

Numbers and Social Justice (CMMU 30) ~ Summer Session 2, 2018

Professor: Andrea Steiner, PhD (policy analysis), MSG (G for gerontology)
Department: Community Studies
Class offered: Tu/Th 1-4:30 pm
Room: Engineering 2, room 194

Section: Yes, on Wednesdays 5-6 pm or 6-7 pm; Baskin Engineering, room 165

My office: Oakes 207
My contact info: steiner@ucsc.edu
Office hours: Tuesdays after class, Thursday before class, or Wednesday afternoons – all by appointment only

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

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 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 tests (assignment, 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 make sure that everyone understands the material. Anyway, I will do my very best.
 - **As part of this, an assignment: Numbers in the News.** On Thursday of week 2, you'll be responsible for bringing a justice-relevant, chart-using or stats-quoting or study-describing article from a reputable news source to class. **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 critical epistemology. You should pose 2-5 answerable, i.e. researchable, questions. Then, Julianne and I will focus on an example or two to help you see the kinds of questions or simple research that would provide appropriate context or help us value the research as presented. **Part 2:** Find the answers to the questions you posed or that you think of afterward, and write 1-2 paragraphs re-summarizing the article, with context and/or critical analysis. Cite your sources. **DUE: Elevator speech due Aug. 9. Write-up due the following Tuesday (August 14).** (10% of your total grade)

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 a week to complete the assignment, i.e. it's due the following Thursday at the start of class. Each test will emphasize that specific week's work, but some questions will reflect previous lessons, so your demonstrated knowledge will be cumulative. You'll be able to get support during section, but all the work is to be your own: 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 class (TH)
1	8.2	8.9
2	8.9	8.16
3	8.16	8.23
4*	8.23	8.30

*: 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 group project, to be presented in week 5.** Working in small groups, you will choose a 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. I'll give you a list to choose from. 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. What does GDP include? What does it leave out? What are the implications, in terms of whom or what is being valued and de-valued? I'll expect you to discuss your findings in a way that makes use of all that you've learned throughout the quarter. We'll discuss this assignment in class and section; you'll work together when we meet, but plan to connect outside of class too.

Certainly, your presentation will cover most of this material:

- What is the issue needing an ‘indicator’ measure, and what makes it a “social justice” issue? → To cover this, you’ll have to present certain numbers in a contextualized, meaningful way.
- Who (what entity) developed this measure, when, and how?
- Where does the quantitative information we need to understand this issue come from, and what does it say? → This will involve identifying key sources, considering their credibility and biases, explaining the *type* of research that produced the information, and summarizing the key findings.
- What is your assessment of the way/s that the indicator frames the issue? How does that show up (or get critiqued) in government agencies, popular media, alternative

(critical) media, and/or scholars have framed the issue → Show graphics, headlines, media clips, direct quotes.

- How would *you* frame the issue, using quantitative methods? → You may also use qualitative methods as a complement, but not as a substitute.
- In sum, use your numeracy skills to confront a social measure and the social justice issue underlying it from both hegemonic and counter-hegemonic perspectives, the better to understand *what* information most consumers are getting –for better or for worse—and *how best* to interpret it.

Each group will have about 45 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 Tuesday and some of Thursday of week 5.

In addition to presenting, each group 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 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.

Students will be able to **access the lectures** by going to webcast.ucsc.edu. After you click the link for CMMU 30, enter the username and password for this course's lectures:

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?); quality of elevator speech (accurate summary, appropriate questions, effective time management); and quality of follow-up essay (transforming a news article into something you've positioned within its wider world, demonstrating accurate spelling, grammar, punctuation, and phrasing, and citing your sources in accurate APA format).
- **Take-home tests – 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 intellectual taste you show in selecting appropriate materials for inclusion and in 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. 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 The Literary Guillotine, 204 Locust Street, 457-1195.

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. The focus will be on understanding the questions and concepts in the homeworks. 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 resource (Julianne) in learning the material.
- Thursdays: Turn in your homework. Then, lecture or guest. Then, project work.

Week One (July 31, August 2)

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

Reading for Thursday:

- Hacker, Andrew. (2016) The wrong way to teach math. *The New York Times*, February 28, 2016. **R-1**
- 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-2-7**
- Farmer, P. (1996) Social inequalities and emerging infectious diseases. *Emerging Infectious Diseases*, vol. 2, no. 4, pp. 259-269. **R-8-18**

DUE NEXT WEEK:

- Homework #1 Thursday (download from Canvas on August 2, hand it in on August 9th)
- Also, on Thursday Aug. 9th give your Numbers in the News presentation.

Week Two (August 7, 9)

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

DUE THIS WEEK:

- On Tuesday, **form groups** for the final project. Please review the list of social indicators, think about it, and come with your top 3 choices. Groups will meet and each person will leave with a ‘next step.’
- On Thursday, **hand in** Homework #1.
- Also, on Thursday **present** your “numbers in the news” elevator speech.

Reading for this week:

- Moore & Notz, Chapter 8 (Measuring). **R-19-34**
- Watanabe, Theresa. (2018) UC regents lower tuition for first time in nearly two decades. *Los Angeles Times*, July 19, 2018. **R-35-38**
- Shaw, Randy. (2015) How statistics on crime, housing can mislead. Beyondchron.com, posted March 17, 2015. **R-39-41**
- Anon. (2013) Holocaust facts: Where does the figure of 6 million victims come from? *Ha'aretz Magazine*, August 11, 2013. **R-42-44**
- Miller, Claire Cain. (2015) The search for the best estimate of the transgender population. *The New York Times*, June 8, 2015. **R-45-49**
- Tavernise, Sabrina. (2015) Fewer poor uninsured after health law, study finds. *New York Times*, June 23, 2015. **R-50-52**

DUE NEXT WEEK:

- On Tuesday Aug. 14th, hand in your Numbers in the News write-up (1 page + article)
- Homework #2 (download from Canvas on Thursday August 9th, hand it in on August 16th)

Week Three (August 14, 16)

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

DUE THIS WEEK:

- On Thursday, **hand in** Homework #2

Guest speaker on Thursday, 2.30-4: Jamie Joy, queer and sexual health activist.

Reading for this week:

- Moore & Notz, Chapter 1 (Where do data come from?) **R-53-66**
- Baumgaertner, Emily. (2018) Despite concerns, Census will ask respondents if they are U.S. citizens. *New York Times*, March 26, 2018. **R-67-68**
- Tankersley, J. and Baumgaertner, E. (2018) Here’s why an accurate Census count is so important. *New York Times*, March 27, 2018. **R-69-71**
- 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-72-104**

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DUE NEXT WEEK:

- Homework #3 (download from Canvas on Thursday August 16th, hand it in on August 23rd)

Week Four (August 21, 23)

**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 Thursday, **hand in** Homework #3

Reading for this week:

- Moore & Notz. Chapter 9: Do the numbers make sense? **R-105-114**
- Kahneman, Daniel. (2011) *Thinking, Fast and Slow*. New York: Farrar, Straus and Giroux. Selected chapter to be posted on Canvas.
- Moore & Notz. Chapter 10: Graphs, good and bad. **R-115-129**
- Gargani, John. (2012) Should the pie chart be retired? Evalblog.com, posted 2.13.12. **R-130-135**
- Leek, Jeff. (2012) The statisticians at Fox News use classic and novel graphical techniques to lead with data. SimplyStatistics.org (blog), posted 11.26.12. **R-136-140**
- Gargani, John. (2012) Tragic graphic: the Wall Street Journal lies with statistics? Evalblog.com, posted 1.23.12. **R-141-148**

DUE NEXT WEEK:

- Homework #4 (download from Canvas on Thursday August 23rd, hand it in on August 30th)
- Presentations and supplemental materials.

Week Five (August 28, 30)

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

No new reading.

DUE THIS WEEK:

- Starting on Tuesday, **STUDENT PRESENTATIONS!!** (Remember to hand in your supplemental materials)
- On Thursday, **hand in** Homework #4 and if you haven't turned it in already, your group project summary.

SORRY, NO EXTENSIONS

**That's the course!
~ THANKS ~**