CRIMIN 2220: Statistical Analysis in Criminology and Criminal Justice

Professor: Dr. Marisa Omori (she/her/hers)
Email: marisa.omori@umsl.edu
Student Hours: Online on Zoom (ID: 820 122 1787) Mondays 12:30-1:30 or by appointment

Teaching Assistant: Faraneh Shamserad

Class and lab sessions (all online)
- Monday class: videos and slides on Canvas on your own time.
- Wednesday class: 12:30pm-1:45pm Online on Zoom
- Wednesday labs: 2:00pm-2:50pm or 3:00pm-3:50pm Online on Zoom

Course Description
This course is designed to introduce students to descriptive and inferential statistics used in criminology and other social sciences. We will cover measures of central tendency and variation, probability distributions, hypothesis testing, and bivariate techniques such as correlation and an introduction to regression. This class has a concurrent lab as part of the course, which focuses on software applications of the statistical concepts using Microsoft Excel, as well as putting together data visualizations. Prerequisites: CRIMIN2210 (may be taken concurrently) and the university math proficiency requirement.

Learning Objectives
- Critically read and understand descriptive and inferential statistical concepts
- Apply statistical concepts to social science real-world examples
- Build a solid foundation for more advanced statistical techniques

Texts and materials

1) Textbook: Frankfort-Nachmias, Chava, Leon-Guerrero, Anna, and Davis, Georgiann. (2021). Social Statistics for a Diverse Society. (9th edition).
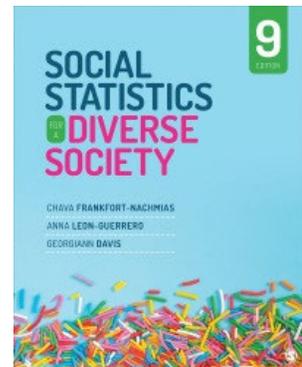
   The book is in paper and electronic format! The paperback ISBN is: 9781544339733. The electronic ISBN is: 9781544358666. You are also welcome to use older editions of the book—just make sure you are following the same chapters and are doing the correct homework problems. A copy of the table of contents and homework problems are on Canvas.

2) Calculator: To use for exercises and homeworks. A graphing calculator is fine but not required—it just needs to be able to do squares and square roots.

3) Computer or tablet with an internet connection: To watch/access videos, and to participate in class activities and the lab live via Zoom. Please create a Zoom account (free for students). If

you have a problem with your computer or software, please speak to me or get help in solving it through the Technology Support Center.

4) Microsoft Excel: You should be able to access Microsoft Office 365 available for free as an UMSL student (you'll need to log in with your SSO).

5) Canva: Please create a Canva account (free). In addition to Excel, we will learn how to use Canva in the labs to create an infographic. You will need to use Canva to create your infographic for your final project.

6) Optional: Scanner or scanning app for homework: If you want to handwrite your homework and participation activities, you will need to be able to scan to turn it in. If you don't have a scanner at home, you are welcome to simply take pictures with a smartphone, or I would recommend the Adobe Scan app, which is free! (Here are links for Android and iOS).

Course Logistics
- Because of COVID-19, we are unable to meet in person. Our schedule will be as follows:
  - **Monday class**: I will post videos and slides on Canvas for you to watch instead of class on Monday. You should watch these videos before Wednesday's class and lab sessions.
  - **Wednesday class 12:30-1:45pm**: we will plan to meet on Zoom "live" to work on class participation activities together. These include being logged into Zoom and accessing Google docs/Microsoft Word, or having the activities printed out for class activities, so you will need a computer or tablet with an internet connection. I encourage you to print out the activities and do them by hand!
  - **Wednesday labs 2:00-2:50pm or 3:00-3:50pm**: These will be held on Zoom "live". These include being logged into Zoom and working through the lab exercises in Excel, so you will need a computer or tablet with an internet connection and access to Excel. Datasets and weekly lab assignments (Word doc) will be posted on Canvas under Lab data and material.
- We are in a stressful time, and I know that many of you have likely had to deal with job loss, caring for family, testing positive for COVID-19, losing people, and so many other things. My goal is to help you still learn statistics, despite these difficult circumstances. I will try my best to extend flexibility to you all as needed, and I hope you will do the same for me. You do not need to tell me specifics about your health/personal situation (although I'm always happy to talk if you want), but please do notify me if something is going on that impacts you in regards to this class. I am happy to help make accommodations, and will be posting nearly everything on Canvas if you need to catch up on material. **For non-emergency absences, you are still responsible for turning in the homework via Canvas by the end of the day if you miss class**. Unexcused absences will also affect your participation grade.
- Even though we are online, this is still an active course that involves participation in the live labs and classes, reading the required materials, watching the videos, and completing the assignments. For the live Zoom labs and classes, you need to be able to be in a space where you are able to focus on the class, just like you would in an in-person class.

- If you feel like you are needing extra help, please feel free to get in touch with me and/or Faraneh. We are here to help! I also strongly recommend getting to know some of your classmates—statistics is best learned together.
- Students who need disability accommodations should see me. I will happily make accommodations through the office of disability services (314.516.6554).
- I take the Student Conduct & Community Standards Code seriously, and I suggest you review it beforehand if you have not done so already. Not knowing is not an excuse! Academic dishonesty includes cheating, plagiarism, and collusion.

Grading
The grading rubric is as follows:

Homeworks	50%
Midterm and final infographic projects	30%
Participation	5%
Lab	15%
Total	**100%**

1. **Homeworks:** these will consist of problems from the textbook. They are listed under "chapter exercises" and start with C (e.g. C1, C2, C3, etc.) You may work together, although each of you must turn your own work and must use your own words in your responses to questions. These can be handwritten or typed, and make sure to show all of your work and box your final answer—if the problem requires calculation, I will only give credit to assignments that show all of the steps to the final answer (even if your answer is correct!) Homework assignments in general will be due in class the week after the chapter is covered. **Unexcused late assignments will be given half credit and will not be given feedback, and can be turned in up to ONE WEEK after the due date. After that time, they are worth zero points.** You can turn in assignments via scanning and uploading them in Canvas.

2. **Midterm and final infographic projects:** there will be midterm and final projects to create infographics in order to demonstrate your knowledge in the class. The projects are designed to apply the class material in "real world" situations, and you will be calculating statistics with Excel and creating data visualizations (e.g. graphs or charts) for the infographics and creating them in Canva. For both projects, you will turn in the project itself, as well as any supporting work you used to calculate your statistics for the project. More information is posted on Canvas.

3. **Participation:** We will be doing class participation activities in our Wednesday Zoom classes, and you are expected to participate in these. Because these are in-class activities, they cannot be made up if you miss them.

4. **Lab:** Your lab grade will include participating and completing the Excel exercises that follow the course material in the Wednesday Zoom labs, and you are expected to participate in these. Your weekly lab assignments will be **due each Wednesday by the beginning of lab**. You will submit **two** documents via Canvas: your lab assignment and Excel workbook. Unexcused late assignments can be turned in up to ONE WEEK after the due date and will be given half credit and will not be given feedback. Lab assignments are graded for completion, not accuracy. Therefore, in order to receive credit, all questions on assignments must be answered. Incomplete lab assignments will be given no credit.

Grade categories

93.5 +	A	73.5-76.4	C
89.5-93.4	A-	69.5-73.4	C-
86.5-89.4	B+	66.5-69.4	D+
83.5-86.4	B	63.5-66.4	D
79.5-83.4	B-	59.5-63.4	D-
76.5-79.4	C+	Below 59.5	F

Course schedule—we may adjust dates as we go along!

Week	Concept/topic	Reading	Assignments
Week 1 Jan 20	Introduction to course and syllabus What is statistics?		
Week 2 Jan 25-Jan 27	What is statistics?	Ch. 1	
Week 3 Feb 1-Feb 3	Organization/graphic presentation of data	Ch. 2	Homework 1: ch. 1: C3, C6, C8, and ch. 2: C2, C6, due Feb 10
Week 4 Feb 8-Feb 10	Measures of central tendency	Ch. 3	
Feb 12	last day to drop a course or withdraw from school without receiving a grade		
Week 5 Feb 15-Feb 17	Measures of variability	Ch. 4	Homework 2: ch. 3: C2, C8, C12, and ch. 4: C8, C12 (calculate standard deviation) due Feb 24
Week 6 Feb 22-Feb 24	The normal distribution	Ch. 5	
Week 7 Mar 1-Mar 3	The normal distribution	Ch. 5	Homework 3: ch. 5: C2, C4, C6, C12, due Mar 10
Week 8 Mar 8-Mar 10	Sampling and intro to inferential statistics	Ch. 6	
Mar 12	Last day to drop a course or withdraw from school without instructor approval. EX grade will be assigned.		
Week 9 Mar 15-Mar 17	Estimation and confidence intervals	Ch. 7	**Midterm infographic project due Mar 24**

Week 10 Mar 22-Mar 24	Estimation and confidence intervals	Ch. 7	Homework 4: ch. 7: C2, C4, C6a, C10, C12 due Apr 7
Mar 27-Apr 4	Spring Break		
Week 11 Apr 5-Apr 7	Testing hypotheses	Ch. 8	
Week 12 Apr 12-Apr 14	Testing hypotheses	Ch. 8	Homework 5: ch. 8: C2, C4, C6, C8, C10 due Apr 21
Apr 16	Last day a student may drop a course. Instructor and Dean's approval is required. EX or EX-F will be assigned.		
Week 13 Apr 19-Apr 21	Bivariate tables & Chi-square	Ch. 9 (p.281-292) & Ch.10 (p. 327-340)	Homework 6: ch. 10: C2, C4, C5 (conduct chi-square test), C8 (not d), due Apr 28
Week 14 Apr 26-Apr 28	Regression and correlation	Ch. 12	
Week 15 May 3-May 5	Catch up and review		
Finals week May 10-May 14	**Final infographic project due May 12**		