if space permits.

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 Department of Psychology. A brief refresher of PSYB07 will be provided; however, there is not enough time to re-teach the PSYB07 content in its entirety. Resources will be provided to students who may require a more comprehensive review of the prerequisite material.

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 Wednesdays from 12 – 3 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 PSYC08. However, FSG facilitators are not specifically hired by the Department of Psychology to help plan or support PSYC08, 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 PSYC08.

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 Wednesdays). **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 submitted 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 meeting with a randomly assigned TA. Students will also have an option to re-do this portion of the exam, if they feel they did not perform as well as they could have.

2) **Calculation:** For this portion of the exam, you will be sent a PDF with a few calculation questions. 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 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 our 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 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.

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 – Jan 13	Syllabus & Review of Concepts from B07 (<i>Textbook Chapters: 1-6</i>)
2 – Jan 20	T-Tests vs. Analyses of Variance (ANOVAs) (<i>Textbook Chapter: 8</i>)
3 – Jan 27	One-Way ANOVA (<i>Textbook Chapter: 8</i>)
4 – Feb 3	Randomized Block Design – ANCOVA (<i>Textbook Chapters: 8 & 9</i>)
5 – Feb 10	Randomized Block Design – Repeated Measures ANOVA (<i>Textbook Chapter: 9</i>)
6 – Feb 17	READING WEEK – NO LECTURES OR TUTORIALS
8 – Feb 24	Non-Parametric Tests – Kruskal-Wallis & Friedman’s Tests (<i>Textbook Chapters 6, 8 & 9</i>)
9 – March 3	Multiple Comparisons – <i>A Priori</i> Tests (<i>Textbook Chapter: 10</i>)
10 – March 10	Multiple Comparisons – <i>Post Hoc</i> Tests (<i>Textbook Chapter: 10</i>)
11 – March 17	Factorial ANOVA & Simple Effects (<i>Textbook Chapter: 11</i>)
12 – March 24	Mixed-Design ANOVA & Simple Effects (<i>Textbook Chapter: 11</i>)
13 – March 31	Open Lecture (Spill-over Content and/or Review)
14 – April 7	Open Lecture (Spill-over Content and/or Review)

Psychology Department – Missed Term Work Policy (WINTER 2021)

For missed term work (assignments and term tests) due to illness, emergency, or other mitigating circumstances, please follow the procedures outlined below.

Notes:

- The following reasons are **not** considered sufficient for missed term work: travel for leisure, weddings, personal commitments, work commitments, human error.
- Missed Final Exams are handled by the Registrar's Office and should be declared on eService: <http://www.utoronto.ca/registrar/missing-examination>
- **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>

Accommodations for Illness or Emergency:

For missed work due to ILLNESS OR EMERGENCY, please complete the following two-step process:

1. Complete the **Request for Missed Term Work Accommodations Form** (<http://uoft.me/PSY-MTW>) and email it to Keely Hicks at keely.hicks@utoronto.ca ,
and
2. **Declare your absence** on **ACORN** (Profile & Settings > Absence Declaration)

Deadline: You must complete the above steps **within 3 business days** of the missed work.

Note: For this semester, we do not require any additional supporting documentation (ex. medical notes) to support your missed term work accommodation request.

Accommodations for Academic Conflicts:

For missed term work due to an ACADEMIC CONFLICT (i.e. two quizzes or tests scheduled at the same time), please complete the following process:

1. Complete the **Request for Missed Term Work Accommodations Form** (<http://uoft.me/PSY-MTW>), choosing "Other" as your reason for missed work and explaining the conflict in the space provided.
2. Take screenshots of your course homepages that demonstrate the conflict.
3. Email the form and screenshots to Keely Hicks (keely.hicks@utoronto.ca).

Deadline: You should report the conflict to Keely Hicks (keely.hicks@utoronto.ca) at least two weeks (10 business days) before the date of the activity, or as soon as possible if it was not possible to identify the conflict earlier.

Note: Multiple assignments due on the same day are not considered conflicts. Accommodations may only be possible in the case of quizzes and tests that are both scheduled during the same discrete period. Back-to-back tests/quizzes are not considered conflicts.

Note: Students are responsible for keeping their course timetables conflict-free. Students who choose to register in two synchronous courses with overlapping lecture/tutorial/lab schedules may not necessarily be accommodated.

Accommodations for Religious Conflicts:

For missed term work due to a RELIGIOUS CONFLICT, please complete the following process:

1. Complete the **Request for Missed Term Work Accommodations Form** (<http://uoft.me/PSY-MTW>), choosing "Other" as your reason for missed work and noting "Religious conflict" in the space provided.
2. Email the form to Keely Hicks (keely.hicks@utoronto.ca).

Deadline: You should report the conflict to Keely Hicks (keely.hicks@utoronto.ca) at least two weeks (10 business days) before the date of the activity, or as soon as possible if it was not possible to identify the conflict earlier.

Accommodations for 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, please complete the following process:

1. Complete the **Time Zone Conflict Form** (<https://uoft.me/PSY-TimeZone>), and
2. Email the form to Keely Hicks (keely.hicks@utoronto.ca)

Deadline: You should report the conflict to Keely Hicks (keely.hicks@utoronto.ca) at least two weeks (10 business days) before the date of the activity, or as soon as possible, if it was not possible to identify the conflict earlier.

Accommodations for Students Registered with AccessAbility Services:

For missed TERM TESTS due to ACCESSABILITY REASONS:

- Contact 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 3 days):
 1. Complete the **Request for Missed Term Work Accommodations Form** (<http://uoft.me/PSY-MTW>).
 2. Email the form and your Accommodation Letter to Keely Hicks (keely.hicks@utoronto.ca).
- 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):
 1. Contact your AccessAbility consultant and have them email Keely Hicks (keely.hicks@utoronto.ca) detailing the accommodations required.

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 and declare your extended absence on ACORN.

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.

Questions?

If you have any questions about this Missed Term Work policy, please contact Keely Hicks (keely.hicks@utoronto.ca) **well before the date of the test / assignment deadline** to describe your circumstances and inquire about procedures.

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.uts.utoronto.ca/psych/experiential-learning>

Psychology lab opportunities

<http://tinyurl.com/jjq25t7>

The Psychology & Neuroscience

Departmental Association

<http://www.thepnda.org/>

Academic Integrity

Student Rights and Responsibilities:

https://www.utm.utoronto.ca/dean/sites/files/dean/public/shared/pdfs/Academic_integrity.pdf

<https://www.utm.utoronto.ca/academic-integrity/students>