

SOC 210: Introduction to Social Statistics
Course Syllabus, FALL 2015 (55858)
University of Alberta

Instructor: Dr. Michelle Lee Maroto
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Office: 6-23 Tory Building
Office Hours: W 2:00-4:00pm, and by appointment

Lecture: CAB 265, T R 2:00pm - 3:20pm
Labs: T B 39, (D1) M 9:00am – 10:50am, (D2) M 11:00am – 12:50pm,
(D3) M 1:00pm – 2:50pm, or (D4) M 3:00pm – 4:50pm

Teaching Assistants:

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Required Course Text:

Healy, Joseph F. and Steven G. Prus. 2015. *Statistics: A Tool for Social Research, Third Canadian Edition*. Nelson Education.

NOTE: Earlier editions of this book are also fine 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 to use in lectures, labs, and on your exams and (2) the statistical program, R (<http://www.r-project.org/>), to complete labs and certain homework assignments. We will discuss how to download and set-up this program in class.

This course utilizes eClass for the posting of certain content. I will also make announcements via eClass, so please check the website regularly.

Policy about course outlines can be found in §23.4(2) of the University Calendar.

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 Policies

Contacting Me:

If you have a question that can be answered with a couple sentences, you may contact me through email. If your question requires a more detailed or lengthy response, I suggest that you attend my office hours or make an appointment to meet with me. Please be aware that I check email most weekdays but not always on weekends. If you email me, you can expect a response within 24 hours, unless it arrives on Friday.

Email Etiquette:

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

Absences:

If you are going to be absent from lecture, you do not need to contact me unless you will be missing an exam. However, if you miss a lecture, I suggest contacting another student in the class to copy his or her notes from that lecture.

As per §23.5.6 of 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.

If you miss an exam or are unable to complete assignments on the appropriate date because of an incapacitating illness, you must contact me within two business days or as soon as you are physically able to do so. You must also complete a Medical Declaration Form for students in Arts or a Statutory Declaration for students from other Faculties to be completed by your Faculty Office or the Registrar's Office. Supporting medical documentation, such as a University of Alberta Medical Statement signed by a doctor, is also helpful. You should submit appropriate documentation for other acceptable absences. This might include a copy of the death certificate for a death in the family, a letter from the church or pastor for a religious conflict, or a copy of the accident report for a car accident. For other reasons, please consult with me for appropriate documents.

Disability Accommodations:

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 Services](#), SUB 1-80, 492 · 3381 (phone) or 492 · 7269 (TTY). Students registered with SAS who will be using accommodations in the classroom or writing exams through SAS are required to provide a "Letter of Introduction."

Electronic Recording of Lectures:

As per §24.3 of the University Calendar: *Audio or video recording of lectures, labs, seminars or any other teaching environment by students is allowed only with the prior written consent of the instructor or as a part of an approved accommodation plan. Recorded material 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).*

Lecture Slides and Handouts:

I post handouts that outline the problems for each class on the course website before lecture, and I post lecture slides on the website after lecture for you to review. I share the slides to supplement, not to replace, note-taking in class. Oftentimes slides will contain formulas, figures, and tables that you may want to refer back to when reviewing the material.

Plagiarism and Cheating:

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. Please see the following website for more details: <http://www.governance.ualberta.ca/StudentAppeals/DontCheatsheet.aspx>.*

Course Requirements

Grade Breakdown:

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

- Exams: 60% (3 exams; Exam 1 - 15%, Exam 2 - 20%, Exam 3 - 25%)
- Homework Problem Sets: 15% (5 assignments; 3% each)
- Lab Assignment: 20%
- Participation: 5%
- **Total:** 100%

Grading Policy:

Four components constitute your grade for this course: exams, homework problem sets, a lab assignment, and participation. 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. Please see the following website for more details: uofa.ualberta.ca/current-students/counselling.

Exams:

You will have three in-class closed-book exams in this course. The first exam, which is worth 15% of your total grade, will cover Part I of the course on descriptive statistics. It will take place during Week 5. The second exam, which is worth 20% of your total grade, will primarily cover Part II of the course on inferential statistics. It will take place during Week 10. The third exam, which is worth 25% of your total grade, will primarily cover Part III of the course on measures of association. It will take place during the final examination period. Example exam questions will be reviewed in class and made available on the course website. Exams are worth 60% of your final grade.

Problem Sets:

You will have five homework problem set assignments in this course. Homework problem sets should be submitted during lab sections on the date listed on the syllabus. Problem sets are not due until the end of your lab section, but they can be turned in earlier. Your TAs will then review the majority of each assignment during the lab section. Homework problem sets are worth 15% of your final grade. Late problem sets will be penalized. However, a problem set will not be considered late if it is submitted before 6:00pm on Monday of the assigned week.

Lab Assignment:

You will have one lab assignment to complete in this course. The lab assignment will involve analyzing data and reporting your results in a clear and organized manner. Labs must be handed in at the beginning of lecture on the lab due date. We will go over example lab assignments in class. The lab assignment is worth 20% of your final grade. Late assignments will be penalized.

Participation:

Your participation grade is based on your in-class participation during lecture and in lab sessions, as well as on your online participation in the discussion forum.

I expect you to be mentally and physically present and to participate in each lecture and lab session. In-class participation includes speaking up in class, asking and answering questions, and completing group work. I expect you to come to class with a calculator, writing tools, and paper, prepared to work on example problems together. I also expect everyone in this class to be respectful and courteous. Disruptive and disrespectful behavior, such as talking out of turn, listening to music, using electronic devices for non-class purposes, sleeping through class, and leaving early without first notifying the instructor, will negatively affect your grade.

In addition to participating in class, you are also required to submit at least one post to the discussion forum on the eClass website before the last day of class. This post will account for most of your participation grade. The goal of the discussion forum is to connect what we learn in class to current issues discussed in the media. For your post you will find a news article that applies statistics. You should summarize the article, discuss the data, and talk about the methods. You may also use additional discussion forums to ask and answer questions about course material. Submitting extra posts is a good way to make up for missed classes or lab sessions. More details about the assignment are posted on the website. In-class and online participation is worth 5% 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: Welcome!

Mon. (Aug. 31st): No Lab Sessions

Tues. (Sept. 1st): Welcome to SOC 210!

Thurs. (Sept. 3rd): Math Review and Studying Statistics

- Healy and Prus: Introduction

Week 2:

Mon. (Sept. 7th): No Lab Sessions

Tues. (Sept. 8th): Statistics, Variables, and Relationships

- Healy and Prus: Ch. 1

Thurs. (Sept. 10th): Describing Data

- Healy and Prus: Ch. 2 (2.1-2.6)

Week 3:

Mon. (Sept. 14th): Homework Assignment #1 Due and R Intro

Tues. (Sept. 15th): Visual Descriptions of Data

- Healy and Prus: Ch. 2 (2.7)

Thurs. (Sept. 17th): Measures of Central Tendency and Dispersion

- Healy and Prus: Ch. 3
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Week 4:

Mon. (Sept. 21st): R Exercises

Tues. (Sept. 22nd): Measures of Central Tendency and Dispersion

- Healy and Prus: Ch. 3

Thurs. (Sept. 24th): The Normal Curve

- Healy and Prus: Ch. 4
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Week 5:

Mon. (Sept. 28th): Homework Assignment #2 Due

Tues. (Sept. 29th): Review and Catch-up

Thurs. (Oct. 1st): EXAM #1

Part 2: Inferential Statistics

Week 6:

Mon. (Oct. 5th): R Exercises

Tues. (Oct. 6th): Probability and Sampling

- Healy and Prus: Ch. 5

Thurs. (Oct. 8th): Estimation Procedures

- Healy and Prus: Ch. 6

Week 7:

Mon. (Oct. 12th): No Lab Sessions - Thanksgiving

Tues. (Oct. 13th): Probability, Sampling, and Estimation

- Healy and Prus: Chs. 5 and 6

Thurs. (Oct. 15th): Hypothesis Testing (One Sample)

- Healy and Prus: Ch. 7
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Week 8:

Mon. (Oct. 19th): Homework Assignment #3 Due

Tues. (Oct. 20th): Hypothesis Testing (One Sample)

- Healy and Prus: Ch. 7

Thurs. (Oct. 22nd): Hypothesis Testing (Two Samples)

- Healy and Prus: Ch. 8
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Week 9:

Mon. (Oct. 26th): R Exercises

Tues. (Oct. 27th): Bivariate Tables and ANOVA

- Healy and Prus: Ch. 9

Thurs. (Oct. 29th): Chi-square Test

- Healy and Prus: Ch. 10
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Week 10:

Mon. (Nov. 2nd): Homework Assignment #4 Due

Tues. (Nov. 3rd): Review and Catch-up

Thurs. (Nov. 5th): EXAM #2

Week 11: No Classes - Have a lovely Reading Week!

Mon. (Nov. 9th): No Lab Sessions

Tues. (Nov. 10th): No Class

Thurs. (Nov. 12th): No Class

Part 3: Measures of Association

Week 12:

Mon. (Nov. 16th): R Exercises

Tues. (Nov. 17th): Bivariate Measure of Association for Nominal Variables

- Healy and Prus: Ch. 11

Thurs. (Nov. 19th): Bivariate Measure of Association for Ordinal Variables

- Healy and Prus: Ch. 12
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Week 13:

Mon. (Nov. 23rd): R Exercises

Tues. (Nov. 24th): Association, Correlation, and Bivariate Regression

- Healy and Prus: Ch. 13

Thurs. (Nov. 26th): Bivariate and Multivariate Regression

- Healy and Prus: Chs. 13 and 14
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Week 14:

Mon. (Nov. 30th): Homework Assignment #5 Due and R Exercises

Tues. (Dec. 1st): Multivariate Regression

- Healy and Prus: Ch. 14

Thurs. (Dec. 3rd): Review and Catch-up

- Final Lab Assignment Due in Class
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Finals Week:

Tentative Final Exam Date: Monday, December 14, 2015 at 2:00pm

Sociology Deferred Final Exam Date: Saturday, January 16th, 2016 at 9:00am in BUS 1 06

Note: As per §23.3(2)c of the University Calendar: *A deferred final examination will not be approved if a student (a) has not been in regular attendance where attendance and/or participation are required, and/or, (b) excluding the final exam, has completed less than half of the assigned work.*

SOC 210: Course Schedule FALL 2015

Week (Sun. - Sat.)	General Topic	Monday		Tuesday		Thursday		
		Labs	Topic	Topic	Reading / Assignments	Topic	Reading / Assignments	
Week 1 08.30 - 09.05	Descriptive Statistics	NO LABS	Welcome to SOC 210!	Statistics, Variables, Relationships	Healy & Prus Ch. 1	Math Review & Studying Statistics	Healy & Prus Introduction	
Week 2 09.06 - 09.12		NO LABS	Visual Descriptions of Data	Measures of Central Tendency and Dispersion	Healy & Prus Ch. 2 (2.7)	Describing Data	Healy & Prus Ch. 2 (2.1-2.6)	
Week 3 09.13 - 09.19		HW #1 Due/ R Intro	Measures of Central Tendency and Dispersion	Measures of Central Tendency and Dispersion	Healy & Prus Ch. 3	The Normal Curve	Measures of Central Tendency and Dispersion	Healy & Prus Ch. 3
Week 4 09.20 - 09.26		Practice Problems/ R Exercises	Review and Catch-up	Review and Catch-up	Healy & Prus Ch. 3	EXAM 1	Healy & Prus Ch. 4	
Week 5 09.27 - 10.03		HW #2 Due	Probability and Sampling	Probability and Sampling	Healy & Prus Ch. 5	Estimation Procedures	Healy & Prus Ch. 6	
Week 6 10.04 - 10.10	Inferential Statistics	Practice Problems/ R Exercises	Probability, Sampling, and Estimation	Healy & Prus Chs. 5 and 6	Hypothesis Testing (One Sample)	Hypothesis Testing (One Sample)	Healy & Prus Ch. 7	
Week 7 10.11 - 10.17		NO LABS	Hypothesis Testing (One Sample)	Hypothesis Testing (One Sample)	Healy & Prus Ch. 7	Hypothesis Testing (Two Samples)	Healy & Prus Ch. 8	
Week 8 10.18 - 10.24		HW #3 Due	Bivariate Tables and ANOVA	Bivariate Tables and ANOVA	Healy & Prus Ch. 9	Chi-square Test	Healy & Prus Ch. 10	
Week 9 10.25 - 10.31	Measures of Association	Practice Problems/ R Exercises	Review and Catch-up	Review and Catch-up	EXAM 2	EXAM 2		
Week 10 11.01 - 11.07		HW #4 Due	NO CLASS	NO CLASS	NO CLASS	NO CLASS		
Week 11 11.08 - 11.14		NO LABS	Bivariate Measures of Association for Nominal Variables	Bivariate Measures of Association for Ordinal Variables	Healy & Prus Ch. 11	Bivariate Measures of Association for Ordinal Variables	Healy & Prus Ch. 12	
Week 12 11.15 - 11.21		Practice Problems/ R Exercises	Association, Correlation, and Bivariate Regression	Association, Correlation, and Bivariate Regression	Healy & Prus Ch. 13	Bivariate and Multivariate Regression	Healy & Prus Ch. 13 & 14	
Week 13 11.22 - 11.28		Practice Problems/ R Exercises	Multivariate Regression	Multivariate Regression	Healy & Prus Ch. 14	Review and Catch-up	Lab Assignment Due	
Week 14 11.29 - 12.05	HW #5 Due/ R Exercises							
Finals Weeks 12.06 - 12.19	EXAM 3: December 14, 2015 @ 2:00pm (Tentative Exam Date)							