USCAnnenberg

JOUR 561: Fundamentals of Data Journalism Reporting
2 Units

Spring 2020 – Thursdays – 6:30-8:30 p.m.
Section: 21639D
Location: ANN 408
Course website: *https://amendelson.github.io/usc-data-2020/*

Instructor: Aaron Mendelson
Office Hours: After class each week; by appointment
Contact Info: aaron.a.mendelson@gmail.com; cell available on syllabus posted online; @a_mendelson

I. Course Description

The amount of data in the world is vast and ever-expanding. Analyzing public sources like inspection records, election results, crime reports, property rolls or payroll databases can produce definitive, bulletproof stories about an issue. Every day, journalists cross reference people and organizations in databases and documents to discover conflicts of interest. Reporters are also pulling information from social media and the internet to capture trends in real-time or dissect an event after the fact. Data has become an essential resource for journalists to cut through the noise and tell the complete, accurate story.

II. Overall Learning Objectives and Assessment

Other programming courses at USC teach students how to create web scrapers, interactive apps or virtual reality experiences. This is not that class. Instead, it will focus on advanced mapping, data analysis and visualization with reporting in mind.

This course will build on the skills learned in JOUR 599 Reporting with Data. In this data-rich world, students should know how to analyze data spatially with mapping software. They also should be able to explore a dataset with a powerful programming language like R. The course will be taught mostly in a boot-camp style.

In the first half of the class students will gain deeper experience in how to analyze and visualize data using R. They will learn how to write functions and loops to automate data analysis. The course will use R to visualize data with scatterplots, faceted charts and interactive graphics. Students will learn how to use R's Tidyverse and TidyCensus packages to clean, transform and model data in R.

In the second half of the class, student will dive into more advanced mapping concepts such as projections, how to incorporate Open Street Map and other free Plug-Ins to expand the power of QGIS and how to translate spatial analysis to interactive maps.

Beyond the concepts and skills, students will work in groups to contribute to a larger package of stories that tackles a pressing local issue with the goal of getting the project published.

III. Course Notes

Course materials will routinely be posted to the class website. Please bookmark and check *https://amendelson.github.io/usc-course-spring-2020/* each week.

IV. Description and Assessment of Assignments

There will be a series of practical assignments working with data. You will be working with a data set to produce a final project that showcases all the skills acquired throughout the semester. You will have three mapping assignments and two R coding assignments, which are included in the weekly breakdown below.

For the final project, you will be working in groups to contribute to a class project that tackles a pressing local issue like the affordable housing crisis, earthquake building safety or air pollution. Each group will conduct data analysis, report and write a story and create an interactive graphic that is part of a larger package. The stories and graphics should be able to stand on their own and demonstrate mastery of concepts learned in the course. We will have periodic class discussions throughout the course to chart progress and how best to present the information online and what media partner would be the best fit for the material.

V. Grading
a. Breakdown of Grade

Assignment	% of Grade
Assignments	40%
Data Project	50%
Participation	10%
TOTAL	**100%**

b. Grading Scale

95% to 100%: A	80% to 83%: B-	67% to 69%: D+
90% to 94%: A-	77% to 79%: C+	64% to 66%: D
87% to 89%: B+	74% to 76%: C	60% to 63%: D-
84% to 86%: B	70% to 73%: C-	0% to 59%: F

c. Grading Standards

All assignments will be edited on a professional basis and you will be judged first on the accuracy, fairness and objectivity of your stories. You will then be evaluated for broadcast style, editing, production value, originality and the ability to meet deadlines.

"A" stories are accurate, clear, comprehensive stories that are well written and require only minor copyediting (i.e., they would be aired or published). Video work must also be shot and edited creatively, be well paced and include good sound bites and natural sound that add flavor, color or emotion to the story.

"B" stories require more than minor editing and have a few style or spelling errors or one significant error of omission. For video, there may be minor flaws in the composition of some shots or in the editing. Good use of available sound bites is required.

"C" stories need considerable editing or rewriting and/or have many spelling, style or omission errors. Camera work and editing techniques in video stories are mediocre or unimaginative, but passable. Sound bites add little or no color - only information that could be better told in the reporter's narration.

"D" stories require excessive rewriting, have numerous errors and should not have been submitted. Camera work is unsatisfactory or fails to show important elements.

"F" stories have failed to meet the major criteria of the assignment, are late, have numerous errors or both. Your copy should not contain any errors in spelling, style, grammar and facts. Any misspelled or mispronounced proper noun will result in an automatic "F" on that assignment. Any factual error will also result in an automatic "F" on the assignment. Accuracy is the first law of journalism. The following are some other circumstances that would warrant a grade of "F" and potential USC/Annenberg disciplinary action:

- Fabricating a story or making up quotes or information.
- Plagiarizing a script/article, part of a script/article or information from any source.
- Staging video or telling interview subjects what to say.
- Using video shot by someone else and presenting it as original work.
- Shooting video in one location and presenting it as another location.
- Using the camcorder to intentionally intimidate, provoke or incite a person or a group of people to elicit more "dramatic" video.
- Promising, paying or giving someone something in exchange for doing an interview either on or off camera.
- Missing a deadline.

d. Grading Timeline
Instructor will endeavor to return all assignments in an expeditious manner.

VI. Assignment Submission Policy
A.   All assignments are due on the dates specified. Lacking prior discussion and agreement with the instructor, late assignments will automatically be given a grade of F.
B.   Assignments must be submitted via email.

Students are encouraged to submit their work for consideration to Annenberg Media or the Daily Trojan, or pitch it to mainstream media outlets. Visit http://bit.ly/SubmitAnnenbergMedia for more information about that submission and review process and email Daily Trojan news editors at dt.city@gmail.com for more on how to pitch your work to the campus newspaper.

VII. Required Readings and Supplementary Materials
R for Data Science, by Garrett Grolemund and Hadley Wickham, 2017, 522 pages. Also online for free at http://r4ds.had.co.nz/
Data Points: Visualization That Means Something, by Nathan Yau, 2013, 320 pages.
Precision Journalism: a Reporter's Introduction to Social Science Methods, 4th Edition, by Philip Meyer, 2002, 304 pages.

Instructor will also share tip sheets and tutorials for specific lessons.

Required software:
Quantum GIS – free and open source mapping software
Anaconda - includes Jupyter Notebooks, data analysis packages, package management tools, and environment manager to create virtual environments. Note: takes close to 1GB of disk space. Also install R Kernel.
R base package – free and open source software for statistics and graphics

VII. Laptop Policy

All undergraduate and graduate Annenberg majors and minors are required to have a PC or Apple laptop that can be used in Annenberg classes. Please refer to the **Annenberg Digital Lounge** for more information. To connect to USC's Secure Wireless network, please visit USC's **Information Technology Services** website.

IX. Add/Drop Dates for Session 001 (15 weeks: 1/13/20 – 5/1/20)

Friday, January 31: Last day to register and add classes for Session 001

Friday, January 31: Last day to drop a class without a mark of "W," except for Monday-only classes, and receive a refund for Session 001

Tuesday, February 4: Last day to drop a Monday-only class without a mark of "W" and receive a refund for Session 001

Friday, February 28: Last day to drop a course without a mark of "W" on the transcript for Session 001. [Please drop any course by the end of week three (or the 20 percent mark of the session) to avoid tuition charges.]

Friday, February 28: Last day to change pass/no pass to letter grade for Session 001. [All major and minor courses must be taken for a letter grade.]

Friday, April 3: Last day to drop a class with a mark of "W" for Session 001

X. Course Schedule: A Weekly Breakdown

Important note to students: Be advised that this syllabus is subject to change - and probably will change - based on the progress of the class, news events, and/or guest speaker availability.

	Topics/Daily Activities	**Readings and Homework**	**Deliverable/Due Dates**
Week 1 **Date: 1/16**	Course overview. Introductions.	Install and update R, R Studio and QGIS on your laptop	
Week 2 **Date: 1/23**	Class Project discussion.		**Final Project Milestone:** Each group pitches 3 story ideas
Week 3 **Date: 1/30**	Visualizing Data with ggplot, Part 1 – faceting. Class project discussion.		**Final Project Milestone:** Submit story pitch for group data story, including ideas for story and graphic.
Week 4 **Date: 2/6**	Visualizing Data with ggplot, Part 2 – layers and interactivity	R Data Viz Assignment	
Week 5 **Date: 2/13**	Class project discussion		**Final Project:** You should be exploring your data set, looking for trends and limitations in the data.
Week 6 **Date: 2/20**	Writing functions and loops in R	R Tidyverse Assignment	
Week 7 **Date: 2/27**	Tidyuniverse in R – cleaning and transforming data.		**Final Project:** Your data should be set, and you should be reporting and writing as you go.
Week 8 **Date: 3/5**	Tidyuniverse in R – modeling data. Class project discussion	R data wrangling with Final Project data assignment	
Week 9 **Date: 3/12**	TidyCensus in R – the best way to reign in Census data		**Final Project:** You should be conducting interviews and refining

			your analysis based on reporting and also writing the story.
Spring Break Date: 3/16-3/20	No Classes		
Week 10 Date: 3/26	Mapping Part 1 – Buffers on steroids, spatial queries and spatial joins.		**Final Project:** You should be working on drafts of story and graphics, looking for unanswered questions.
Week 11 Date: 4/2	Mapping Part 2 - Projections and the finer points of mapping.	Mapping Assignment 1	
Week 12 Date: 4/9	Mapping Part 3 – Using Open Street Map and Plug-Ins		**Final Project:** Rough draft of Data Story due, including methodology and graphics
Week 13 Date: 4/16	Mapping Part 4 – Interactive Maps. Class project discussion	Mapping Assignment 2	
Week 14 Date: 4/23	Bulk geocoding data with an API	Mapping Assignment 3	**Final Project**: You will get edits and feedback from instructor on your Data Story.
Week 15 Date: 4/30	Overview of Jupyter Notebook and R Kernel. Using Markdown and Github.		
FINAL EXAM PERIOD Date: 5/7, 7-9 p.m.	Course Discussion and Wrap-Up		**Final Project**: Final draft of Data Story due

XII. Policies and Procedures

Internships
The value of professional internships as part of the overall educational experience of our students has long been recognized by the School of Journalism. Accordingly, while internships are not required for successful completion of this course, any student enrolled in this course that undertakes and completes an approved, non-paid internship during this semester shall earn academic extra credit herein of an amount equal to 1 percent of the total available semester points for this course. To receive instructor approval, a student must request an internship letter from the Annenberg Career Development Office and bring it to the instructor to sign by the end of the third week of classes. The student must submit the signed letter to the media organization, along with the evaluation form provided by the Career Development Office. The form should be filled out by the intern supervisor and returned to the instructor at the end of the semester. No credit will be given if an evaluation form is not turned into the instructor by the last day of class. Note: The internship must by unpaid and can only be applied to one journalism or public relations class.

Statement on Academic Conduct and Support Systems
a. Academic Conduct
Plagiarism

Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Part B, Section 11, "Behavior Violating University Standards" policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

USC School of Journalism Policy on Academic Integrity
The following is the USC Annenberg School of Journalism's policy on academic integrity and repeated in the syllabus for every course in the school:

"Since its founding, the USC School of Journalism has maintained a commitment to the highest standards of ethical conduct and academic excellence. Any student found plagiarizing, fabricating, cheating on examinations, and/or purchasing papers or other assignments faces sanctions ranging from an 'F' on the assignment to dismissal from the School of Journalism. All academic integrity violations will be reported to the office of Student Judicial Affairs & Community Standards (SJACS), as per university policy, as well as journalism school administrators."

In addition, it is assumed that the work you submit for this course is work you have produced entirely by yourself, and has not been previously produced by you for submission in another course or Learning Lab, without approval of the instructor.

b. Support Systems
Counseling and Mental Health - (213) 740-9355 – 24/7 on call
studenthealth.usc.edu/counseling
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org
Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention and Services (RSVP) - (213) 740-9355(WELL), press "0" after hours – 24/7 on call
studenthealth.usc.edu/sexual-assault
Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED)- (213) 740-5086 | Title IX – (213) 821-8298
equity.usc.edu, titleix.usc.edu
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. The university prohibits discrimination or harassment based on the following *protected characteristics*: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations. The university also prohibits sexual assault, non-consensual sexual contact, sexual misconduct, intimate partner violence, stalking, malicious dissuasion, retaliation, and violation of interim measures.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298
usc-advocate.symplicity.com/care_report
Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity |Title IX for appropriate investigation, supportive measures, and response.

The Office of Disability Services and Programs - (213) 740-0776
dsp.usc.edu
Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Support and Advocacy - (213) 821-4710
uscsa.usc.edu
Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101
diversity.usc.edu
Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call
dps.usc.edu, emergency.usc.edu
Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call
dps.usc.edu
Non-emergency assistance or information.

Annenberg Student Success Fund
https://annenberg.usc.edu/current-students/resources/additional-funding-resources
The Annenberg Student Success Fund is a donor-funded financial aid account available to USC Annenberg undergraduate and graduate students for non-tuition expenses related to extra- and co-curricular programs and opportunities.

XIII. About Your Instructor
Aaron Mendelson is KPCC/LAist's senior data reporter, working on the station's data journalism and interactive projects.

At KPCC, he has used data to shine a light on the avalanche of outside money in local politics, spiking firearms sales, Los Angeles' bicycle infrastructure, and police militarization. He helped build a unique database on officer involved shootings in Los Angeles County for KPCC's Officer Involved project.

Aaron joined KPCC in 2014 and became a member of the station's investigative team in 2017.

He holds a master's degree from the UC Berkeley Graduate School of Journalism. Prior to joining KPCC, his work had been published and aired by Reuters, Marketplace, KQED and Mother Jones. He got his start in journalism at KFAI in Minneapolis.