USCAnnenberg

JOUR 561: Fundamentals of Data Journalism Reporting
2 Units

Spring 2019 – Wednesdays – 6:30-8:30 p.m.
Section: 21639D
Location: ANN 307

Instructor: Aaron Mendelson
Office: Ann Lobby or classroom
Office Hours: After class in ANN 307
Contact Info: aaronmen@usc.edu or
aaron.a.mendelson@gmail.com (preferred),
515.231.6762 (cell)

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, student will pick up where the fall session left off, diving 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.

In the second half of the class students will gain deeper experience in how to analyze and visualize data using R in the Jupyter Notebook so that all their work is organized and annotated and saved to Github. 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.

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. Description 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.

IV. Grading
a. Breakdown of Grades

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.

V. 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 Blackboard and weekly memos submitted by email.

VI. 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.

VIII. Add/Drop Dates for Session 001 (15 weeks: 1/7/19 – 4/26/19)

Friday, January 25: Last day to register and add classes for Session 00S1

Friday, January 25: Last day to drop a class without a mark of "W," except for Monday-only classes, and receive a refund for Session 001

Tuesday, January 29: last day to drop a Monday-only class without a mark of "W" and receive a refund for Session 001

Friday, February 22: Last day to drop a course without a mark of "W" on the transcript. [Please drop any course by the end of week three (or the week three equivalent for short sessions) to avoid tuition charges.]

Friday, April 5: Last day to drop a class with a mark of "W" for Session 001

IX. 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.*

Dates	Topics/Daily Activities	Readings and Homework	Deliverable/Due Dates
Week 1 **Date: 1/9**	Course overview. Introductions.	Install and update QGIS on your laptop	
Week 2 **Date: 1/16**	Class Project discussion.		**Final Project Milestone:** Each group pitches 3 story ideas
Week 3 **Date: 1/23**	Mapping Part 1 – Buffers on steroids, spatial queries and spatial joins.		**Final Project Milestone:** Submit story pitch for group data story, including ideas for story and graphic.
Week 4 **Date: 1/30**	Class project discussion		
Week 5 **Date: 2/6**	Mapping Part 2 - Projections and the finer points of mapping.	Mapping Assignment 1	**Final Project:** You should be exploring your data set, looking for trends and limitations in the data.
Week 6 **Date: 2/13**	Mapping Part 3 – Using Open Street Map and Plug-Ins		
Week 7 **Date: 2/20**	Mapping Part 4 – Interactive Maps. Class project discussion	Mapping Assignment 2	**Final Project:** Your data should be set, and you should be reporting and writing as you go.
Week 8 **Date: 2/27**	Bulk geocoding data with an API		
Week 9 **Date: 3/6**	Overview of Jupyter Notebook and R Kernel. Using Markdown and Github.	Mapping Assignment 3, installing Anaconda and R kernel on your laptop.	**Final Project:** You should be conducting interviews and refining your analysis based on reporting and also writing the story.
Date: 3/13	**No Class: Spring Break**		
Week 10 **Date: 3/20**	Visualizing Data with ggplot2, Part 1 –		**Final Project:** You should be working on drafts of story and

	faceting. Class project discussion.		graphics, looking for unanswered questions.
Week 11 **Date: 3/27**	Visualizing Data with ggplot2, Part 2 – layers and interactivity	R Data Viz Assignment	
Week 12 **Date: 4/3**	Writing functions and loops in R		**Final Project:** Rough draft of Data Story due, including methodology and graphics
Week 13 **Date: 4/10**	Tidyuniverse in R – cleaning and transforming data.		
Week 14 **Date: 4/17**	Tidyuniverse in R – modeling data. Class project discussion	R Tidyverse Assignment	**Final Project**: You will get edits and feedback from instructor on your Data Story.
Week 15 **Date: 4/24**	TidyCensus in R – the best way to reign in Census data		
FINAL EXAM **Date: 5/1, 7-9 p.m.**	Course Discussion and Wrap-Up		**Final Project**: Final draft of Data Story due

X. 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
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 Section 11, *Behavior Violating University Standards* (https://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 (http://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
Student Counseling Services (SCS) – (213) 740-7711 – 24/7 on call
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention. engemannshc.usc.edu/counseling

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

Relationship and Sexual Violence Prevention Services (RSVP) – (213) 740-4900 – 24/7 on call
Free and confidential therapy services, workshops, and training for situations related to gender-based harm. engemannshc.usc.edu/rsvp

Sexual Assault Resource Center
For more information about how to get help or help a survivor, rights, reporting options, and additional resources, visit the website: sarc.usc.edu

Office of Equity and Diversity (OED)/Title IX Compliance – (213) 740-5086
Works with faculty, staff, visitors, applicants, and students around issues of protected class. equity.usc.edu

Bias Assessment Response and Support
Incidents of bias, hate crimes and microaggressions need to be reported allowing for appropriate investigation and response. studentaffairs.usc.edu/bias-assessment-response-support

The Office of Disability Services and Programs
Provides certification for students with disabilities and helps arrange relevant accommodations. dsp.usc.edu

Student Support and Advocacy – (213) 821-4710
Assists students and families in resolving complex issues adversely affecting their success as a student EX: personal, financial, and academic. studentaffairs.usc.edu/ssa

Diversity at USC
Information on events, programs and training, the Diversity Task Force (including representatives for each school), chronology, participation, and various resources for students. diversity.usc.edu

USC Emergency Information
Provides safety and other updates, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible. emergency.usc.edu

USC Department of Public Safety – UPC: (213) 740-4321 – HSC: (323) 442-1000 – 24-hour emergency or to report a crime. Provides overall safety to USC community. dps.usc.edu

XI. About Your Instructor

Aaron Mendelson is KPCC/LAist's 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.