

Numbers and Social Justice (CMMU 30) ~ Summer Session 2, 2019

Professor: Andrea Steiner, PhD (policy analysis), MSG (G for gerontology)
Department: Community Studies
Class offered: Tu/Th 1-4:30 pm
Room: Physical Sciences Building, room 130

Section: Yes, on Wednesdays 1-2 pm or 2-3 pm; Thimann Lab, room 101

My office: Oakes 207
My contact info: steiner@ucsc.edu
Office hours: Wednesdays, 2-5 at Oakes 207; or by appointment Thursdays before class.

TA: Julianne Foxworthy
Contact info: jfoxwort@ucsc.edu
Office hours: To be arranged

Syllabus

Welcome to *Numbers & Social Justice*, a lower-division elective offered by Community Studies. This course is designed expressly for students who have found the language of math and statistics a problem; the goal this summer is to de-mystify quantitative thinking and develop appreciation for what it can – and cannot – accomplish. **If the language of math has not been a mystery for you, then you're in the wrong classroom.** You're likely to be bored.

The following syllabus will guide our work during the quarter and give you a clear picture of my expectations.

Aims:

- To support social science and humanities students in developing a firm foundation in basic statistical reasoning -- i.e., the logics of numeracy -- and a clear appreciation of the power of sensible thinking about probability and uncertainty, as well as its limitations.
- To relate simple lessons of quantitative analysis to topical materials immediately relevant to social justice, social change, civic engagement, and social action.
- To encourage willingness to sort fact from fiction in a critical and quantitatively informed manner. After all, statistics has been referred to as "political arithmetic." Let's get our arms around that too.

Objectives:

By the end of this course, you will know how to:

- Do "rough (back of the envelope) math" – quick calculations that give you a *clear sense* of the realities you're confronting in the world, whether examining income inequality, voters' polls and survey results, the rate at which a virus is spreading (and where), or potential discrimination whether in housing, criminal justice, or access to health care;

- Roughly calculate (orders of magnitude [powers of 10], rounded estimates) quantities such as proportions, rates of change, means, standard deviations, and standard errors, and understand *when* and *why* these calculations will serve you;
- Accurately extract useful information from graphs and tables; and
- Pose appropriate questions in response to quantitatively framed claims, whether to debunk naïve assumptions or expose the flaws behind impressive-looking but bogus arguments.

You will also be able to:

- Relate theory to practice, and personal experience to both;
- Develop your listening and participation skills; and
- Think critically and creatively about how quantitative information is deployed in relation to social justice debates.

Expectations (including assignments and due dates):

For all assignments, I'll provide a more detailed prompt on Canvas. Use it!

More generally, in order to get the most out of this course, I ask you to:

1. **Attend classes regularly, and arrive on time.** If this is a problem for you, come see me right away. Your attendance is crucial because (1) we meet only 10 times, (2) my teaching method is often interactive, so you can't do the learning without the dialogue, and (3) we practice in class for the weekly take-home assignments (homework, test, quiz, call it what you want but there's a grade). Attendance is required. We're handling section attendance a little differently; see Grading & Evaluation (below) for an explanation.
2. **Ask questions *whenever you are unclear*.** For all of us, the beginning of learning is to acknowledge ignorance. It can be an uncomfortable feeling but it's crucial to become good at embracing the steeper parts of life's learning curves. I encourage you to frame your uncertainties or anxiety as "excitement," because it is also that. In this class, we're aiming for an atmosphere where learning can happen, and that means all questions are welcome. I promise, if you have a question then somebody else in the class is wondering the same thing. And, if you prefer one-on-one tutorial-style learning, you can also talk with me or with our TA Julianne.
3. **Keep up with the reading and come to class prepared.** That's important. Come with your questions and I'll do my best to ensure that everyone understands the material.
 - **As part of this, an assignment: Numbers in the News.** On Tuesday of week 2, you'll be responsible for bringing in a social justice-relevant, chart-using or stats-quoting or study-describing article from a reputable news source. **Part 1:** You'll have FIVE MINUTES – that's all – to summarize the article and identify what additional contextual information would help a reader understand the article more completely. This is a moment for clear exposition of quantitative information, coupled with critical epistemology. **Part 2:** You and the class will generate questions whose answers would enhance your understanding of the news article's subject. In your first homework assignment you'll find an item asking you to name & answer 2 of the questions that emerged. I'll ask you to write a couple of paragraphs re-summarizing the article, with context and/or critical

analysis and sources accurately cited (APA format). **DUE: Elevator speech due Aug. 6.** (10% of your total grade) **Write-up embedded in homework #1 (due August 7).**

4. **In weeks 1-4, complete a weekly take-home assignment.** You can think of these as homework or quizzes or tests; the point is to give you a space for hands-on engagement with course concepts, and to give us a way to assess what you’re learning. Your take-homes will be posted on Canvas each Thursday and will cover everything we’ve done so far. You’ll have almost a week to complete the assignment, i.e. it’s due the following Wednesday at the start of section. *Week 4 is an exception; to leave preparation time for the final team project, you’ll turn in the 4th assignment at the start of class on Tuesday. Each assignment will emphasize that specific week’s work, but some questions will reflect previous lessons, so your demonstrated knowledge will be cumulative. Do the work on your own and then you’ll go over it during section. Make-up work to improve your understanding –and your grade– will be possible. Remember: The assignments are open-book, but no collaborating, no Internet unless specifically instructed to go there. (Each homework is worth 15% of your grade, for a total of 60%.)

Due dates as follows:

HW #	Posted on Canvas (TH)	DUE in section (W)
1	8.1	8.7 (including follow-up to news presentation on 8.6)
2	8.8	8.14
3	8.15	8.21
4*	8.22	* TUESDAY 8.27

*: That last week will be chock-full because you’ll also be presenting your final project. Make sure you clear your calendar so that you can fully prepare for success!

5. **In place of a final exam, complete a team project, to be presented on the last day of class.** Working in small groups, you will choose a social justice subject or a specific quantitative social indicator to research. **Social indicators** are widely accepted abstractions made concrete – such as GDP, the poverty line, the unemployment index, measuring homelessness or food insecurity or crime or disability or quality of life or racism or environmental injustice. Researchers and policy makers develop and rely on such indicators in order to understand a social issue. Whatever your topic, you’ll identify conventional quantitative measures used to understand the issue. If you choose a specific social indicator, you’ll look into the history of the measure you choose and, especially, will examine the judgments or decisions that have been made about *how* to measure the concept. If you focus more broadly on a specific social justice issue, you’ll engage with how different entities frame the issue and what data they deploy (in what ways) to evaluate or advocate. I’ll expect you to discuss your findings in a way that makes use of all that you’ve learned throughout the quarter. This is where you show off what you’ve learned, from mathematical calculations to critical epistemology. We’ll discuss this assignment in class and section; you’ll work together when we meet, but plan to connect outside of class too.

Each team will have about 30 minutes (this number may change depending on how many people are in the class and how many groups we form); presentations will take place on the last day of class: **August 29th**.

On that day, in addition to presenting, each team will turn in a compiled document that specifies:

- Who did what
- Three take-home messages for each student's contribution
- Source list in APA format → You will lose points for incorrect citation format
- Supplemental materials as desired → Links, tables or figures, etc.

This final assignment is worth 20% of your grade: 15% for the class presentation, 5% for the written materials.

6. **Conduct yourself with academic integrity and honesty.** The university has strong policies about academic misconduct, and so do I. Much of our work is collaborative; some is not. If I catch you cheating, you will fail the relevant assignment, very possibly fail the course, and equally possibly I will start the formal procedures that the university stipulates. If you have any questions at all about what constitutes cheating or plagiarism, there is no shame in that; for clarification, see http://www.ucsc.edu/academics/academic_integrity/index.html, where the 18th century thinker Samuel Johnson is quoted as saying: "Knowledge without integrity is dangerous and dreadful." The UC statement goes on to read, "Academic misconduct includes but is not limited to cheating, fabrication, plagiarism, or facilitating academic dishonesty or as further specified in campus regulations." You can also come and check with me.

Bottom line: it is your responsibility —and, I hope, your joy-- to learn for yourself by doing your own work. The assignments are designed to engage your mind, not just your feedback loop. If you're concerned about your performance, come see me and we'll create a plan to help you earn your best possible grade. Don't get yourself into a desperate situation; communicate, please!

7. **Disability and universal design.** Whenever possible, we'll webcast the lectures. How well it will work is a bit up for grabs because most of the time we'll be working interactively or in small groups; webcast is best for capturing slides like powerpoint accompanied by a one-speaker lecture. This does not substitute for attendance, which is required; it may, however, help with your studying or if you have to miss a class at some point (one class). I hope it will support folks with hearing or attention deficit challenges too. More generally, **please let me know right away if you are registered with the Disability Resource Center**, so we can ensure that your need for accommodations will be satisfied. I would like to meet with you in person as soon as possible. Thanks.

Access the lectures by going to webcast.ucsc.edu the day after class. Scroll down and click the link for CMMU 30; then enter the username and password for this course:

Username: cmmu-30-1

Password: justice

Grading and evaluation

Please, don't get hung up on them. Steady A's don't mean you couldn't improve, and an early C or D doesn't mean you won't end up doing fine. I look at progress and growth as well as basic performance. I'll give you a lot of feedback along the way, because I want you to take that feedback into account and use it to improve your critical thinking and writing. I'm happy to work closely with you, so please don't be shy about asking for support. Here is the breakdown of how I'll grade your work:

- **Numbers in the News – 10%.** You'll be graded for your choice of article (Is it social justice? Does it draw on or call for statistical reasoning?) and quality of elevator speech (accurate summary, appropriate questions, effective time management) including how you field questions.
- **Weekly assignments – 15% each x 4 = 60%.** I'll grade these according to the accuracy of responses, clarity of expression, and understanding of key concepts and why they matter.
- **Final project – 20% (15% presentation, 5% companion materials).** I'll evaluate your presentations for their clarity, even-handedness, perceptiveness, accuracy, and –as appropriate—creativity. I'll also look at your team-working skills, i.e. the quality of the collaboration as demonstrated by the overall functioning of the group *as a* group. I'll assess the written report/companion packets for its grammatical accuracy and style as well as the appropriateness of materials you include and the way that you point out the relevance of each included item.
- **Attendance and participation – 10% and risk of failing the course.** Lecture: Anyone who misses more than one class may not pass. "I'm busy with other courses" is not a legitimate excuse. Re participation I'll consider (1) evidence that you're coming to class prepared, (2) how perceptive your questions and comments are, and (3) how respectfully you listen to and engage with your classmates. Section: Section attendance is required during the Numbers in the News exercise in weeks 1 and 2. After that, we'll continue to take attendance and the final number of absences will be one factor in how Julianne will arrive at a section grade; another is how much you need to be there! Students earning A's on all the assignments may miss a section or two without penalty; students who need additional support are expected to show up and take advantage of the help that's here for you. Everyone is required to attend the week 5 section so you can prepare for the final presentations.

Please know that we'll work hard to support your learning and expect you to work hard for it too.

Required Reading

- Course Reader. Find it downtown at University Copy, 428 Front Street, 458-9600. Tom is open M-F, 9-5.30. NOT open on the weekend.

Course Outline, by week

(How to read this: The reading is listed under the week that it's due. If for a specific day of the week, that's noted; otherwise please be ready for Tuesday.)

Here's how most of the weeks will be structured:

- Tuesdays: Lecture/lessons associated with (but not exclusively about) assigned reading. Some exceptions, so read the course outline below with care.
- Wednesdays: Discussion section & turn in your homework. The focus will be on understanding the questions and concepts in the take-home. Think of sections in this course as labs, and take advantage of the great resource that Julianne is. Remember, if you're not following the material or not doing well on your quizzes, any absences will affect your participation grade, because you're neglecting a key educational resource. Note: If, by week 3, say, you're earning A's on your homework, you may post your work to Canvas instead of turning in hard copy at the start of section. But, I encourage everyone to go to section!
- Thursdays: Lecture/practicing/continuing from Tuesday. Often, an hour for structured working on your team project.

Week One (July 30, August 1)

**Introductions / Numeracy as a social justice issue, statistics as a social justice tool /
Qualitative & quantitative frameworks /
Reading and translating math / Rough math / The questions to ask**

Reading for Thursday:

- Moore, D.S. and Notz, W.I. (2009) Prelude: Making sense of statistics. In *Statistics: Concepts and Controversies (7th edition)*. New York: Freeman & Co. **R-1-6**
- Farmer, P. (1996) Perspectives: Social inequalities and emerging infectious diseases. *Emerging Infectious Diseases*, vol. 2, no. 4, pp. 259-269. **R-7-17**
- Hacker, A. (2016) The wrong way to teach math. *The New York Times*, February 28, 2016. **R-18-21**
- Martin, D.B. (2013) Race, racial projects, and mathematics education. *Journal for Research in Mathematics Education*, vol. 44, no. 1, pp.316-333. **R-22-39**

DUE NEXT WEEK:

- Tuesday August 6: Give your Numbers in the News presentation
- Wednesday August 7: Homework #1 Thursday (download from Canvas on August 1, hand it in during section)

Week Two (August 6, 8)

Conceptualizing measurement, calculating rates of change, considering contexts, and using critical epistemology to create clarity / Numbers in the News

DUE THIS WEEK:

- On Tuesday **present** your “numbers in the news” elevator speech.
- On Wednesday **hand in** Homework #1.
- On Thursday **form groups** for the final team project. Please review the list posted on Canvas of social indicators, think about them as well as social justice topics of interest to you, and come to class with your top 3 choices. Groups will meet and each person will leave with a ‘next step.’

Reading for this week:

- Moore & Notz, Chapter 8 (Measuring). **R-40-55**
- Shaw, Randy. (2015) How statistics on crime, housing can mislead. *Beyondchron.com*, posted March 17, 2015. **R-56-58**
- Pager, D. & Shepherd, H. (2008) The sociology of discrimination: Racial discrimination in employment, housing, credit, and consumer markets. *Annual Review of Sociology*, vol. 34, pp. 181-209. **R-59-87**

DUE NEXT WEEK:

- Wednesday August 14: Homework #2 (download from Canvas on August 8)

Week Three (August 13, 15)

Data! Counting: Surveys, censuses, polls / Samples and populations / Survey design

DUE THIS WEEK:

- On Wednesday **hand in** Homework #2

Guest speaker (Thursday): Emily Hentschke, on perceptions about fair/living wage laws; Emily is a doctoral candidate in Psychology and will discuss the survey she’s developed and is in the process of administering/analyzing.

Reading for this week:

- Moore & Notz, Chapter 1 (Where do data come from?) **R-88-101**
- Baumgaertner, Emily. (2018) Despite concerns, Census will ask respondents if they are U.S. citizens. *New York Times*, March 26, 2018. **R-102-103**
- Tankersley, J. and Baumgaertner, E. (2018) Here’s why an accurate Census count is so important. *New York Times*, March 27, 2018. **R-104-106**
- Williams, T. (2019) What you need to know about the Census citizenship question. *New York Times*, June 27, 2019. **R-107-**
- Moore & Notz, Chapters 2 (excerpt from Samples, good and bad), 3 (What do samples tell us?) and 4 (Sample surveys in the real world). **R-111-143**

DUE NEXT WEEK:

- Wednesday August 21: Homework #3 (download from Canvas on August 15)

Week Four (August 20, 22)

**The Logics of Probability: We are hard-wired for bias but can learn to do better /
Tables & Figures: The good, the bad, and the flat-out misleading**

DUE THIS WEEK:

- On Wednesday **hand in** Homework #3

Reading for this week:

- Moore & Notz. Chapter 9: Do the numbers make sense? and chapter 10: Graphs, good and bad. **R-144-168**
- Gargani, John. (2012) Tragic graphic: the Wall Street Journal lies with statistics? Evalblog.com, posted 1.23.12. **R-169-176**

DUE NEXT WEEK:

- **TUESDAY** August 27: Homework #4 (download from Canvas on August 22)
- Thursday August 29: Presentations and supplemental materials.

Week Five (August 27, 29)

**Reading, Translating, Measuring, Showing, and Interpreting:
It's Your Turn!
// And, Wrapping Up**

No new reading.

DUE THIS WEEK:

- On Tuesday, **hand in** Homework #4. We'll complete any remaining stats modules & focus on formatting your final presentations.
- On Thursday, **STUDENT PRESENTATIONS!!** (Remember to hand in your team project summary and supplemental materials)

SORRY, NO EXTENSIONS

That's the course!

~ THANKS ~