

SOC252H1S – Winter 2026
Intermediate Quantitative Methods

Time: Monday 3:10-5 pm
Location: See ACORN

Professor: Leafia Ye, Ph.D.

Email: leafia.ye@utoronto.ca

Office hours: Tuesdays 1:30-2:15 pm (on Zoom; link on Quercus)

Teaching assistants – Tutorial times (see schedule on p.3 for tutorial days, as tutorials do not take place in all weeks):

Sagi Ramaj (sagi.ramaj@mail.utoronto.ca) – Wednesday 11 am- 1 pm

Momo Tanaka (momo.tanaka@mail.utoronto.ca) – Wednesday 1-3 pm & 3-5 pm

Alysia De Melo (alysia.demelo@mail.utoronto.ca) – Wednesday 5-7 pm

1. COURSE OVERVIEW

As social scientists, we are interested in understanding how social outcomes vary across different groups, or how such outcomes are related to other characteristics of interest. To answer such questions, we often need to collect data and analyze those data in a statistical way. Building upon a solid understanding of the principles of statistics and basic statistical programming, this course introduces practical regression techniques to analyze quantitative data to draw inferences about social processes. It covers a wide range of commonly used regressions for analyzing continuous and categorical outcomes. Upon successful completion of the course, students will be able to apply various quantitative methods, correctly interpret statistical outputs, and critically evaluate sociological research that uses regression.

Prerequisites

The prerequisite to take this course is SOC202H1 (Introduction to Quantitative Methods in Sociology). Students without this requirement will be removed at any time discovered and without notice. In general, students are expected to have a solid background in univariate statistical analysis, including the basics of probability and statistical inference.

Required Text

Thrane, C. (2019). Applied regression analysis: Doing, interpreting and reporting. Routledge. This book is **free to access online** via UofT libraries.

Required Software

All statistical computing for this course will be done using Stata (<http://www.stata.com>). Stata is a statistical software widely used in academia and policy research. Basic knowledge in other statistical programming languages such as R will prepare you well for learning Stata. For a brief introduction to Stata's command language, see https://sscc.wisc.edu/sscc/pubs/intro_stata/intro_stata1.htm or <https://stats.oarc.ucla.edu/stata/modules/>.

Please purchase a Stata license from <http://www.stata.com/order/new/edu/profplus/student-pricing/> at a discounted price for

students. Stata/BE would be enough for the purpose of this course, and you can select the 6-month license unless you intend to keep using Stata for longer. Stata is also installed on all computers in the sociology department computer lab (Room 17198, 700 University Ave, 17th Floor), where tutorials are held.

Readings

In addition to the textbook, you will also read research articles from social science journals that use each method we cover. All readings will be posted on Quercus. When you read the article, pay close attention to the methods section, as well as results (including tables and graphs) where the author(s) interpret their regression output. You should also read the entire article carefully enough to remember what the research question and general motivation was, as quizzes and tests may refer to these readings. It is normal (and very common) that readings can mention methods we have not yet covered in the course. In those cases, focus on the parts you can understand and on methods you have learned. The goal is for you to understand how social scientists apply methods and how they write about them.

2. COURSE REQUIREMENTS

Assignment	Weight
Quizzes (5% each)	15%
Mid-term test	25%
Final test	25%
Data analysis project	30%
Tutorial participation	5%
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Total	100%

Quizzes

You will complete three quizzes on Quercus that test what you learned from the readings and during lectures. Quizzes are open-book and untimed. You must complete them independently, and each quiz is worth 5% of your grade.

Mid-term test

You will be given a mid-term test in class on February 9 to test your knowledge in the first five weeks of the course. The test is close book and can cover readings (textbook, academic articles) as well as lecture content.

Final test

You will be given a final test in class on March 30 to test your knowledge in the entire course. The test is close book and can cover readings (textbook, academic articles) as well as lecture content. Although the final test is cumulative, there will be an emphasis on topics in the weeks after the mid-term test.

Data analysis project

You will complete a data analysis project to apply the methods you learned in this course. Specifically, you will use Stata to analyze actual survey data to answer a social science research question. The final product will be a 1500-word essay with an introduction and background, data and methods, results, and conclusion. Your project will be evaluated on the

significance of the question, the sufficiency of your explanation of methods, the rigor of the data analysis, and the quality of your conclusions. While you should conduct original research and complete the analysis independently, it is normal for you to discuss your data analysis project with your classmates and TA.

We will submit the most excellent papers from the data analysis project to the Sociology Department's Best Undergraduate Research Paper Award.

Tutorial participation

The tutorials serve as supplements to weekly lectures. The two main goals of tutorials are to 1) solidify your understanding of the material (including Q&A on quizzes and the mid-term), and 2) prepare you with the necessary programming skills (in Stata) for the data analysis project. It is important that you consistently attend and actively participate in tutorials, and you will be graded by your TA on your performance. Tutorials are not held every week but only on marked dates (see schedule below).

3. SCHEDULE AND READINGS*

Week	Lecture	Topic	Tutorial	Items due
1	Jan 5	Introduction		
2	Jan 12	Simple linear regression	Jan 14	Quiz 1 (Jan 18)
3	Jan 19	Multiple regression	Jan 21	
4	Jan 26	Samples and populations (Zoom instruction due to weather)		Quiz 2 (Feb 1)
5	Feb 2	Samples and populations II	Feb 4	
6	Feb 9	Mid-term test		
7	Feb 16	<i>No class – reading week</i>		
8	Feb 23	Assumptions of regression	Feb 25	
9	Mar 2	Moderation		Quiz 3 (Mar 8)
10	Mar 9	Non-linearity and mediation	Mar 11	
11	Mar 16	Logistic regression		Data analysis project (Mar 15)
12	Mar 23	Multinomial logistic regression	Mar 25	
13	Mar 30	Final test		

*Schedule and readings are subject to change. I will announce changes as much in advance as possible.

Week 1: Introduction

No required readings.

Week 2: Simple linear regression

Thrane Ch. 1 and 2.

Balogun, A. G., & Olanrewaju, A. S. (2016). Role of computer self-efficacy and gender in computer-based test anxiety among undergraduates in Nigeria. *Psychological Thought*, 9(1).

Week 3: Multiple regression

Thrane Ch 3.

Delucchi, M. (2000). Don't worry, be happy: Instructor likability, student perceptions of learning, and teacher ratings in upper-level sociology courses. *Teaching Sociology*, 220-231.

Optional:

Rohrer, J. M. (2018). Thinking clearly about correlations and causation: Graphical causal models for observational data. *Advances in methods and practices in psychological science*, 1(1), 27-42.

Week 4: Samples and populations

Thrane Ch 4.

Week 5: Samples and populations II

Jung, M. (2020). Immigration and crime in Canadian cities: A 35-year study. *Canadian Journal of Criminology and Criminal Justice*, 62(1), 71-97.

Week 6: Mid-term test

In person during regular lecture time.

Week 7: No class – reading week

Guidelines for data analysis project will be posted.

Week 8: Assumptions of regression

Thrane Ch 5.

Week 9: Moderation

Thrane Ch 6.1-6.2

Zhang, Z., Liu, G., Chen, B., & Huang, K. (2022). Social asset or social liability? how partisanship moderates the relationship between social capital and covid-19 vaccination rates across united states counties. *Social Science & Medicine*, 311, 115325.

Week 10: Non-linearity and mediation

Thrane Ch 6.3-6.6

Jang, H., Pilkauskas, N. V., & Tang, F. (2022). Age at immigration and depression: The mediating role of contemporary relationships with adult children among older immigrants. *The Journals of Gerontology: Series B*, 77(2), 413-423.

Week 11: Logistic regression

Thrane Ch 7.1-7.5

Erickson, M., & Kim, C. (2022). Tied staying on the rise? Declining migration among co-breadwinner couples in the United States, 1990s to 2010s. *Social Forces*, 101(2), 974-1002.

Week 12: Multinomial logistic regression

Thrane Ch 7.6.

Akresh, I. R. (2008). Occupational trajectories of legal US immigrants: Downgrading and recovery. *Population and development review*, 34(3), 435-456.

Week 13: Final test

In person during regular lecture time.

4. COURSE POLICIES

Communication

When you have a question about the course, please first read the syllabus thoroughly and make sure your question is not already in the syllabus. If you are certain that you have a question that is unanswered by the syllabus, the best and fastest ways to get answers are to 1) bring questions to the lecture and ask them during the break or right after class, and 2) come to office hours. You do not need to make an appointment to come to office hours, although there can be a wait if multiple students attend office hours at the same time.

If you have questions regarding course material or the data analysis project that you cannot raise during/after lectures or during office hours, **please email the teaching assistant that leads your tutorial**. Each TA's email is at the top of this syllabus. Please always give your email a concise title starting with the course number (e.g., "Soc252 Trouble accessing quiz").

Lecture attendance

Although lecture attendance is not part of your final grade, you are expected to attend every week. You are expected to stay for the entire duration of the lecture each time. If you miss a lecture, it is your own responsibility to catch up by doing readings thoroughly and going over lecture slides, which are posted after each lecture.

Course Site

This course will be available via University of Toronto Learning Management System, Quercus (<https://q.utoronto.ca>). All course materials, instructions, announcements etc. will be posted on this site. It is your responsibility to check the course site each week.

Word count

The data analysis project has a maximum word count of 1500, which does not include reference lists. While you are strongly encouraged to stick to the word count, you are allowed to exceed the word count by 10% without penalty. If your word count is beyond 10% above the limit, the grader can apply a penalty to your grade.

Late policy

Late submission deduction for **quizzes and the data analysis project** is 5% per day. For example, if the deadline is on Monday (11:59 pm) and you submitted your assignment on Tuesday at 9 am, then we will multiply your grade by 0.95; if you submitted your assignment on Wednesday at 1 pm, then we will multiply your grade by 0.9, and so on. **Assignments that are late by 7 days or more will receive a mark of zero.** You do not need to contact us if an assignment is late; the grader will apply the penalty.

Missed deadline for quizzes and the data analysis project:

Students who miss a quiz or the data analysis project deadline will receive the late penalty unless it is due to illness. In those cases, within three days of missing the deadline, students must send the professor a request for consideration. **Students must document their request with 1) Absence declaration via ACORN, and 2) a U of T Verification of Illness or Injury Form.** Note that you can only do this once per academic term.

Students who are late in submitting an assignment for all other emergency reasons should request their College Registrar to email the instructor. **In those cases, there is no need to contact the instructor directly;** the Registrar will evaluate the request and then contact the instructor to make a recommendation.

Missed tests:

Students who miss a test will receive a zero on the test unless it is due to illness. In those cases, within 24 hours after missing the test, the student must send the professor a request for consideration. **Each request be made together with 1) Absence declaration via ACORN, and 2) a U of T Verification of Illness or Injury Form.** Note that you can only do this once per academic term, so if you have already used it for a quiz or data analysis project you will not be able to do this.

Students who miss a test due to other severe circumstances should request their College Registrar to email the instructor at three working days before the test date (or within 24 hours of missing the test, in cases of emergencies). **In those cases, there is no need to contact the instructor directly;** the Registrar will evaluate the request, verify the necessary documentation, then contact the instructor to make a recommendation. The professor will not be able to discuss the case with individual students.

If your request for consideration is accepted following the procedures above, you will be given a make-up test. Once you submit your request, It is your responsibility to monitor your

email to make sure you stay informed on the date and location of the make-up test. If you miss the make-up test, you will receive a zero for the test and there will not be a second opportunity.

Grading issues

If you believe a quiz, mid-term test, or final test question was graded incorrectly, please contact your TA.

If you believe your data analysis project was graded unfairly, you may submit a regrade request to the professor. Before contacting the professor, you must wait until 24 hours have passed since the grade was shared with you. You will need to submit a **one-page memo** where you give tangible reasons for why you deserve a higher grade than received and refer to specific sections of the rubric. If your request is accepted, the Professor will regrade the entire assignment, not just specific parts or issues you may have flagged. Your grade may go up or down as a result. There will not be further discussion about your assignment grade once the regrade is complete.

Accessibility

The University of Toronto is committed to accessibility. If you require accommodations for a disability, or have any accessibility concerns about the course, the classroom or course materials, please contact Accessibility Services as soon as possible: disability.services@utoronto.ca or <http://studentlife.utoronto.ca/accessibility>. Please let Professor Ye know of your accessibility needs by the second week of the semester via email.

Academic Misconduct

Academic integrity is fundamental to learning and scholarship at the University of Toronto. Participating honestly, respectfully, responsibly, and fairly in this academic community ensures that the University of Toronto degree that you earn will be valued as a true indication of your individual academic achievement and will continue to receive the respect and recognition it deserves.

Cheating, misrepresentation, and plagiarism will not be tolerated. Students who commit an academic offence face serious penalties. Know where you stand by reading the “Code of Behaviour on Academic Matters” in the Calendar of the Faculty of Arts and Science.