

# PSYC09: APPLIED MULTIPLE REGRESSION IN PSYCHOLOGY UNIVERSITY OF TORONTO SCARBOROUGH

## FALL 2020 SYLLABUS – ONLINE

---

**Instructor:** Olivia Podolak Lewandowska, PhD

**Email:** [olivia.podolak@mail.utoronto.ca](mailto:olivia.podolak@mail.utoronto.ca)

**Office Hours:** By appointment only.

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

**Teaching Assistant:** Lawrence Guo, PhD

**Email:** [linn.guo@mail.utoronto.ca](mailto:linn.guo@mail.utoronto.ca)

**Office Hours:** By appointment only.

**Lectures:** Live on Tuesdays from 2 – 3 p.m. on Bb Collaborate (Tutorials will be recorded).

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

**Please use your university email for all contact. 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:** An introduction to multiple linear regression (MLR) and its applications in psychological research. The course covers the data analysis process from data collection to interpretation: how to deal with missing data, the testing of assumptions, addressing problem of multicollinearity, significance testing, and deciding on the most appropriate model. Several illustrative data sets will be explored in detail. The course contains a brief introduction to factor analysis. The goal is to provide the students with the skills and understanding to conduct and interpret data analysis in non-experimental areas of psychology.

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

**Exclusion:** [MGEC11H3](#)

**Breadth Requirements:** Quantitative Reasoning

**Note #1:** Restricted to students enrolled in the Specialist/Specialist Co-op and Major programs in Psychology, and Mental Health Studies, and the Specialist/Specialist Co-op in Neuroscience Cognitive stream. Students in the Minor program in Psychology will be admitted if space permits.

**Note #2:** 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.

PSYC09 in particular is designed to prepare students to better understand the use of multiple linear regression (MLR) in psychological research. This class emphasizes both theoretical and practical skills necessary to interpret and conduct MLR using SPSS statistical software. This course will also highlight how MLR connects to several other statistical techniques, and how these approaches are used in contemporary psychological research.

Students will be asked to take a hands-on approach to data analysis, ranging from fundamentals of data preparation, model building and interpretation. This class is synchronous - students will be expected to sign-in, and work with sample datasets using SPSS during lecture and tutorial. Tutorials will allow students to practice key skills and review content in order to complete course assignments and prepare for exams.

## Course Topics Outline \*Subject to Revision

WEEK	TOPIC	ASSESSMENTS DUE
1 – Sep 9	Introductions & Review of Correlations and Simple Regression	-
2 – Sep 16	Introduction to Multiple Linear Regression (& SPSS)	-
3 – Sep 23	Assumptions I	Assignment 1 Due at 12 p.m.
4 – Sep 30	Assumptions II	-
5 – Oct 7	Assumptions III	Assignment 2 Due at 12 p.m.
6 – Oct 14	<b>READING WEEK – NO LECTURE/TUTORIAL</b>	-
7 – Oct 21	<b>TERM TEST 1</b>	Project Contract Due
8 – Oct 28	Mediation & Moderation	-
9 – Nov 4	Factor Analysis	-
10 – Nov 11	Introduction to Logistic Regression	Project Outline/Draft Due
11 – Nov 18	<b>TERM TEST 2</b>	-
12 – Nov 25	[Tentative Hold for Activities Related to Final Project]	-
13 – Dec 2	[Tentative Hold for Activities Related to Final Project]	-

## Required Software

**For this class, you MUST purchase an SPSS license.**

SPSS is a software used for statistical analysis. All lectures and tutorial activities will be based on this specific program. Furthermore, all class assessments (including tests and the final project) must be completed using SPSS.

You may purchase an SPSS license at a discounted student rate (\$70 for the year) here:

<https://onesearch.library.utoronto.ca/ic/spss-students>

## 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>

**Note:** Additional optional readings and handouts will be posted on Blackboard.

## 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 2 – 5 p.m. via Bb Collaborate. This course is synchronous; that is, it is expected that students sign-in online and attend lectures and tutorials every week. Attendance will be taken in order to monitor students' progress. The lectures will, however, be recorded for students who cannot make it to the live-stream due to extenuating circumstances (i.e., time differences, essential service workers, etc.).

Nevertheless, 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. 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. Moreover, **tutorials should**

not be treated as 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.

## Course Assessments

### 1.a. MAJOR ASSIGNMENTS [10% + 10% = 20%]

There will be two major assignments due over the course of the semester that 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 term tests and final project. Additional information regarding the assignments will be given closer to the due dates.

### 1.b. MINI ASSIGNMENTS [5 x 1% = 5%]

There will be up to five mini assignments that will help you understand the content being taught each week or to help you practice analyzing data in SPSS. Assignments will be introduced in tutorial and will be due exactly one week later, prior to the next tutorial.

*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.*

### 2. TERM TESTS [15% + 20% = 35%]

There will be two in-class online term tests that are scheduled for October 21<sup>st</sup> 2020 and November 18<sup>th</sup> 2020. Both tests will include theoretical and practical/applied content, and will require students to generate and interpret SPSS outputs. Additional information will be provided closer to the date of the tests.

### 3. CONSULTANCY PROJECT [Multiple parts worth 40% in total]

**In lieu of a final exam**, students will form groups and will partner with an organization within Toronto or surrounding communities. Each organization affiliated with this project will provide students with data that require analysis in order to meet certain goals/objectives or to guide future work. Students will also be responsible for presenting their findings to their partnering organization in an accessible manner. The exact objectives of each project will vary from organization to organization; however, the general purpose of this final project will be to give students real, hands-on experience as statistical consultants.

The project will be divided into multiple steps to ensure that students stay on track with their progress and receive adequate feedback from the instructor and/or TA. Additional information will be provided once the details of each partnering organization's statistical needs are assessed and finalized.

## 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**. The policies dictated here **do not** apply to term tests.

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 **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 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>

**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 a new assignment the week of the midterm).

## Time zone conflicts

If you are physically in a different time zone and a quiz or midterm is scheduled outside of 7:00 a.m. 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](mailto: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](mailto: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](mailto: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](mailto: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](mailto: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](mailto: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](http://uoft.me/PSY-MTW)) to Keely ([keely.hicks@utoronto.ca](mailto: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](mailto: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](mailto: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](mailto: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](mailto:keely.hicks@utoronto.ca)) well in advance of the missed work.
- For circumstances outside of these guidelines, please email Keely ([keely.hicks@utoronto.ca](mailto: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](mailto: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@utoronto.ca](mailto:ability@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/>

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](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/>