

UEP 305: Urban Data Analysis
Occidental College
Spring 2020
Mon & Wed 4:05-5:30 p.m.
Lab: Wed 5:35-7:00 p.m.

Instructor: Hanna Song, Ph.D.
Office Hours: By appointment
E-mail Address: hannasong@oxy.edu

Teaching Asst: Evie Wasson
E-mail Address: ewasson@oxy.edu

Please note: Details may change. Please check Moodle for most updated version of the syllabus.

Course Description and Goals

We live in an era of big data, infographics, and hyperinformation. Quantitative, measureable data guides our understanding and analysis of policies, problems, and sociological processes in various sectors of society and for a diverse population. This course will help you understand the logistics of quantitative research, gain quantitative reasoning skills, and develop as a community-based researcher.

This course will help you **think critically** about the research you read in your classes or see in the media, including the biases found in the research process itself. You will apply concepts and readings to critically design, conduct, and write original research. You will also understand your role, power, privilege, and positionality as a researcher. Your experience with developing and implementing research studies is an important skill that you will apply in a variety of contexts during and after college regardless of whether you work in academia, the non-profit sector, government, or the private sector. It will, at the very least, help you become a more fully engaged citizen or community member on a variety of issues and in practical terms, will prepare you to conduct your senior comprehensive research.

Learning Outcomes

Students will:

- Critically think about quantitative data—how we use numbers and facts in research, information-sharing, and policy analysis.
- Develop technical, statistical skills using excel and SPSS.
- Assess how we design and conduct our information/data collection and analysis.
- Question what we assume explicitly and implicitly and the ethical underpinnings of quantitative research.
- Employ a community-driven, social justice lens as a primary focus

Required Texts and Software

Frankfort-Nachmias, Chava & Leon-Guerrero, Anna (2017). *Social Statistics for a Diverse Society*.

Available for rent on Amazon (you can rent for free for one week, then begin your subscription to save a few dollars):

https://www.amazon.com/Social-Statistics-Diverse-Society-Frankfort-Nachmias/dp/1506347207/ref=sr_1_1?ie=UTF8&qid=1512412806&sr=8-1&keywords=diverse+statistics

Online Statistics Education: A Multimedia Course of Study (<http://onlinestatbook.com/>).

Project Leader: David M. Lane, Rice University.

Required Software:

- Please PURCHASE SPSS for your computer. You can split this with another student in the class who has the same operating system as it is advertised for 6-month rental for 2 licenses at \$35:

<https://studentdiscounts.com>

https://studentdiscounts.com/ibmspssstatisticsgradpack26basedownload-winmac-6mnth.aspx?gclid=CjwKCAiAugHwBRAQEiwAD-zr3YaJ-2FjqP_5XaSHBzSbjkar5w2EcKj5RBy9W7J7-jzrvStsjLGaxoCiRQQAvD_BwE

- Please install Excel on your computer by first day of class using your Oxy credentials:

<https://www.oxy.edu/offices-services/its/services/software>

Software also available in computer labs, but you must have one during labs on Wednesdays.

Additional readings will be available on Moodle

Course Requirements & Grading

Class participation & attendance 20%

All content and skills are scaffolded in this class. If you miss a class, please make sure you get up to speed with a classmate before attending the next session. Please do your best not to miss lab as those will be very technically focused, and we do not have time to review! Participation is measured by contribution in class and weekly homework assignments. Please engage by asking questions, raising your hand, and speaking in class at least 2 times in a class period.

Lab Assignments 1-4 40%

Midterm 15%

Final 25%

Course Policies

You get to be a respectful colleague in the classroom- meaning that you are curious and respectful of your classmates and open to their ideas. You, yourself, should be prepared to actively engage in class discussion by reading material in advance of class and being an active and engaged listener and participant.

Cheating and academic dishonesty will not be tolerated. Course assignments are demanding and require critical and creative thinking. Please familiarize yourself with the nuances of academic dishonesty and Oxy's policies regarding the penalties for academic dishonesty: <http://www.oxy.edu/student-handbook/academic-ethics/academic-ethics>

Plagiarism: (<http://www.oxy.edu/center-academic-excellence/writing-center/citing-sources>)

Email Policy

I will respond to student emails within one business day of receiving them (M-F). Please send me your email before 3 p.m. on Friday if you need a reply before the weekend.

Support Services:

The college provides a set of resources to students to support them in learning. The Center for Academic Excellence (CAE) provides writing assistance to students to develop ideas, draft, and revise papers.

Drop-in hours are posted here:

<http://www.oxy.edu/center-academic-excellence/drop-hours-only>

Students with documented disabilities who are registered with Disability Services are required to present their accommodation letter to the instructor at the beginning of each semester or as soon as possible thereafter. Any student who experiences significant physical or mental impairments may contact Disability Services at (323) 259-2969 to learn about available services and support. More information is available at <http://www.oxy.edu/disability-services>.

The Emmons Health and Counseling Center also provides important support services and can help you address issues of stress, medical and mental health and overall well-being. www.departments.oxy.edu/Emmons.

Occidental Sexual Misconduct Policy and Resources

Policy: <http://www.oxy.edu/sexual-assault-resources-support/policies-procedures>

24/7 Confidential Hotline: (323) 341-4141

Campus Safety Emergency Line: (323) 259-2511

Dean of Students Office: (323) 259-2661

Course Schedule (Subject to Change- always check Moodle!)

Week 1:

	Jan 22 Course Intro Research Questions/Variables HW: Chapter 2 Lab: Excel 101; managing data
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Week 2:

Jan 27 Central Tendencies & Graphical Representations HW: Chapter 3	Jan 29 Central Tendencies & Graphical Representations HW: Lab Assignment 1 Lab: Excel 101: Pivot Tables and Charts
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Week 3:

Feb 3 Measures of Variability and Normal Distributions HW: Chapters 4 & 5	Feb 5 More on Variability & Distributions Lab: Intro SPSS
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Week 4:

Feb 10 Sampling/Survey design HW: Chapter 6	Feb 12 Survey Design HW: Lab Assignment 2 Lab: Qualtrics
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Week 5:

Feb 17 President's Day	Feb 19 Research Ethics/Research Design Survey Research & Analysis Lab: Qualtrics & SPSS
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Week 6:

Feb 24 Testing Hypotheses and Confidence Intervals HW: Chapters 7 & 8	Feb 26 Bivariate Tables, Hypotheses Lab: SPSS
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Week 7:

March 2 Bivariate Tables HW: Chapter 9 & 10	March 4 Interaction Effects, Chi-Square Lab: SPSS Crosstabs (2way and 3way)
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Week 8: SPRING BREAK March 9-13, 2020

Week 9:

March 16 Midterm Review HW: Study!	March 18 In-Class Midterm HW: Read Ch. 11
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Week 10:

March 23	March 25
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ANOVA	ANOVA
HW: Chapter 11	Lab: SPSS ANOVA

Week 11:

March 30: Guest Lecture: Mo Mills	April 1: Guest Lecture: No Lab
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Week 12:

April 6 Multiple Regressions HW: Chapter 12 & Articles on Moodle	April 8 Interpreting Regression Results Lab: SPSS Simple Regression
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Week 13:

April 13 Data Visualizations HW: Articles on Moodle	April 15 Creating Infographics, Visuals, etc. <i>HW: Lab Assignment 4</i> Lab: Tableau, Canva, etc.
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Week 14:

April 20 Presenting Data & Overview of Class HW: Articles on Moodle	April 22 Presenting Data Lab: Class Presentations
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April 27: FINAL PRESENTATIONS and REVIEW