



# STS 115: Data Sense and Exploration

Spring 2020 Course Syllabus

Tuesdays, 1:40 to 3PM via Zoom

Optional: Thursdays, 1:40 to 3PM via Zoom or Slack

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Office Hours: By appointment, via Zoom

## Why is this course important?

The rapid spread of Covid-19 has revealed a great deal about local, national, and global capacity to understand, mitigate, and respond to complex public health concerns. Data analysts have an important role to play in making sense of our current information landscape - a landscape that is both overwhelmed with the volume, speed, and heterogeneity of relevant data production, yet remains riddled with knowledge gaps. This course has been designed to give you hands-on experience making sense of the data landscape emerging in the wake of a global disaster, as well as practical skills in communicating data during times of rapid response.

## What is this course about?

This course will introduce you to finding, exploring, and presenting data. Focusing on the impact the virus has had on communities, you will learn how to narrate what you do not know about an issue, navigate data portals to find relevant data, assess the usefulness of data resources in answering complex questions, and evaluate gaps in knowledge. You will also learn how to present data in ways that are both accessible and compelling.

## What should you be able to do by the end of this course?

1. Assess the availability and fitness of public data for rapid response to dynamic and complex problems
2. Explore meaningful patterns, trends, and anomalies in data through transformation and visualization techniques in R
3. Evaluate how and why context matters in data analysis and communication
4. Communicate how data analysis can both produce and delimit insight to support research and decision-making
5. Effectively present and evaluate data research in oral and visual presentations

## COURSE TEXTS

### REQUIRED

Flood, Joe. 2011. *The Fires: How a Computer Formula, Big Ideas, and the Best of Intentions Burned Down New York City--and Determined the Future of Cities*. Riverhead Books.

### SUGGESTED

Grolemund, Garrett, and Hadley Wickham. *R for Data Science*. <https://r4ds.had.co.nz/>.

Machlis, Sharon. "Learn to Use R: Your Hands-on Guide." *ComputerWorld*.

## What are the course policies?

### *Attendance*

With everything going on in the world right now, I am implementing a no-questions asked policy in regards to attendance. Please take care of yourselves and your families. That being said, you will gain the most from the class if you regularly attend and participate in remote lectures and online course discussions. I will work very hard to make these sections engaging and worth your time despite the disruption in medium. Lectures will be recorded and made available within 24 hours of class time.

### *Late Assignments*

Please reach out to me if there are pressing reasons why you need to turn in an assignment late. Otherwise, late assignments will receive a 10% point deduction immediately. After this, an additional 10% will be deducted for each additional day late.

### *Academic Integrity*

Any time you use the ideas, images, language, etc. of another, you must cite that individual. If you use the words of another author verbatim (word-for-word), you must indicate that by putting the words in quotation marks. As a UC Davis student, you are expected to know when and how to cite and paraphrase correctly. If you do not, ask me for help.

### *Accommodations*

Please contact the UC Davis Student Disability Center to request accommodations. <https://sdc.ucdavis.edu/>

## What requirements does this course fulfill?

This course fulfills the **Oral Skills Literacy** requirement. The purpose of the Oral Skills Literacy requirement is to strengthen effective communication skills by strengthening students' ability to use critical thinking skills to present ideas or concepts verbally. To meet the requirements of this GE, you will be expected to report out from group discussions at least once in the quarter and to submit your final presentation as a video.

## How will you be graded?

| CRITERIA              | PERCENTAGE |
|-----------------------|------------|
| Weekly Labs           | 40%        |
| Reading Quizzes       | 15%        |
| Discussion Report-out | 10%        |
| TED Talk Annotation   | 10%        |
| Final Presentation    | 25%        |

## REMOTE WORK

### ZOOM

We will meet virtually on Tuesdays from 1:40 to 3PM via Zoom for lecture and discussion. All Zoom meetings have already been scheduled on Canvas. Any Zoom sessions will be recorded, captioned, and posted within 24-hours of the class time.

### SLACK

There is a private channel in the UC Davis Slack for our class. At any time, you may post questions in this channel. I will provide extra credit to students that regularly respond to student questions about coding issues. During class, we will also use this channel to record questions that come up during lecture. You can expect an invitation from me via email to join the channel.

# Course Schedule

## WEEK 1: OPPORTUNITIES FOR CRITICAL DATA DESIGN

3/31

4/2

## WEEK 2: DISCOVERING DATA

4/7

4/9

Due: Lab 1 (not graded)

## WEEK 3: READING A DATASET

4/14

Due: Flood, Chapters 1 & 2 (~60 pages)

4/16

Due: Lab 2

## WEEK 4: CLEANING AND EXPLORING DATA

4/21

Due: Flood, Chapters 3 & 4 (~40 pages)

4/23

Due: Lab 3

## WEEK 5: DATA VARIATION AND CO-VARIATION

4/28

Due: Flood, Chapters 5 & 6 (~35 pages)

4/30

Due: Lab 4

## WEEK 6: QUANTITATIVE INSIGHTS

5/5

Due: Flood, Chapters 7 & 8 (~45 pages)

5/7

Due: Lab 5

## WEEK 7: CONTEXTUALIZING DATA

5/12

Due: Flood, Chapters 9, 10, 11 (~40 pages)

5/14

Due: Lab 6

## WEEK 8: DESIGNING DATA PRESENTATION

5/19

Due: Flood, Chapters 12, 13 (~35 pages)

5/21

Due: Lab 7

## WEEK 9: SUMMARIZING CONCLUSIONS AND ASSESSING KNOWLEDGE GAPS

5/26

Due: Flood, Chapters 14, 15 (~30 pages)

5/28

Due: Lab 8

## WEEK 10: FINAL PRESENTATIONS

6/2

Read: Flood, Chapters 16, Conclusion (~25 pages)

6/4

Due: Lab 9

# Assignments & Assessments

## Labs

The labs in this course will walk you through technical skills in finding, formatting, analyzing, and presenting data in R. By the end of the 9 labs, you will have produced a working data dashboard for exploring data related to social vulnerability in public health crises. You may work on labs independently or via Zoom with partners. However, each student should submit an individual lab assignment. You need not work on the lab in the designated lab time. However, each week, on Thursdays from 1:40 to 3PM, I will be available via Zoom and in Slack to address any questions or concerns. I will also regularly monitor slack for questions.

All labs will be posted to GitHub in the first week of the course. I will go over how to download the labs and submit them back to GitHub in week one.

## Reading Quizzes

Each week we will read a few chapters from Joe Flood's *The Fires*. To help you stay on top of the reading, I will assign short multiple choice online reading quizzes to be completed before we meet each Tuesday. Reading quizzes will all be posted ahead of time, so you may look for the answers as you read.

## TED Talk Annotation

You will select a TED Talk to view related to topic of the data you are analyzing, and you will annotate the talk for the presenter's *style*. The goal of this assignment is to encourage you to look for effective modes of communication in oral presentations. I will provide a series of questions for you to consider as you annotate.

## Discussion Report-Out

Each student will lead one week of discussion in small groups. When it is your turn, you will be expected to select one from a selection of news articles or podcasts for your small group and to lead discussion. This week you will also be expected to report-out what your group discussed to the class.

## Final Presentation

In your final presentation, you will deliver a 5-minute presentation via video recording in which you present one *succinct* argument from your data research and back it up with evidence from your labs. You can either present:

1. An insight you have gained pertaining to your research topic
2. A form of organized ignorance baked into your dataset

## ABOUT ME

I am a cultural anthropologist that studies how communities think about and interface with data. Teaching is without question my favorite part of my job. In my courses, I engage students in unpacking complex contemporary problems and developing skills to address them through research and critical analysis.

