JOU 3121 Dataviz & Mapping

Spring 2023 | Class 20015, section DVIZ | Periods 8-10 Thursdays | Weimer 2056 | 3 credits

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Office hours: Mondays 4:00 to 5:00 pm and Thursdays 1:00 to 2:30 pm

In-person office hours are first-come, first-served. If those hours conflict with your schedule, contact me and we will find a time that works.

PART 1: ABOUT THE COURSE

Course Description

This course equips you to (1) create mobile-first, visual data stories and (2) conduct geospatial analysis involving location data. Data newbies welcome. Open to anyone with a working knowledge of journalism.

Objectives

By the end of the course, you will be able to:

- Find reliable numerical data sources and assess their provenance.
- Use spreadsheets to analyze and summarize data.
- Design visual data stories optimized for mobile.
- Apply best practices for visual grammar in chart and map design.
- Use Tableau to visually detect patterns and assess statistical significance.
- Obtain reliable GIS data via shapefiles, GeoJSON, and geocoding.
- Apply core geospatial principles to proper analysis of geographic data.
- Analyze GIS data via points in polygons, perimeter buffers, and isochrone layers.

My Related Data Courses

- JOU 3305 Data Journalism (fall): in-depth spreadsheet analysis and cleaning
- JOU 4930 Sports Data Journalism (fall): a sports version of Data Journalism
- JOU 4930 Advanced Data Journalism (spring): data coding using R

Required Textbook

None required. Recommended: "How Charts Lie: Getting Smarter About Visual Information" by Alberto Cairo (2019). W.W. Norton & Co. Ebook: $10.

Computer Requirements

- Laptop, either Mac or Windows. Have enough free disk space to load 2 programs.
- Download Office 365 on your laptop free through UF Tech

IRE Membership

For $25 (student rate), join Investigative Reporters and Editors (IRE), which includes NICAR for data journalists. Get access to 30,000 ideas, stories, tip sheets, data – and job prospects. IRE/NICAR is a superb journalism organization.

Tentative Schedule (subject to change)

	Date	Theme	Key Topics	Assignment
1	Jan. 12	Visuals 1: The Data Story	Create a mobile-first, visual data story using 3 charts and published on Medium	H1: UF Due Mon Jan 16
2	Jan. 19	Visuals 2: Chart Types	Identifying the story in the data and matching primary chart types to the data	H2: Wages Due Mon Jan 23
3	Jan. 26	Visuals 3: Refining Charts	Refining charts with visual embedding cues, annotating charts	H3: Bus Due Mon Jan 30
4	Feb. 2	Visuals 4: Mapping Data	Conveying data through point and choropleth maps	H4: Maps Due Mon Feb 6
5	Feb. 9	Visuals 5: Locator Maps	Creating locator maps that reveal location-specific data or time-sequence data	H5: Location Due Mon Feb 13
6	Feb. 16	Visuals 6: Census Data Story	Use current census data to create a 5-visual story with charts and maps	H6: Census Due Mon Feb 20
7	Feb. 23	Visuals 7: Pattern Detection	Using Tableau to find patterns; quartiles, correlations, box-and-whisker plots	H7: Tableau Due Mon Feb 27
8	March 2	Midterm Exam	Take at home. Available for at least 1 week. *No class due to NICAR conference*	Midterm Due Mon Mar 6
9	March 9	Demo Visual Data Story	Demo completed (not draft) data story in class and use feedback to refine	Data story Due Fri Mar 10
10	March 16		No class due to spring break	
11	March 23	QGIS 1: Cartography	Mapping mechanics; ethics of geospatial data; importing geodata; point analysis	H8: GIS 1 Due Mon Mar 27
12	March 30	QGIS 2: Joins	Joining numbers and geodata; choropleth and histogram analysis; geocoding; styling	H9: GIS 2 Due Mon April 3
13	April 6	QGIS 3: Point Analysis	Geospatial analysis sans maps; point analysis; analysis by locale and time	H10: GIS 3 Due Mon April 10
14	April 13	QGIS 4: Spatial Analysis	Isochrone analysis: Setting and measuring parameters using distance and traffic data	H11: GIS 4 Due Mon April 17
15	April 20	Demo QGIS Project	Demo completed (not draft) QGIS project to class and use feedback to refine	QGIS project Due Fri April 21
		Final Exam	Take at home. Available for at least 1 week.	Final exam Due Sat April 29

PART 2: ASSIGNMENTS AND GRADING

Attendance and Deadlines

Because this is a hands-on course, weekly attendance is expected. Deadlines are firm.

Grade Allocation

Weekly Homework	40%	Due 11:59 pm on Mondays; 1 low score drops
Visual Data Story	20%	Due 11:59 pm Friday, March 10
QGIS Project	20%	Due 11:59 pm Friday, April 21
Midterm	10%	Take at home; due 11:59 pm Monday, March 5
Final	10%	Take at home; due 11:59 pm Saturday, April 29

Grading Scale

	Percent		Percent		Percent		Percent
		B+	89-87%	C+	79-77%	D+	69-67%
A	100-93%	B	86-83%	C	76-73%	D	66-63%
A-	92-90%	B-	82-80%	C-	72-70%	D-	62-60%

Scores are rounded to the nearest whole point: 89.4 rounds down to 89 (B+) while 89.5 rounds up to 90 (A-). The UF grading policy details how GPA is computed.

Homework (40%)

Homework is assigned after each class and is due before 11:59 pm on Mondays. The low score drops. Because you have 4+ days to complete each assignment, no extensions will be allowed unless you have an exemption covered by UF policy for the entire time period.

Better yet, you have an incentive to get it done early. If you complete the homework within 48 hours (before 6 pm Saturday), you get 10 bonus points.

Visual Data Story (20%)

This is an original, timely, journalistic, data-driven visual story requiring a spreadsheet and optimized for a phone. It is like the homework, with at least 5 visuals. It must be your own work and be original to this course. Disclose any data sources and inspiration. Present your completed (not a draft) data story in class on Thursday, March 9, so you can get peer feedback and refine. Due: the next day: 11:59 p.m. Friday, March 10. More details below.

Exams: Midterm (10%) and Final (10%)

These are open-book, take-at-home (but take-by-yourself) exams.

QGIS Project (20%)

This is an original, timely and journalistic geospatial analysis that requires use of QGIS. It forms the basis for a (mostly completed) story. It must be your own work and be original to this course. Disclose any data sources and inspiration. Present your completed (not a draft) GIS project and show how you did the analysis in class on Thursday, April 20, so you can get peer feedback and refine. Due: 11:59 p.m. Friday, April 20. More details below.

Visual Data Story Rubric

Assignment: Create an interesting and concise data-driven visual story suitable for mobile.
Work product: URL of your story on Medium.
Grading standard: How likely is this story to impress a potential employer?

Category	Criteria
Topic (20%)	(1) Meaningfully answers a (2) timely (3) audience question of (4) civic interest. (5) Focused on one meaningful, non-trivial point. Both (6) concise and (7) sufficiently complete, without glaring omissions.
Data Analysis (20%)	Data are (1) sufficient to answer question, drawn from (2) reliable sources that are (3) attributed in charts. Analysis (4) required a spreadsheet, (5) employed appropriate measures (rate, average, ratio, pct, etc.) that are (6) normalized if required, such as population, and (7) condensed results to a rough maximum of 10 data points.
Text (20%)	Text is (1) mechanically sound, (2) clear, fair, and neutral, and (3) concise. (4) Numbers used sparingly, up to 1 per sentence and up to 3 per story. (5) Heads, text, and visuals are complementary, not repetitive. (6) Story headline uses verbs in the present tense. (7) Lede is 25 words max.
Visuals (40%)	Story has required number of visuals, 3 or 5, that follow best practice: A. Scan-read effectively on mobile: (1) clear; one message, (2) visual "picture" reads without text, (3) avoid labels, (4) use color keys only if necessary and if so with simplicity, and (5) use tooltips only for supplemental information. B. Accurate, avoiding misrepresentations: (1) numerical axes start at zero, (2) categorical axes are complete with equal units, (3) bar length is benchmarked properly, (4) data are normalized, especially population, and (5) line charts are reserved for ample, continuous data. C. Color is used effectively: (1) can be read in gray tones, (2) for emphasis if needed with categorical data, (3) for continuous data, use range or steps that best reflect data analysis pattern, (4) match palette to data values, (5) accommodate color blindness; and (6) use motifs consistently.

QGIS Project Rubric

Assignment: Create mostly completed, interesting story based on GIS analysis.
Work product: Upload 3 files: (1) QGIS map exported as PDF, (2) data diary describing steps taken in the analysis per below (Word doc), and (3) mostly completed story (Word doc).
Grading standard: How likely is this GIS project to impress a potential employer?

Category	Criteria
Topic (25%)	(1) Meaningfully answers a (2) timely (3) audience question of (4) civic interest. (5) Requires geo-location data, such as lat/long or point buffers. (6) Focused on one meaningful, non-trivial point.
QGIS Analysis (50%)	(1) QGIS required. Could not have been done with only map or spreadsheet. (2) Data are (3) sufficient to answer question, drawn from (4) reliable sources that are (4) attributed in story. (5) Analysis accurately answers question using correct methods such as point analysis, distance buffers, counting points in polygons, and isochrone analysis. (6) Sufficient detail provided so instructor can replicate analysis in QGIS.
Story (25%)	Text is (1) mechanically sound, (2) clear, fair, and neutral, and (3) concise. • Write at least a (4) headline and (5) lede. Complete (6) as much of story as you can; outline the rest (such as: "quote from biologist here"). • (7) Identify, by name and position, 2 expert sources you would interview. Bonus points if interviews completed. • If your finding would affect people, identify a third person you would interview by (8) specifying the exact criteria you would seek. • If more data are required (i.e, look up police case ID numbers of arrests within buffer zones), (9) specify the exact steps you would take.

Data Diary
Create a Word document with these subheads, answered:

1. My journalistic question was:
2. The geographic data sets I used were:
3. The steps I took in QGIS to analyze the data were: (Must be sufficiently detailed that instructor can replicate to test for accuracy.)
4. (If more detail required): The exact steps I would take to complete data collection are:

PART 3: OTHER IMPORTANT DETAILS

Academic Integrity

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code." On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (https://sccr.dso.ufl.edu/process/student-conduct-code) specifies a number of behaviors that are in violation of this code and the possible sanctions. Also, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with me. Violations can result in a failing grade for the course and referral to the dean of students.

Students with Disabilities

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center by visiting the get-started page. It is important to share any accommodation letter with me and discuss access needs as early as possible in the semester.

Diversity

The College of Journalism and Communications embraces an intellectual community enriched and enhanced by diversity along several dimensions, including race, ethnicity and national origins, gender and gender identity, sexuality, class, and religion. Each course is expected to help foster an understanding of the diversity of peoples and cultures and of the significance and impact of mass communication in a global society. To that end:

1. Please let me know if you find any material in the course violates that expectation.
2. Please alert me if you have a name or preferred pronouns that differ from the class roll information, which is my only source of information about you.
3. If you have any concerns involving diversity in this course that you feel uncomfortable discussing with me, I encourage you to contact Professor Joanna Hernandez, CJC director of inclusion and diversity, at jhernandez@jou.ufl.edu.

Course Evaluations

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

In-Class Recording
The official UF policy regarding in-class recording, to comply with a 2021 Florida law can be found here.

Health and Wellness

- **U Matter, We Care**: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit U Matter, We Care website to refer or report a concern and a team member will reach out to the student in distress.
- **Counseling and Wellness Center**: Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non-crisis services.
- **Student Health Care Center**: Call 352-392-1161 for 24/7 information to help you find the care you need or visit the Student Health Care Center website.
- **University Police Department**: Visit UF Police Department website or call 352-392-1111 (or 911 for emergencies).
- **UF Health Shands Emergency Room / Trauma Center**: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville. Visit the UF Health Emergency Room and Trauma Center website.

Academic Resources

- **E-learning technical support**: Contact the UF Computing Help Desk website, or phone 24/7 at 352-392-4357, or email helpdesk@ufl.edu.
- **Career Connections Center**: Career assistance and counseling services. Visit the website. Reitz Union Suite 1300, 352-392-1601.
- **Library Support**: Various ways to receive assistance with respect to using the libraries or finding resources. Visit the website.
- **Teaching Center**: General study skills and tutoring. Visit the website. Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420.
- **On-Campus Student Complaints**: Details are available through the Student Honor Code and Student Conduct Code, also known as the Orange Book.