SOC202H1S (LEC0201) | Winter 2017 | Department of Sociology | University of Toronto

Quantitative Analysis in Social Science Research

Instructor: Irene Boeckmann, PhD
Office Hours: Wed 3-4 p.m., Thu 9-10 a.m.
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Teaching Assistants: TBA
TA Office Hours: TBA

Class Wed 10 a.m. to 12 p.m.
Location: RW 117
Tutorials Thu 2.30-4 p.m.,
Fri 12.30-2 p.m. & 2.30-4 p.m.
Location: FE-36, 725 Spadina Ave., Basement
Class website: https://portal.utoronto.ca

Course Description and Objectives

This course is designed to introduce basic statistical techniques for analyzing data used in sociological research and social sciences in general. The course focuses on understanding and applying statistical techniques, as well as interpreting findings of analyses based on quantitative data. You will be introduced to descriptive statistics, and basic inferential statistical techniques, including regression analysis. Furthermore, you will get hands-on experience using SPSS software to analyze quantitative data. While you are expected to be familiar with basic algebraic operations, derivations and advanced mathematical concepts will not be used in this class.

Statistics seems like a daunting subject to many students. It is not just numbers, but includes more generally problem solving and logic. The focus in this course is on how to use statistical techniques to answer questions and provide information. The skills and techniques that you learn in this class are used in a wide variety of other classes and with provide background for many professional problems you may be confronted with.

In order for you to learn and master statistics (and get a good grade in the class) you will need to spend a considerable amount of time outside of class studying the material and practicing the techniques. Your ability to solve problems and get information out of a group of numbers requires you to learn through practice and not just memorize the techniques. You will practice through homework and lab assignments, and practice examples given in class.

Course Goals

1. Introduce you to basic statistical techniques, both descriptive and inferential
2. Develop your ability to interpret and to write about statistical results
3. Develop your ability to use SPSS effectively, the statistical software used in this class and in many other settings
4. Provide you with the experience in exploring and working with large secondary data

Prerequisites

The prerequisite to take this course is SOC101Y (or SOC102H and SOC103H) and SOC200H1. Students without this/these prerequisite/s will be removed at any time discovered and without notice.

Learning Components & Course Requirements

Math self-assessment test and syllabus quiz. During the first week of class, complete the math self-assessment test and the syllabus quiz on the course website (https://portal.utoronto.ca). If your score on the math self-assessment test is less than 95%, please make sure to review the "Prologue: Basic Mathematics Review" (pages 1-9) in the textbook. You will be given full credit for completing the math self-assessment test. The deadline for these assignments is Friday, 01/06 at 11:45 p.m. (each *worth 0.5% of the final grade, in total: 1%*)

Readings. Each week, we will read one or two chapters in the textbook. You are expected to read the assigned texts before each class period. Take notes and jot down any questions you might have, so you can ask them in class or on the discussion board on the class website. Please bring the textbook with you to each class session.

Discussion boards. To clarify questions regarding the syllabus, assignments, as well as substantive questions about assigned texts and the material discussed in class, please use the designated discussion boards on the course website outside of class time or tutorials. If something is unclear to you, chances are good that other students may have the same or a similar question! Using discussion boards rather than email ensures that everybody has equal access to the same information.

Lectures and Class Participation. The lectures will highlight the central concepts in the assigned chapters and illustrate these concepts with examples. We will also do practice examples in class. While attendance is not mandatory, it is highly recommended that you come to class regularly. Statistics is not a subject that you can study for a day or two before a test. The material from each week builds on the material from previous weeks. Keeping up with the readings and coming to class regularly is important and will help you to stay on track.

Weekly Homework Assignments. Over the course of the semester, you will complete 10 homework assignments in the Aplia learning environment (there are no homework assignments during mid-term test weeks 4 and 10). The assignments will be available from 12 p.m. on Wednesdays and can be completed until Friday of each week at 11:45 p.m., i.e. you will have a 60-hour window to complete these assignments. These homework assignments provide you with the opportunity to practice the material in a low-stakes environment.

To access the Aplia learning environment, create an online account through the Aplia course website (different from the Blackboard course website!) (url: TBA). You must have an access code from the textbook to register your account. To complete the weekly homework, you will log in using the ID and the password you created during online registration.

Each homework will consist of 10 to 15 problem sets. After answering a problem, you will receive instant feedback, and you will know which questions you answered correctly. You will then have two more opportunities to complete the problem set before proceeding to the next (the system will generate a new problem set focused on the same concepts). Your homework grade will be based on the highest of the three attempts (if you are satisfied with the score of your first attempt, you do not have to complete further attempts).

Because there is such a large window of time to complete the homework assignments (60 hours), there will be no opportunities for make-up assignments. Each homework is worth only a small fraction of your final mark (1.5%), so missing one or two homework assignments will not drastically lower your final grade. (*each homework assignment worth 1.5%, in total 15% of the final grade*).

Tutorials & Lab Assignments. Tutorials/labs for this class will take place every week in FE-36 (with the exception of weeks in which tests are given, i.e. week 4 and week 10). Please bring your textbook to each tutorial session.

During tutorials, the teaching assistants will help you with the exercises in the textbook, provide guidance on how to interpret the results and get you started on the lab assignments using SPSS. The tutorials also provide the opportunity for you to discuss any questions you might have about the class material with your fellow classmates and the teaching assistants.

You will work on the lab assignments during each tutorial. **Hard copies of these assignments are due** at three points during the semester **during tutorials in week 3, week 9, and week 13** (each based on work completed in tutorials during the preceding weeks). Please DO NOT email or put any lab assignments, under the door to my office or the TA offices.

We encourage students to complete these lab assignments during tutorial sessions. If you find that you need more time to complete the assignments, SPSS is also available on computers in the Robarts Map and Data Library (5th floor of Robarts Library). This computer lab is open most hours during regular Robarts Library hours (https://onesearch.library.utoronto.ca/library-info/ROBARTS). During some hours, the lab may be booked for special events. Please check the weekly schedule posted by the lab doors (not available online) if you plan to use the computer there. You can also check the availability of computers online (http://caf.icicle.utoronto.ca/CAFStatus/Web/Summary/MD).

Mid-term Tests. There will be two in-class tests in weeks 4 and 10 of the semester. The tests will consist of multiple choice and short answer questions. The first mid-term on Wednesday, February 2nd will cover material from weeks 1-3. The second test on Wednesday, March 15th will cover content from weeks 5-9 (*each mid-term test worth 22% of final grade, in total 44%*)

Final Exam. The final exam will cover material from the entire semester. The date, time and location of the final exam TBA. (*25% of final grade*)

Overview of grade components

		Each worth	Fraction of final grade
1 x	Syllabus quiz	0.5%	0.5%
1 x	Math-self assessment test	0.5%	0.5%
10 x	Homework assignments	1.5%	15%
3 x	Lab assignments	5.0%	15%
2 x	Mid-term tests	22%	44%
1 x	Final exam	25%	25%
	Total		100%

Percentage grades will translate to letter grades as follows (standard university grade scale):

Percentage	Letter Grade	Grade Point Value	*Percentage*	Letter Grade	Grade Point Value
90-100	A+	4.0	*67-69*	C+	2.3
85-89	A	4.0	*63-66*	C	2.0
80-84	A-	3.7	*60-62*	C-	1.7
77-79	B+	3.3	*57-59*	D+	1.3
73-76	B	3.0	*53-56*	D	1.0
70-72	B-	2.7	*50-52*	D-	0.7
			0-49	F	0.0

Required Materials

Textbook: Healey, Joseph F. and Steven G. Prus. 2016. Statistics: A Tool for Social Research, 3rd Canadian Ed. Nelson Education Ltd.

The textbook is available in the U of T bookstore. **IMPORTANT**: with the purchase of the text ($125.95), you will receive a password for Aplia, the online system this class uses for homework assignments. You may also purchase an Aplia account bundled with an electronic book ($59.95).

Calculator: You will need a calculator **for the tests and the final exam**. You may not use any type of phone as a calculator for the tests or the final exam. All you need is a calculator with basic mathematical functions (addition, subtraction, multiplication and division) and a square root function, preferably with a 10-digit display.

Labtop, tablet or smartphone (*not required*): We will use "Kahoot!" – a free game-based learning platform – to do practice examples in class. If you do not have access to a laptop, tablet or smartphone, you will still be able to complete these practice examples (please let me know if you have any questions or concerns). If you plan to use your smartphone, accessing "Kahoot!" through the app is recommended (available for Android phones and iPhones).

Communication

Email. Please use your University of Toronto email to communicate with me with regard to **personal matters**, or to communicate with the TAs. I will do my best to respond to your emails within 24 hours from Monday to Friday between 9 a.m. and 5 p.m.

Discussion boards. To clarify **questions** regarding the **syllabus**, **assignments**, as well as substantive questions about **assigned texts**, and the **material discussed in class**, please use the designated discussion boards on the course website. If something is unclear to you, chances are good that other students may have the same or a similar question. Using discussion boards ensures that everybody has equal access to the same information.

Office hours. Please do not hesitate to come and talk to me if you have any questions or concerns about the class, or if you need assistance. My regular office hours are on Wednesday afternoons from 3-4 p.m., and on Thursday mornings from 9-10 a.m. Please note, there will be no instructor office hours during week 3. During week 4 (mid-term test I), I will have additional office hours on Tue 01/31 9-10 a.m. & 4-5 p.m., and during week 10 (mid-term test II) on Mon 03/13 4-5 p.m. and Tue 03/14 1-2 p.m. (see course schedule). The TAs will also hold office hours (times and location TBA).

Late Work & Missed Deadlines

Lab assignments will be collected by the TAs during the tutorial sessions (please bring a hard copy). Late submission will result in a 5% deduction for each day the assignment is late (starting with the day the assignment is due, up to a maximum of 50% of the grade) unless you have a documented reason beyond your control (e.g. family emergency, illness) and provide the necessary documentation (see below). If you miss the deadline for a lab assignment, please notify me promptly to arrange for the submission of the lab assignment with the necessary documentation.

Make-up tests will only be given for legitimate, documented reasons. Please let me know ahead of time if you are going to miss a test and provide official documentation (see below) as soon as possible. We will schedule an alternative date for you to take the test. It is your responsibility to bring the necessary documentation (see below).

Please note: Under university regulations, make-up tests or extensions are only required to be provided in circumstances where the student informs the instructor of his/her circumstances within 7 days of the missed assignment due date or test.

Documentation. If you miss a deadline or a test, you must provide one of the following types of documentation:

1. **Verification of Student Illness or Injury form**, available at: http://www.illnessverification.utoronto.ca/index.php
   Please provide the form to your Physician, Surgeon, Nurse Practitioner, Registered Psychologist, or Dentist for completion.
2. **College registrar's letter**. This documentation is useful in cases of personal or family crisis, or any other problem that is not possible to document through the Verification of Student Illness or Injury form.
3. **Letter from Accessibility Services**. This documentation is useful for ongoing medical issues that require special accommodation.

Academic Integrity

Academic integrity is required of all students at the University of Toronto. If you are unsure about some aspects of academic integrity, please do not hesitate to talk to me. Academic dishonesty includes cheating, fabrication, plagiarism, and facilitating dishonesty. This includes the sharing of answers to homework or lab assignments, including on social media, via email, or in person. Know where you stand by reading the "Code of Behaviour on Academic Matters" in the Calendar of the Faculty of Arts and Science. **It is your responsibility to read this material and comply fully with it**.

- Code of Behaviour on Academic Matters: http://www.governingcouncil.utoronto.ca/Assets/Governing+Council+Digital+Assets/Policies/PDF/ppjun011995.pdf
- Students who commit an academic offence face serious penalties. University policy requires cases of academic dishonesty to be reported to the department chair and the university. You find additional information on the university's rules and expectations about academic integrity here: http://www.artsci.utoronto.ca/osai/students

Accessibility Needs

If you **require accommodations** or have any accessibility concerns, please visit *http://studentlife.utoronto.ca/as* or call Accessibility Services at *416-978-8060* the as soon as possible.

Course Schedule & Due Dates

All readings are from the Healey and Prus textbook

Week	Class	Tutorials	Topics & Readings	Assignment Due Dates & Tests
1	01/11	Thu 01/12 Fri 01/13	Introduction, level of measurement, basic descriptive statistics I **Reading**: Chapters 1 and 2 up to (not including) section 2.5 (p. 49)	**Homework W1** due on Fri 01/13, 11:45 p.m. **Math Self-assessment Test** & **Syllabus Quiz** due on Fri 01/13, 11:45 p.m.
2	01/18	Thu 01/19 Fri 01/20	Descriptive statistics II, measures of central tendency and spread **Reading**: Chapter 2 (section 2.5 and onward) and chapter 3	**Homework W2** due on Fri 01/20, 11:45 p.m.
3	01/25	Thu 01/26 Fri 01/27 *Test review*	The normal curve, z-scores, estimating probabilities **Reading**: Chapter 4 *Please note: No instructor office hours this week (replacement office hours see next week)*	**Homework W3** due on Fri 01/27, 11:45 p.m. **Lab assignement 1** due during tutorials
4	02/02	*No tutorials*	**Midterm-test I** covers material from weeks 1-3 ***Instructor office hours**: Tue 01/31 9-10 a.m. & 4-5 p.m.*	**Midterm-test I** (*no homework*)
5	02/08	Thu 02/09 Fri 02/10	Introduction to inference, sampling, sampling distribution, confidence intervals **Reading**: Chapters 5 and 6	**Homework W5** due on Fri 01/10, 11:45 p.m.
6	02/15	Thu 02/16 Fri 02/17	Introduction to hypothesis testing **Reading**: Chapter 7	**Homework W6** due on Fri 02/17, 11:45 p.m.
7	*READING WEEK – NO CLASS or TUTORIALS 02/22 - 02/24*			
8	03/01	Thu 03/02 Fri 03/03	Hypothesis testing: Two sample hypothesis tests for means and proportions **Reading**: Chapter 8	**Homework W8** due on Fri 03/03, 11:45 p.m.
9	03/08	Thu 03/09 Fri 03/10 *Test review*	Hypothesis testing: Analysis of Variance **Reading**: Chapter 9	**Homework W9** due on Fri 03/10, 11:45 p.m. **Lab assignement 2** due during tutorials

Week	Class	Tutorials	Topics & Readings	Assignment Due Dates & Tests
10	03/15	*No tutorials*	**Midterm-Test II** covers material from weeks 5-8 ***Additional instructor office hours**: Mon 03/13 4-5 p.m., Tue 03/14 1-2 p.m.*	**Midterm-Test II** (*no homework*)
11	03/22	Thu 03/23 Fri 03/24	Hypothesis testing: Chi square & bivariate measures of association at the nominal level **Reading**: Chapters 10 and 11	**Homework W11** due on Fri 03/24, 11:45 p.m.
12	03/29	Thu 03/30 Fri 03/31	Associations between interval/ratio-level variables: correlation, scatterplots and bivariate regression **Reading**: Chapter 13	**Homework W12** due on Fri 03/31, 11:45 p.m.
13	04/05	Thu 04/06 Fri 04/07	Introduction to multivariate regression **Reading**: Chapter 14	**Homework W13** due on Fri 04/07, 11:45 p.m **Lab assignement 3** due during tutorials
	Final Exam – date, time, and location TBA *Please note: The final exam will cover material from the entire semester.*			