



SOCIAL STATISTICS IN EVERYDAY LIFE

Department of Sociology, Social Work and Anthropology
 SOC 2800, Section 001, Fall 2017, CRN 44230
 Tuesday/Thursday, 9:00-10:15 am
 Old Main, Room 117

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 Office: Old Main 224D
 Office hours: Tuesday/Thursday 11:30-1:15 am and by appointment

COURSE DESCRIPTION AND OBJECTIVES

In 2004, journalists and authors began to talk about politics in “the post-truth era” in which debate is framed largely around emotional appeals and factually dubious political talking points are repeated over and over again until they become “true”. Living in this age of Fake News and widespread misinformation, it is imperative that people know how to sift through all of the noise to find the signal. Statistics refers to a set of mathematical ideas and equations that are used to make sense of the world. While it is difficult to establish “absolute truths” about any complex social phenomena, when used correctly statistics can be a useful tool to uncover trends in what happened in the past and in predicting what may happen in the future. This course is designed to provide students with a very basic understanding of specific statistical techniques and how to interpret data in order to be more critical consumers of information first as students and then as citizens.

REQUIRED TEXT AND EQUIPMENT

- Lane, David M. *Introduction to Statistics, Online Edition*. Rice University. (<http://onlinestatbook.com/>).
- Lippman, David. *Math in Society, Ed. 2.4*. Open Educational Resources.
- A calculator capable of addition, subtraction, multiplication, division, and calculating square roots

STUDENT EVALUATION

Your course grade will be based upon three exams and eight homework assignments. Each exam is worth 20 percent of your final grade and each homework assignment is worth 5 percent.

Exams	60 pts
Assignments	40 pts
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Total	100 pts

GRADING SCALE

A 94 and above		A- 93-90
B+ 89-87	B 86-84	B- 83-80
C+ 79-77	C 76-74	C- 73-71
D+ 69-67	D 66-60	F 59 and below

EXAMINATIONS

There will be three exams in this class, with each worth 20 percent of the final grade. While the exams are not expressly designed to be cumulative in nature, each module of the course builds off of previous material, meaning that ideas introduced early in the course will still be relevant later on. In this regard, students should make every effort to maintain a clear understanding of the material each week as subsequent lessons will only make learning more difficult.

PLEASE NOTE: During exams, students will be allowed to use a one page “crib sheet” (front only), because in the “real world” statistics are rarely if ever calculated solely from memory. “Crib sheets” (complete with student name and U number) must be turned into the instructor along with the finished test at the end of the in-class examination. If there is no “crib sheet” attached, the exam will not be graded.

QUANTITATIVE COMPETENCY

As this course is listed as “Quantitative Intensive”, the course material must further the quantitative literacy goals of University Studies by improving student fluency in the use of quantitative methods. The homework assignments are designed to allow students to demonstrate the ability to use: (1) mathematical models such as formulas, graphs, tables and schematics, and draw inferences from them; (2) quantitative information symbolically, visually numerically and/or verbally; (3) statistical models to solve problems; and (4) estimates to check answers to quantitative problems in order to determine reasonableness, identify alternatives, and select optimal results.

By the end of the semester, every student must demonstrate competency in each of these four areas. A student will have demonstrated competency once he or she has had two answers in each of the four areas declared “competent” by the professor (two since an ability is a habit and so is repeatable). Over the course of the semester, the TAs and the professor will give you graded feedback on your homework in order to help you demonstrate competency if you are struggling to do so.

PLEASE NOTE: If a student has not demonstrated competency twice by the last homework assignment, he or she will fail the course no matter how well he or she has performed on exams.

LECTURES, ATTENDANCE, AND CLASS DISCUSSION

As the goal of this course is to develop a statistical skill set, attendance and class participation is an important component in order to provide students with the most interactive experience possible. While my lectures will focus on the statistics in the readings, I may expand the scope of the material in class to include other information or narrow the focus to highlight only a few key elements. While attendance is not mandatory, it is strongly encouraged.

COURSE POLICIES

1. Even though you may think of statistics as a “math class”, the subject matter of this course is highly theoretical, which means that the material can be rather dense and difficult to understand at times. My role is to help clarify each statistical test, provide explanations and context that are not included in the readings, and answer any questions that you might have, but you are expected to read all of the assigned readings so that you can participate as fully as possible. In this regard, students cannot just listen to my lectures and ignore the book, or vice versa, and still have exposure to all of the information necessary to perform well this course. In addition, you are responsible for knowing the content of any materials posted to the online-classroom in Canvas, including written or audio lectures.

2. Please extend courtesy and respect to your fellow students in any discussion and avoid any overtly hostile or demeaning language when reacting to another student's ideas. Repeated disrespectful and rude behavior may be grounds for dismissal from the class.

3. Late assignments will not be accepted unless: (1) you notify me 48 hours *before* the assignment is due and (2) provide me with an acceptable reason for why the assignment will be late. I may request written documentation for the excuse if deemed necessary. If you do not follow this procedure, then you will receive a zero on the assignment.

4. Plagiarism and cheating will not be tolerated. While I encourage group work, you must provide evidence of how you arrived at an answer. You may not receive credit for an entire assignment if it is apparent that you did not do the work yourself.

5. This syllabus is not a contract. I reserve the right to modify this syllabus at any time throughout the semester and will give you ample notification beforehand via class-wide announcements. It is your responsibility to stay abreast of any changes made.

6. In line with university policy, students with disabilities who are in need of academic accommodations must (1) register with and provide documentation to the Disability Research Center (DRC) and (2) bring a memorandum from the DRC to the instructor indicating the need for accommodation and what type. This should be accomplished within the first two weeks of the semester. Additional information can be accessed at www.usu.edu/drc/

7. In accordance with the Family Educational Rights and Privacy Act (FERPA), academic progress in this course will be kept private from all third parties unless waived by the individual student. This waiver, along with other information, can be found at <http://www.usu.edu/registrar/htm/ferpa>.

8. If you have a problem, please do not hesitate to contact me. It is easiest to reach me via email, although I do request that you include your *first name*, your *last name*, your *A number*, and the *course number* in all correspondence. I check my email account daily, so if you need to contact me, you can expect a response within 24 hours, but you should not wait until the last minute before deadlines to write to me with questions.

TENTATIVE SCHEDULE AND ASSIGNED READINGS (SCHEDULING MAY BE SUBJECT TO CHANGE)

SECTION 1: DESCRIPTIVE STATISTICS

WEEK 1: Course Introduction (Tuesday, August 29)

Why Should We Care About Social Science Research? (Thursday, August 31)

Cronon, William. 1998. "'Only Connect ...' The Goals of a Liberal Education". *The American Scholar* 67 (4).

Lane, *Online Statistics Education*, pages 10-25

WEEK 2: Levels of Measurement and "The Continuing Significance of Race" (Tuesday, September 5)

Lane, *Online Statistics Education*, pages 26-39

United States Census Bureau. 2011. *The Black Population: 2010*. Washington, DC: United States Department of Commerce.

United States Census Bureau. 2011. *The White Population: 2010*. Washington, DC: United States Department of Commerce.

Percentages, Ratios, Rates, and "The Greatest Country In The World" (Thursday, September 7)

Lippman, *Math in Society*, pages 30-34

United States Census Bureau. 2017. *The Changing Economics and Demographics of Young Adulthood: 1975-2016*. Washington, DC: United States Department of Commerce.

<https://ourworldindata.org/literacy/>

WEEK 3: Graphic Representations of Data (Tuesday, September 12)

Lane, *Online Statistics Education*, pages 40-54, 65-112

United States Census Bureau. 2017. *Quarterly Summary of State and Local Government Tax Revenue for 2017: Q1*. Washington, DC: United States Department of Commerce.

<http://memebase.cheezburger.com/graphjam>

Measures of Central Tendency (Thursday, September 14)

Lane, *Online Statistics Education*, pages 123-143

HOMEWORK #1 IS DUE *VIA CANVAS* at 9 AM MST

WEEK 4: Measures of Dispersion/"When Bill Gates Walks Into a Bar Everyone Is a Millionaire" (Tuesday, September 19)

Lane, *Online Statistics Education*, pages 144-157

United States Census Bureau. 2016. *Household Income: 2015*. Washington, DC: United States Department of Commerce.

Reliability and Validity/Sampling (Thursday, September 21)

Lane, *Online Statistics Education*, pages 225-244

WEEK 5: EXAM #1 (Tuesday, September 26)

HOMEWORK #2 IS DUE *VIA CANVAS* at 9 AM MST

SECTION II: INFERENCE STATISTICS

Probability and Odds (Thursday, September 28)

Lane, *Online Statistics Education*, pages 186-202

WEEK 6: "It's Only a Gambling Problem If You're Losing" (Tuesday, October 3)

Silver, Nate. 2015. *The Signal and the Noise, 2nd Ed.* New York, NY: Penguin Books. Chapter 10, pp. 294-328.

The Normal Curve and Translating Z-scores (Thursday, October 5)

Lane, *Online Statistics Education*, pages 249-265

<http://www.pewresearch.org/fact-tank/2017/02/15/u-s-students-internationally-math-science/>

HOMEWORK #3 IS DUE *VIA CANVAS* at 9 AM MST

WEEK 7: "Are You Smarter Than a 5th Grader?" (Tuesday, October 10)

****NO CLASS** (Thursday, October 12)**

WEEK 8: Introduction to Inferential Statistics and Sampling Distributions (Tuesday, October 17)

Lane, *Online Statistics Education*, pages 300-321

HOMEWORK #4 IS DUE *VIA CANVAS* at 9 AM MST

****NO CLASS** (Friday Schedule, Thursday, October 19)**

WEEK 9: "Your Next President of the United States, Hillary Clinton!" (Tuesday, October 24)

Lippman, *Math in Society*, pages 35-74

Silver, Nate. 2015. *The Signal and the Noise, 2nd Ed.* New York, NY: Penguin Books. Chapter 2, pp. 47-73.

Confidence Intervals and Parameter Estimates (Thursday, October 26)

Lane, *Online Statistics Education*, pages 328-355

United States Census Bureau. 2017. *Monthly and Average Monthly Poverty Rates by Selected Demographic Characteristics: 2013*. Washington, DC: United States Department of Commerce.

WEEK 10: "Should I Bring An Umbrella Today?" (Tuesday, October 31)

Silver, Nate. 2015. *The Signal and the Noise, 2nd Edition*. New York, NY: Penguin Books. Chapter 4, pp. 108-141.

EXAM #2 (Thursday, November 2)

HOMEWORK #5 IS DUE *VIA CANVAS* at 9 AM MST

SECTION III: HYPOTHESIS TESTING

WEEK 11: Introductions to Hypothesis Testing (Tuesday, November 7)

Lane, *Online Statistics Education*, pages 370-391

More Hypotheses of Difference (Thursday, November 9)

Lane, *Online Statistics Education*, pages 399-437

WEEK 12: "I'm Kind Of a Big Deal" (Tuesday, November 14)

Lane, *Online Statistics Education*, pages 448-457

HOMEWORK #6 IS DUE *VIA CANVAS* at 9 AM MST

Chi-Squares (Thursday, November 16)

Lane, *Online Statistics Education*, pages 598-607

WEEK 13: "I Bet You Don't Believe in Climate Change Either" (Tuesday, November 21)

<https://www.census.gov/cps/data/cpstablecreator.html>

****NO CLASS** (Thanksgiving Break, Thursday, November 23)**

WEEK 14: Hypotheses of Association (Tuesday, November 28)

Lane, *Online Statistics Education*, pages 164-177, 356-357

HOMEWORK #7 IS DUE *VIA CANVAS* at 9 AM MST

"Nicolas Cage is Drowning People" (Thursday, November 30)

Lane, *Online Statistics Education*, pages 462-494

WEEK 15: Multivariate Correlation and Causation (Tuesday, December 5)

Lane, *Online Statistics Education*, pages 495-506

"#fakenews Sad."/Course Summary (Thursday, December 7)

HOMEWORK #8 IS DUE *VIA CANVAS* at 9 AM MST

FINALS WEEK: EXAM #3 (Thursday, December 14, 9:30 to 11:20 MST, in Old Main 117)