Quantitative Techniques in Sociology I
Sociology 321 (4 credits)
Spring 2021

Lectures:	TU,TH9.10-10.25
Labs:	TU10.35-11.25
Instructor:	Alair MacLean (she/her/hers) VMMC 202H 360-546-9177 alair.maclean@wsu.edu
Student hours:	TU,TH 13:30-14:30 Sign up for student hours at https://wejoinin.com/sheets/vxvxm (or by appointment)
Teaching assistant:	Shain Wright (they/them/theirs) VMMC 207 360-904-0215 shain.wright@wsu.edu
Student hours:	M 9:00-11:30 (virtual on Zoom: https://wsu.zoom.us/j/91298186405) T 11:30-13:00 (in person) (or by appointment -- virtual or in person)

Prerequisites

Sophomore standing and basic algebra skills. If you have limited math skills, you will need to work harder to do well in this class than those students who are comfortable with algebra. For those who are in this situation, I highly recommend that you sign up for MATH 499: Special Problems, which is a variable-credit class providing flexible one-on-one help for stats students.

Course Description and Goals

This is a course designed to introduce students of sociology, public affairs, and the social sciences, more broadly, to statistical analysis. This class consists of two parts. First, you will learn about descriptive statistics, the numbers (means, standard deviations, proportions, correlations, and regression coefficients) that describe a collection of data. Then you will learn about inferential statistics, which use the characteristics of a sub-set of the population (or a sample) to make conclusions about the larger population. There are a limited set of statistics that we will focus on in this class, and you will learn how to apply an even smaller set of skills to each of these. The table on the next page graphically presents the statistics that you will learn and the skills that will be applied to each. (We will touch on a few other statistics, including the mode and median, as well as learn ways of graphically summarizing these statistics, but the bulk of the course will be spent on the topics in the table. We will most likely not cover regression as fully as we will means and proportions.)

We will teach you the statistical skills according to a variation of a teaching method labeled "you/y'all/we," in which you first try to solve statistical exercises on your own, then in peer

groups, and then finally as a full class. If you are interested in more detail on this method, you are encouraged to read an article from 2014 in the *New York Times*, titled "Why do Americans stink at math?"

The fact that by the end of the semester you will be able to apply these skills to these statistics will enable you to begin to: read popular applications of statistics in the media with a critical eye, assess the use of statistics in the academic literature, and use statistical tools to answer the questions that interest you.

Table 1 presents in graphical form the content of the course. You may also find it helpful to look at the flow chart on the inside cover of the textbook.

Table 1. Statistics and skills to be learned in Soc. 321

		Skills		
		Calculating	Hypothesis tests	Confidence intervals
Statistics	Means			
	Proportions			
	Standard deviation			
	Correlation			
	Cross-tabs			
	Regression			

Table 2. WSU Learning goals

WSU Learning Goals of the Baccalaureate	**Student Learning Outcomes: At the end of this course, students should be able to:**	**Course Topics/Dates The following topic(s)/dates(s) will address this outcome:**	**Evaluation of Outcome: This outcome will be evaluated primarily by:**
Information Literacy	Locate, categorize, critique, and evaluate sources of information	Weeks 5-6; weeks 9-10; weeks 12-13	Computer assignments
Quantitative Reasoning	Draw appropriate conclusions based on the quantitative analysis and presentation of social science data	All dates	In-class exercises, exams

Course Materials
NOTE: This book is on reserve in the library.
Required:

Moore, David S. 2015. *The Basic Practice of Statistics*, Seventh Edition. New York: W.H. Freeman. [*Text*]

Web Resources:
There is a web-site for the textbook (http://macmillanlearning.com/catalog/studentresources/bps7e), which includes free and open resources to assist you.

Calculators:
We do not require or provide instruction in how to use calculators to perform statistical or graphing operations. On the homework and exams, you will need to perform basic mathematical manipulations (e.g., adding, subtracting, multiplying, dividing, squaring, and taking square roots), which can be achieved with any calculator. Students are not allowed to use the calculator on their phone during exams.

Grading and Evaluation
These are the standards for your overall grade: A 93-100; A- 90-92; B+ 87-89; B 83-86; B- 80-82; C+ 77-79; C 73-76; C- 70-72; D+ 69-67; D 60-69; F <60. To get a sense of the meaning of these letter grades, please refer to the "Explanation of Grading System" created at the University of North Carolina at Chapel Hill. (http://registrar.unc.edu/academic-services/grades/explanation-of-grading-system/)

Late assignments: Assignments will be considered late if they are submitted after the start of lab or lecture, and will be marked down 10 percent for each calendar day they are late.

I calculate official grades twice: at mid-term and after finals. You will note that the points available for the different components of the grade are non-standard. The number of points does not affect your overall grade in the class, but has been statistically demonstrated to reduce sadness.

If you wish, you may track your progress toward your final grade using the table below:

	Percent	Total points	Your points	Your percent
Lab attendance	10%	69		
In-class quizzes (best 15)	15%	103		
Exams (best 2 of 3)	40%	274		
Computer assignments	15%	103		
Final exam	20%	137		
Total	100%	685		

Required course work:
Out of class exercises (10 percent)
One of the primary goals of this course is to give you the skills to answer statistical questions. In order to give you practice, exercises are drawn from the *Basic Practice of Statistics* textbook and are outlined in the syllabus. Each week, you should make a good faith effort to do the required reading and to complete the exercises before coming to lab. At the beginning of lab, the TA will check to make sure you have at least tried to solve each of the assigned exercises. You will get

full credit for having tried to solve all the exercises. You must be present at the beginning of lab to get credit for these exercises. During the lab, the TA will review the correct approach and answers to the exercises.

Quizzes (15 percent)
Research has shown that students learn concepts more thoroughly if they have to recall those concepts often. Therefore, at the beginning of each lecture, you will be asked to solve one or two statistical exercises that will be drawn from the exercises that you completed out of class, reviewed in the lab, and that draw on the lecture from the previous class. This strategy will increase your understanding and retention of the assigned material.

Exams (60 percent)
There will be three non-cumulative, closed-book examinations held in class. I will drop 1 of the 3 mid-term exam grades for the calculation of your final grade. Because only 2 of the exams count towards your final grade, I do not give make up exams. If you miss one of the exams for any reason this is the grade that is dropped. A second missed exam cannot be made up for any reason. (If you complete all three exams, I will count the two highest grades.) There will also be a cumulative final exam during the final exam period. Exams will include a combination of multiple choice and short answer items. They will focus on material assigned for and discussed in the lectures and labs leading up to the exam.

Computer assignments (15 percent)
Another goal of this course is to introduce you to the computer programs that are used perform statistical operations. During the course of the semester, there will be three assignments that will ask you to produce and analyze data using the statistical program Stata. This program is available in the computer lab. You may also purchase copies of the program through the University gradplan for a relatively reasonable price. See me if you are interested. You will have the opportunity to work on these assignments in the lab the week before the assignments are due.

Labs
The labs have three purposes:
1. Reviewing the out-of-class exercises: The TA will review the out-of-class exercises from which the in-class quizzes will be drawn the following week;
2. Reviewing quizzes and exams: The lab represents the best avenue for getting detailed feedback on your quizzes or exams;
3. Reviewing material to help you prepare for the exams.

Course Expectations and Guidelines

Expectations for Student Effort
"For each hour of lecture equivalent, students should expect to have a minimum of two hours of work outside class."

Attendance Policy
Students are expected to attend all class sessions and are responsible for all material and announcements presented there. If you miss a class for any reason, you are responsible for

finding out what was discussed (including announcements of or changes to assignments or due dates).

There are no make-ups for the in-class quizzes. I will, however, drop the 3 lowest grades of the in-class quizzes for the calculation of your grade. There are also no makeups for the mid-term exams, though I will drop the lowest such exam grade. In addition, there are no makeups for the out-of-class exercises that will be recorded at the beginning of lab. You may, however, miss two of these without it affecting your grade.
If you need to request a makeup for the final, you must contact me 24 hours in advance. In addition, I will only provide a makeup for the final exam for those students who have completed at least 80 percent of the in-class quizzes and have attended at least 80 percent of the labs.

COVID-19 Policy
"Per the proclamation of Governor Inslee on August 18, 2021, masks that cover both the nose and mouth must be worn by all people over the age of five while indoors in public spaces. This includes all WSU owned and operated facilities. The state-wide mask mandate goes into effect on Monday, August 23, 2021, and will be effective until further notice."

"Public health directives may be adjusted throughout the year to respond to the evolving COVID-19 pandemic. Directives may include, but are not limited to, compliance with WSU's COVID-19 vaccination policy, wearing a cloth face covering, physically distancing, and sanitizing common-use spaces. All current COVID-19 related university policies and public health directives are located at https://wsu.edu/covid-19/. Students who choose not to comply with these directives may be required to leave the classroom; in egregious or repetitive cases, student non-compliance may be referred to the Center for Community Standards for action under the Standards of Conduct for Students."

WSU Reasonable Accommodation Statement
"**Students with disabilities:** Reasonable accommodations are available for students with documented disabilities or chronic medical conditions. If you have a disability and need accommodations to fully participate in this class, please visit the Access Center website to follow published procedures to request accommodations: https://studentaffairs.vancouver.wsu.edu/access-center. Students may also either contact or visit the Access Center in-person to schedule an appointment with our Access Center Coordinator. Location: Classroom Building, Room 160; Phone: 360-546-9238; Email: van.access.center@wsu.edu. All disability related accommodations MUST be approved through the Access Center. Students with approved accommodations are strongly encouraged to visit with instructors early in the semester during office hours to discuss logistics."

WSU academic integrity statement:
"Academic integrity is the cornerstone of higher education. As such, all members of the university community share responsibility for maintaining and promoting the principles of integrity in all activities, including academic integrity and honest scholarship. Academic integrity will be strongly enforced in this course. Students who violate WSU's Academic Integrity Policy (identified in Washington Administrative Code (WAC) 504-26-010(3) and -404) on any assignment will receive an F grade for the course, will not have the option to withdraw

from the course pending an appeal, and will be reported to the Center for Community Standards. Cheating includes, but is not limited to, plagiarism and unauthorized collaboration as defined in the Standards of Conduct for Students, WAC 504-26-010(3). You need to read and understand all of the definitions of cheating: http://app.leg.wa.gov/WAC/default.aspx?cite=504-26-010. If you have any questions about what is and is not allowed in this course, you should ask course instructors before proceeding. If you have questions or wish to appeal a faculty member's decision relating to academic integrity, please see the resources available at https://communitystandards.wsu.edu/home/ . If you have any questions about the process on the Vancouver campus, please call Eric Scott at 360-546-9530."

Other random concerns

If you have a concern about this class, rule 104 of the WSU Academic regulations states: "Students having complaints about instruction or grading should refer them first to the instructor."

Technology policy

Research has shown that high levels of multi-tasking are bad for focus and concentration. In addition, students who use keyboards during class have been shown to learn less than those who do not. More recent work has shown that even the presence of gadgets is distracting for both the owners and the people around them. My own experience has been that the classroom environment is greatly improved by removing individual keyboards and screens.

For a recent review of the research, as well as experimental demonstration of these issues, read: Mueller, Pam A. and Daniel M. Oppenheimer. 2014. "The Pen Is Mightier Than the Keyboard: Advantages of Longhand Over Laptop Note Taking." *Psychological Science* 25 (6):1159-1168.

For the distractions posed by cell-phones to yourself and others, read: Ward, Adrian F., Kristen Duke, Ayelet Gneezy, and Maarten W. Bos. 2017. "Brain Drain: The Mere Presence of One's Own Smartphone Reduces Available Cognitive Capacity." *Journal of the Association of Consumer Research* 2 (2): 140-154.

For these reasons, we will have a no technology policy (unless you have a documented disability) for this class. This policy means no cell-phones or computers are to be used during class-time.

This policy is suspended in cases where you need to use the device to: 1) access the textbook, and 2) participate in class activities.

Accommodation for Religious Observances or Activities

"Washington State University reasonably accommodates absences allowing for students to take holidays for reasons of faith or conscience or organized activities conducted under the auspices of a religious denomination, church, or religious organization. Reasonable accommodation requires the student to coordinate with the instructor on scheduling examinations or other activities necessary for course completion. Students requesting accommodation must provide written notification within the first two weeks of the beginning of the course and include specific dates for absences. Approved accommodations for absences will not adversely impact student grades.

Absence from classes or examinations for religious reasons does not relieve students from responsibility for any part of the course work required during the period of absence. Students who feel they have been treated unfairly in terms of this accommodation may refer to Academic Regulation 104 – Academic Complaint Procedures."

Emergency Notification System
"Please sign up for emergency alerts on your account at MyWSU. For more information on this subject, campus safety, and related topics, please view the FBI's Run, Hide, Fight video and visit the classroom safety page https://provost.wsu.edu/classroom-safety/."

Other random concerns
If you have a concern about this class, rule 104 of the WSU Academic regulations states: "Students having complaints about instruction or grading should refer them first to the instructor."

Inclement weather policy: "In the event that an adverse weather event (e.g., snow or ice) or natural hazard that poses a safety risk occurs, you should take personal safety into account when deciding whether you can travel safely to and from campus, taking local conditions into account. If campus remains open and your instructor decides to cancel the face-to-face meeting and substitute an alternative learning activity, you will be notified by your instructor via email or through Canvas within a reasonable time after the decision to open or close campus has been made. Instructions regarding any alternative learning options or assignments will be communicated in a timely manner. If travel to campus is not possible due to adverse regional conditions, allowances to course attendance policy and scheduled assignments, including exams and quizzes, will be made. Students who attempt to gain advantage through abuse of this policy (e.g., by providing an instructor with false information) may be referred to the Center for Community Standards for disciplinary action. If a student encounters an issue with an instructor, the student should first talk with the instructor. If the issue cannot be resolved, the student should follow the reporting violations of policies outlined on the student affairs website."

In the event of inclement weather that causes travel to the campus to be unsafe, we will move to a digital learning mode. In general, I will follow the Vancouver Public Schools' determination. I will notify you if we are moving to that mode the night before.

Miscellaneous course norms
No eating and drinking during class.

DRAFT SCHEDULE subject to change

Week	Dates			Lectures	Reading	Lab activities
	Lecture	*Lab*	*Lecture*			
1	11-Jan	11-Jan	13-Jan	Tues: Overview; Thurs: Ch. 1	Text: Ch 1	1.4, 1.5, 1.10, 1.13-23, 1.26, 1.33, 1.40, 1.44
2	18-Jan	18-Jan	20-Jan	Tues: Ch. 2; Thurs: Ch. 3	Text: Ch 2, 3	2.12, 2.15-2.24, 2.32, 2.36, 2.40; 3.1, 3.8, 3.10, 3.12, 3.14-3.24,
3	25-Jan	25-Jan	27-Jan	Tues: Ch. 4; Thurs: Ch. 5	Text: Ch 4, 5	4.4, 4.6, 4.14-23, 4.46; 5.18, 5.20-29, 5.34
4	1-Feb	1-Feb	3-Feb	Tues: Ch. 6 Thurs: Exam		Exam review
5	8-Feb	8-Feb	10-Feb	Tues: Catch up; Thurs: Ch. 8	Text: Ch 6, Ch 8	6.2, 6.4, 6.8-6.16, 6.20-24; Computer exercise #1
6	15-Feb	15-Feb	17-Feb	Tues: Ch. 9; Thurs: Ch. 12	Text: Ch 9, 12	12.5, 12.8, 12.10, 12.14, 12.18, 12.22-32, 12.34, 12.36, 12.42-44, 12.48, 12.54
7	22-Feb	22-Feb	24-Feb	Tues: Ch. 12 (cont); Thurs: Ch. 15	Text: Ch 15, 16	15.2, 15.6, 15.8, 15.17-15.24, 15.28, 15.30; 16.2, 16.4, 16.8, 16.10,16.11-16.18, 16.20, 16.22
8	1-Mar	1-Mar	3-Mar	Tues: Ch. 16; Thurs: Exam		Exam review
9	8-Mar	8-Mar	10-Mar	Tues: Catch up; Thurs: Ch. 17	Text: Ch 17, 18	Computer exercise #2; 17.6, 17.21, 17.22-17.30, 17.32, 17.38, 17.40; 18.2, 18.8, 18.18, 18.19-18.27, 18.38, 18.54
SPRING BREAK						
10	22-Mar	22-Mar	24-Mar	Tues: Ch. 18; Thurs: Ch. 20	Text: 20, 21	20.4, 20.8, 20.17-20.26, 20.30, 20.32, 20.54 (optional: 20.50); 21.1-4, 21.18-26, 21.30, 21.34-36
11	29-Mar	29-Mar	31-Mar	Tues: Ch. 21; Thurs: Ch. 21-22	Text: 22	22.2, 22.6, 22.10, 22.15-22.24, 22.26, 22.28, 22.34, 22.36, 22.38
12	5-Apr	5-Apr	7-Apr	Tues: Ch. 22; Thurs: Exam		Exam review
13	12-Apr	12-Apr	14-Apr	Tues: Catch up; Thurs: Ch. 23	Text: 23	Computer exercise #3; 23.2, 23.4, 23.9-23.13, 23.26, 23.28, 23.32
14	19-Apr	19-Apr	21-Apr	Tues: Ch. 25; Thurs: Ch. 26	Text: 25	25.2, 25.6, 25.16, 25.19-29, 25.34 (Note that you can download some of the data for exercises 25.2 and 25.6.)
15	26-Apr	26-Apr	28-Apr	Review/catch-up		
Final exam during finals week						