SOC 210: Introduction to Social Statistics
Course Syllabus, WIN 2021 (42264)
University of Alberta

Instructor: Dr. Michelle Lee Maroto
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Office Hours: Weds. and Thurs. by appointment, see calendly.com/dr-maroto for bookings

Synchronous Course Meeting: Online via Zoom, W 3:00-4:00pm

Synchronous Lab Meetings: Online via Zoom, (H5) F 8:00am – 9:50am, (H6) F 11:00am – 12:50pm, (H7) F 1:00pm – 2:50pm, or (H8) F 4:00pm – 5:50pm

Teaching Assistants:

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Required Course Text:

Healey, Joseph F., Steven G. Prus, and Riva Lieflander. 2019. *Statistics: A Tool for Social Research, Fourth Canadian Edition*. Nelson Education.

NOTES: eBook available via the library. Earlier editions of this book are also fine to use for the course. The pages numbers might differ, but the chapters should match up.

Lab Sections:

This course includes a weekly lab section in addition to our lectures. Weekly lab sections will provide you with an opportunity to learn R, review homework assignments, and ask your teaching assistants questions about course material.

Prerequisite:

SOC 100 or consent of instructor.

Technology Requirements:

You will need access to (1) a scientific, non-programmable calculator and (2) the statistical program, R, to complete labs and certain homework assignments. We will discuss how to download and set-up this program in class.

This course meets through Zoom and uses eClass for posting content and submitting assignments. I will also make announcements via eClass, so please check the website regularly.

Policy about course outlines can be found in Course Requirements, Evaluation Procedures, and Grading of the University Calendar.

Teaching & Learning in a Time of COVID-19

The COVID-19 global pandemic has greatly changed how we work, study, and interact. We are not living in normal times, whatever your definition of normal may be. None of us signed up for this. Simply put, this is not the course I planned to teach nor is it the course you planned to take. Yet, here we are. This is the course we must have in order to keep people safe and alive. I know that many of you might be struggling with other responsibilities, anxieties, and hardships that can limit your course participation and performance. However, I also know that you are here to get an education and learn. I have, therefore, worked to create a balance in this course that allows for flexibility, while also creating an environment that supports my course goals and objectives for you.

Course Description

SOC 210 provides an introduction to statistical concepts and methods used by social scientists to analyze quantitative data. The course is divided into three parts. **Part I** covers descriptive statistics. During this part of the course we will learn about frequency distributions, measures of central tendency, and the normal curve. We will also address where data come from, along with data visualization. **Part II** covers inferential statistics. In Part II we will focus on probability and sampling, estimation procedures, hypothesis testing, and bivariate tables. **Part III** incorporates measures of association. During this part of the course we will cover bivariate measures of association for nominal and ordinal variables, along with bivariate and multivariate regression.

Course Goals

"Statistics" is often a scary word for students, particularly those who have had trouble with math courses in the past. Many students cringe at the word, or worse, go running in fear and put off taking a stats course until the last possible moment. My goal in this course is to show you that statistical methods of data analysis are not scary; they are useful, beneficial, vital, and they can even be (gasp!) fun.

Statistical knowledge does not come easy to everyone. This course will likely require hard work on your part, but that work comes with a huge payoff. The skills that you acquire in SOC 210 will be useful for you as both a producer and consumer of quantitative data because statistics are everywhere in our data driven world. Statistics permeate media news coverage and apply to all areas of life, from finance to shopping to sports. Statistical techniques also play a prominent role across a variety of occupations that include research, marketing, data management, and public policy jobs. Mastering basic statistical concepts and techniques will therefore improve your understanding of the social world, better equip you to enter various professions, and help you to make important life decisions.

Course Objectives

After successfully completing the course, you will be able to:

- understand what statistics do and why they are important;
- calculate and interpret measures of central tendency and variability in statistical data;
- understand the principles of sampling and probability;
- explain the logic of hypothesis testing;
- assess the strength of association between social science variables;
- compute and interpret regression equations;
- achieve basic competence in using statistical software;
- critically evaluate the data and methods used by social scientists; and
- assess the accuracy of statistical data in the media.

Course Structure

Lectures:
This course incorporates both weekly *asynchronous* (recorded) lectures and *synchronous* (live) course meetings.

Asynchronous material will be posted on eClass. Each week before Monday at 5:00pm I will post recorded segments on the course material, along with lecture slide handouts and lecture problem set worksheets. I expect you to view this material and complete the lecture problem sets before class on Wednesday.

Weekly synchronous Zoom meetings (Weds., 3:00-4:00pm) will be used to review weekly material and provide students with a place to ask questions. I will begin by briefly reviewing the asynchronous material for the week, sharing any announcements, and discussing assignments. I will than answer student questions regarding the week's material. The synchronous course meetings are optional, but I encourage you to attend. It is a good place to get extra help and build relationships with your classmates.

Lab Sessions:
This course also incorporates both weekly *asynchronous* (recorded) lab sessions and *synchronous* (live) lab meetings.

Lab sessions will be used to teach R content and support the lecture material. Similar to the lectures, asynchronous recorded lab sessions will be posted on eClass on the indicated weeks before Monday at 5:00pm. I will post recorded segments on the lab material, along R code and R exercises. I expect you to view this material before lab sessions on Friday. In addition to the asynchronous lab content, you will also have weekly synchronous lab sessions conducted via Zoom.

Weekly synchronous lab sessions (Fri., see page 1 for times) will be used to review R exercises and homework problem sets. The first hour of your lab session will be a synchronous meeting where TAs will either work through R exercises with you or review homework problem sets, depending on the week. The last 50 minutes will then be reserved for TA office hours. TAs will be available to answer questions during this time. Appointments are recommended. The synchronous lab sessions are optional, but I encourage you to attend.

Viewing Asynchronous Material:
It can be really easy to fall behind in online courses with asynchronous material. I have some suggestions for how to stay on top of things and get the most out of watching the asynchronous material.

- Take notes as you watch the material. This will help you to remember what you've watched.
- Much of the asynchronous material involves working through various example problems. I highly recommend working through the problems as you watch the lectures.
- Pause the lectures after each problem is introduced, work through it yourself, and then return to the lecture to check your answers. By the end of the lecture, you will have completed your weekly lecture problem set.
- Use the weekly forums to ask questions about the material.

Attending Synchronous Zoom Meetings:
We're getting more used to it, but meeting online can still be a challenging experience. I have some suggestions for improving that experience and getting the most out of these meetings.

- Treat this like an in-person class. Come to class prepared, ready to take notes and pay attention.
- Create a quiet study space for class time with limited distractions. I recognize that personal circumstances and living situations might not allow for this, but please do the best that you can.
- Please use your chosen name (what you would like to be called) on-screen. This will make it easier to call on you and develop relationships throughout the semester.
- Be respectful of your classmates. Mute yourself when you're not speaking and use the "hand raise" and chat functions to ask questions.

Course Policies

Be respectful. Be honest. Be kind.

Contacting Me:
I highly recommend bringing any questions you have to our weekly synchronous meeting or posting them within the appropriate eClass discussion forum. However, if you have a personal question that can be answered with a couple sentences and this question has not already been answered on the syllabus or course website, you may contact me through email. If your question requires a more detailed or lengthy response, I suggest that you raise the question in class, attend my office hours, or make an appointment to meet with me. Please be aware that I check email from 9:00-5:00 on weekdays but not on weekends.

Email Etiquette:
Remember that email communication for all courses should be formal and professional. Make sure to use proper spelling, grammar, and punctuation.

Absences and Missed Assignments:
You are not required to contact me if you miss a weekly synchronous meeting or lab session. I understand that extenuating circumstances may limit your ability to attend these meetings, which is why I am delivering most of the material asynchronously. However, please contact me or your TA as soon as possible if you are unable to complete an assignment on-time so that we can discuss arrangements for submitting the assignment. I would like to avoid late penalties this semester if possible and I will work with you to set up a plan for turning in assignments if you fall behind. I do recognize, though, that late penalties may be necessary in some situations.

As per the University of Alberta Calendar: *Excused absence for a missed exam is not automatic and is granted at the discretion of the instructor (in the case of term exams) or the student's Faculty (in the case of final exams). Instructors and Faculties are not required to grant excused absences for unacceptable reasons that include, but are not limited to personal events such as vacations, weddings, or travel arrangements.* ***When a student is absent from a term or final exam without acceptable excuse, a final grade will be computed using a raw score of zero for the exam missed.*** *Any student who applies for or obtains an excused absence by making false statements will be liable under the Code of Student Behaviour.*

Accessibility Resources:
Students who require accommodations in this course due to a disability affecting mobility, vision, hearing, learning, mental, or physical health are advised to discuss their needs with Student Accessibility Resources, SUB 1-80, 492 · 3381 (phone) or 492 · 7269 (TTY).

Electronic Recording of Lectures:
As per the University Calendar: *Audio or video recording, digital or otherwise, of lectures, labs, seminars or any other teaching environment by students is allowed only with the prior written consent of the instructor or as apart of an approved accommodation plan. Student or instructor content, digital or otherwise,created and/or used within the context of the course is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the content author(s).*

Academic Integrity:
Per GFC 24.3(2): *The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Code of Student Behaviour (www.governance.ualberta.ca) and avoid any behaviour that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.* All students should consult the academic integrity website.

Basic Needs Security:
If you have difficulty affording groceries or accessing sufficient food to eat every day, or if you lack a safe and stable place to live, and you believe this many affect your performance in this course, please contact the Office of the Student Ombuds or the Dean of Students for support. The Campus Food Bank also offers multiple programs to help with food insecurity. Additionally, please talk to me if you are comfortable in doing so. This will enable me to provide any resources that I might possess.

Children and Caregiving Responsibilities:
Children are always welcome within our synchronous meetings. I understand that students have a variety of caregiving responsibilities, which have only increased due to the pandemic. Please let me know if this is something that will affect your coursework.

Pet Visits:
Pets are always welcome within our synchronous meetings. In fact, I will be pretty disappointed if you have a pet and I don't get to meet them this semester.

Colonial History Acknowledgment:
The University of Alberta is located in Amiskwacîwâskahikan on Treaty 6 territory, the territory of the Papaschase, and the homeland of the Métis Nation. The University of Alberta respects the histories, languages, and cultures of the First Nations, Métis, Inuit, and all First Peoples of Canada, whose presence continues to enrich our vibrant community.

Learning and Working Environment:
The Faculty of Arts is committed to ensuring that all students, faculty, and staff are able to work and study in an environment that is safe and free from discrimination and harassment. It does not tolerate behavior that undermines that environment.

Course Requirements

Grade Breakdown:
Your grade in this course will be based upon four aspects, each worth a part of the grade:

- Lecture Problem Sets: 10% (10 assignments; 1% each)
- Homework Problem Sets: 40% (5 assignments; 8% each)
- Lab Assignments: 20% (2 assignments; 10% each)
- Final Exam: 30%
- **Total:** 100%

Grading Policy:
Four components constitute your grade for this course: lecture problem sets, homework problem sets, lab assignments, and a final exam. If you are having issues keeping up with course work for any reason, notify me as soon as you start to have a problem. We will be more likely to come to an acceptable arrangement if we can attack the problem sooner rather than later. Counseling and Clinical Services are also available.

Lecture Problem Sets:
Each weekly prerecorded lecture will contain a set of example problems for you to complete. These will be numbered within the lecture slides and posted as a handout. I will also be going through the problems and answering them within the lecture. In non-COVID-19-times, we would be working through these problems together in class. Since we don't have that option this semester, I'm requiring students submit the problems that they have worked on.

Lecture problem sets will be graded as credit or no credit. To receive credit you must show that you at least attempted each problem by including some work. You do not have to provide the correct answer, but you need to show that you tried to work through the problem. There will be 12 lecture problem sets this semester (one for each week). You must complete 10 of the 12 to receive full credit for this portion of your grade. Each lecture problem set is worth 1% of your final grade for a total of 10%. Lecture problem sets must be handwritten (not typed) and submitted as pdf files. They can be completed on paper by hand and scanned or photographed to create pdf files. They can also be completed by hand electronically using a stylus and saved as pdf files. Lecture problems sets must be uploaded to the appropriate eClass assignment page by Friday at 11:59pm on the week they are assigned.

Homework Problem Sets:
You will have five homework problem set assignments in this course. Homework problem sets will include computations and written answers with problems similar to those in the lecture problem sets. Each homework problem set is worth 8% of your final grade for a total of 40%. Homework problem sets must be handwritten (not typed) and submitted as pdf files. They can be completed on paper by hand and scanned or photographed to create pdf files using Apps, such as Scannable (iOS) or Genius Scan (Android). They can also be completed by hand electronically using a stylus and saved as pdf files. Homework problems sets must be uploaded to the appropriate eClass assignment page by Friday at 11:59pm on the week they are assigned.

Lab Assignments:
You will have two lab assignments to complete in this course. The lab assignments will involve analyzing data in R and reporting your results in a clear and organized manner. Each lab assignment is worth 10% of your final grade for a total of 20%. Lab assignments must be typed and submitted as R Markdown files, including both code and output. Lab assignments must be uploaded to the appropriate eClass assignment page by Friday at 11:59pm on the week they are assigned.

Final Exam:
You will have one open-book final exam in this course. The final exam will include both computations and written answers. The final exam will be cumulative and take place during the final examination period. You will receive a copy of the final exam 48 hours before the given exam time. It must then be submitted to eClass by 11:59pm on the given final exam day (Tues., April 20, 2021). The exam is worth 30% of your final grade.

Grade Conversion Scale:

Descriptor	Percentage Grade	Letter Grade	Grade Point Value
Excellent	96 - 100	A+	4.0
	91 - 95	A	4.0
	86 - 90	A-	3.7
Good	81 - 85	B+	3.3
	76 - 80	B	3.0
	71 - 75	B-	2.7
Satisfactory	66 - 70	C+	2.3
	62 - 65	C	2.0
	58 - 61	C-	1.7
Poor	54 - 57	D+	1.3
Minimal Pass	50 - 53	D	1.0
Failure	0 - 49	F	0.0

Course Schedule & Readings
(TENTATIVE)

Part 1: Descriptive Statistics

Week 1:

Lecture Topics & Reading:

- Welcome to SOC 210!
- Math Review, Statistics, Variables, and Relationships
- Healey, Prus, and Lieflander: Introduction and Ch. 1

Lab Topics:

- NO LABS

Assignments: *Due Friday Jan. 15th by 11:59pm*

- Lecture Problem Set #1

Week 2:

Lecture Topics & Reading:

- Describing Data
- Healey, Prus, and Lieflander: Ch. 2

Lab Topics:

- Introduction to R
- R Exercises

Assignments: *Due Friday Jan. 22nd by 11:59pm*

- Lecture Problem Set #2

Week 3:

Lecture Topics & Reading:

- Measures of Central Tendency and Dispersion
- Healey, Prus, and Lieflander: Ch. 3

Lab Topics:

- R Exercises

Assignments: *Due Friday Jan. 29th by 11:59pm*

- Lecture Problem Set #3
- Homework Problem Set #1

Week 4:

Lecture Topics & Reading:

- The Normal Curve
- Healey, Prus, and Lieflander: Ch. 4

Lab Topics:

- Homework Problem Set #1 Review

Assignments: *Due Friday Feb. 5th by 11:59pm*

- Lecture Problem Set #4

Part 2: Inferential Statistics

Week 5:

Lecture Topics & Reading:

- Sampling and Estimation
- Healey, Prus, and Lieflander: Chs. 5 and 6

Lab Topics:

- Descriptive Statistics in R
- R Exercises

Assignments: *Due Friday Feb. 12th by 11:59pm*

- Lecture Problem Set #5
- Homework Problem Set #2

Week 6:

Reading Week
Have a lovely break!

Week 7:

Lecture Topics & Reading:

- Hypothesis Testing (One Sample)
- Healey, Prus, and Lieflander: Ch. 10 (Ch. 7 in older editions)

Lab Topics:

- Homework Problem Set #2 Review

Assignments: *Due Friday Feb. 26th by 11:59pm*

- Lecture Problem Set #6
- Lab Assignment #1

Week 8:

Lecture Topics & Reading:

- Hypothesis Testing (Two Samples)
- Healey, Prus, and Lieflander: Ch. 11 (Ch. 8 in older editions)

Lab Topics:

- Hypothesis Testing in R
- R Exercises

Assignments: *Due Friday March 5th by 11:59pm*

- Lecture Problem Set #7
- Homework Problem Set #3

Week 9:

Lecture Topics & Reading:

- Bivariate Tables and ANOVA
- Healey, Prus, and Lieflander: Ch. 12 (Ch. 9 in older editions)

Lab Topics:

- Homework Problem Set #3 Review

Assignments: *Due Friday March 12th by 11:59pm*

- Lecture Problem Set #8

Week 10:

Lecture Topics & Reading:

- Chi-square Test
- Healey, Prus, and Lieflander: Ch. 7 (Ch. 10 in older editions)

Lab Topics:

- ANOVA and Chi-square in R
- R Exercises

Assignments: *Due Friday March 19th by 11:59pm*

- Lecture Problem Set #9
- Homework Problem Set #4

Part 3: Measures of Association

Week 11:

Lecture Topics & Reading:

- Bivariate Measure of Association for Nominal and Ordinal Variables
- Healey, Prus, and Lieflander: Chs. 8-9 (Chs. 11-12 in older editions)

Lab Topics:

- Homework Problem Set #4 Review

Assignments: *Due Friday March 26th by 11:59pm*

- Lecture Problem Set #10

Week 12:

Lecture Topics & Reading:

- Association, Correlation, and Bivariate Regression
- Healey, Prus, and Lieflander: Ch. 13

Lab Topics:

- NO LABS

Assignments: *Due Friday April 2nd by 11:59pm*

- Lecture Problem Set #11

Week 13:

Lecture Topics & Reading:

- Multiple Regression
- Healey, Prus, and Lieflander: Ch. 14

Lab Topics:

- Association and Regression in R
- R Exercises

Assignments: *Due Friday April 9th by 11:59pm*

- Lecture Problem Set #12
- Homework Problem Set #5

Week 14:

Lecture Topics & Reading:

- Regression Extensions

Lab Topics:

- R Exercises
- Homework Problem Set #5 Review

Assignments: *Due Friday April 16th by 11:59pm*

- Lab Assignment #2

Finals Week:

Final Exam Due Date: Tuesday, April 20, 2021 by 11:59pm

SOC 210: Course Schedule WIN 2021						
		Lecture Topic	**Reading**	**Assignments**	**Prerecorded Lab Sessions**	**TA Lab Sessions**
Week 1 01.11 - 01.17	Descriptive Statistics	Welcome, Math Review, and Variables	Ch. 1	LP #1	----------	**NO LABS**
Week 2 01.18 - 01.24		Describing Data	Ch. 2	LP #2	Introduction to R	R Exercises
Week 3 01.25 - 01.31		Measures of Central Tendency and Dispersion	Ch. 3	LP #3 / HW #1	----------	R Exercises
Week 4 02.01 - 02.07		The Normal Curve	Ch. 4	LP #4	----------	HW #1 Review
Week 5 02.08 - 02.14	Inferential Statistics	Probability, Sampling, and Estimation	Chs. 5-6	LP #5 / HW #2	Descriptive Statistics in R	R Exercises
Week 6 02.15 - 02.21		**READING WEEK - NO CLASS**				
Week 7 02.22 - 02.28		Hypothesis Testing (One Sample)	Ch. 10	LP #6 / Lab #1	----------	HW #2 Review
Week 8 03.01 - 03.07		Hypothesis Testing (Two Samples)	Ch. 11	LP #7 / HW #3	Hypothesis Testing in R	R Exercises
Week 9 03.08 - 03.14		Bivariate Tables and ANOVA	Ch. 12	LP #8	----------	HW #3 Review
Week 10 03.15 - 03.21		Chi-square	Ch. 7	LP #9 / HW #4	ANOVA and Chi-square in R	R Exercises
Week 11 03.22 - 03.28	Measures of Association	Measures of Association for Nominal and Ordinal Variables	Ch. 8-9	LP #10	----------	HW #4 Review
Week 12 03.29 - 04.04		Correlation and Bivariate Regression	Ch. 13	LP #11	----------	**NO LABS**
Week 13 04.05 - 04.11		Multiple Regression	Ch. 14	LP #12 / HW #5	Association and Regression in R	R Exercises
Week 14 04.12 - 14.18		Regression Extensions	----------	Lab #2	----------	R Exercises / HW #5 Review
Finals Weeks 04.19 - 04.30	**FINAL EXAM DUE DATE: April 20, 2021 by 11:59pm**					