

# JOU 3121 Dataviz & Mapping

Spring 2020 | Section 24900 | Periods 8-10 Thursdays, Williamson Hall 0202 | 3 credits



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Office: Weimer 3052

Office hours: Wednesdays 2:00 to 4:00 pm / Thursdays 10:00 am to noon

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Office hours are times devoted to students to drop in, first come, first served. If you have classes during those 4 hours, make an appointment. Or come anytime my door is open.

## ABOUT THE COURSE

### Course Description

This course covers the foundational skills required for any professional communicator who seeks to tell a visual data story for audiences that rely on cellphones, as well as the basics of geospatial analysis. The emphasis is on data evaluation using code-free tools. Prerequisite: Sophomore standing and either MMC 2450 (Data Literacy) or permission of instructor.

### About Data Courses

This course complements JOU 3305 Data Journalism and together form a two-course specialization in the numerical side of data. It also can pair well with JOU 3363 (Intro to Web Apps) to form a two-course specialization in data presentation.

### Objectives

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

- Create a visual, scrollable data story optimized for a cellphone.
- Conduct geospatial analysis to find a journalism-worthy story.
- Scrutinize data to find insight and patterns of interest to the audience.
- Match visualization techniques to the data.
- Use color, type, shapes and other tools to foster accuracy and clarity.

### Required Textbook

“How Charts Lie: Getting Smarter About Visual Information” by Alberto Cairo (2019). W.W. Norton & Co. ISBN: 978-1-324-00156-0

### Laptop Required

The classroom has no computers so bring a laptop (either Mac or Windows) and your charger if the battery won't last 3 hours. An old computer is fine, but (1) ensure the operating system has been updated in the last year, and (2) clear off old files or programs if the hard drive has less than 25% capacity so you can load two large programs we will use.

**Tentative Schedule**

	<b>Date</b>	<b>Theme</b>	<b>Key Topics (Tools)</b>	<b>Assignment</b>
1	Jan. 9	Intro	Visual story principles; planning your data story; word clouds (Medium, Word)	Homework 1
2	Jan. 16	Discerning Data	Types of data and variables; use of color; chart scaling; chart encoding (Sheets, Datawrapper)	Homework 2
3	Jan. 23	Parsing Data	Identifying and isolating key data points in a spreadsheet (Sheets, Datawrapper)	Homework 3
4	Jan. 30	Single-Variable Charts	Creating and refining bar, column, line, area, donut/pie charts (Datawrapper)	Homework 4
5	Feb. 6	Multi-Variable Charts	Creating and refining stacked, dot, arrow, and bullet charts; tables; scatterplots (Datawrapper)	Homework 5
6	Feb. 13	Maps as Visual Tool	Creating and annotating locator and choropleth maps (Datawrapper and Google Maps)	Homework 6
7	Feb. 20	Pattern Detection	Finding statistically significant patterns; quartiles, correlations, box-and-whisker plots (Tableau)	Complete data story
8	Feb. 27	Demo Data Story	Demo your completed (not draft) data story to class and use feedback to refine; due next day	Data Story; midterm
	March 5	No class (spring break)		
9	March 12	GIS 1: Cartography	Elements of cartography: datums, projections, coordinates; shapefiles (QGIS)	Homework 7
10	March 19	GIS 2: Joining	Joining 2 geographic-based data files; using U.S. census files; geocoding addresses (QGIS)	Homework 8
11	March 26	GIS 3: Point Analysis	Setting and measuring boundaries; counting points in polygons (QGIS)	Homework 9
12	April 2	GIS 4: Traffic Analysis	Setting and measuring distances using highway and traffic data (ArcGIS)	Homework 10
13	April 9	GIS 5: Publication	Publishing and sharing static and interactive maps (QGIS, ArcGIS)	Complete GIS project
14	April 16	Demo GIS Project	Demo your completed (not draft) GIS project to class and use feedback to refine; due next day	GIS Project; final Exam

**ASSIGNMENTS AND GRADING**

**Grade Allocation**

Homework (best 9 of 10 count) .....	40%
Data Story (due 6:00 pm Friday, Feb. 28) .....	20%
GIS Project (due 6:00 pm Friday, April 17) .....	20%
Midterm (take at home; due 11:59 pm Monday, March 9) .....	10%
Final (take at home; due 11:59 pm Monday, April 27).....	10%

### **Homework (40%)**

Homework assignments will reinforce classroom learning and apply assigned readings. One low score from the semester will drop.

### **Data Story (20%)**

This is an original, journalistic, and data-driven visual story optimized for a cellphone with 5 tables, charts, or maps of 3 different types. An “A” story asks and answers a meaningful question and is ready for publication.

The data story can be inspired by other work you have seen, but still must be your own work. Any sources of data or inspiration should be identified along with the story.

The story can appear as a draft Medium post or on your own website. Either way, I will use what I see on my cellphone to grade the story. See the following rubric for more details.

You will present your completed (not a draft) data story in class on Feb. 27 so you can get peer feedback and make refinements before submitting a version for grading. Upload the URL for the data story within 24 hours after class, or by 6:00 p.m. Friday, Feb. 28.

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

These are take-at-home (and take-by-yourself) exams. You can use your notes and consult readings, but not each other.

The midterm will cover the first half of class. It will be available on Canvas by Feb. 28, before spring break. It is due 11:59 p.m. Monday, March 9 (the Monday after spring break).

The final will cover the second half of class. It will be available on Canvas by April 17, the day after our last class. It is due 11:59 p.m. Monday, April 27 (the Monday of finals week).

### **GIS Project (20%)**

This is an original, timely and journalistic geospatial analysis based on QGIS or ArcGIS. It should (a) be enlightening and relevant to the audience of your choice, and (b) identify the next steps you would take to publish your analysis, such interviewing specific (preferably named) people. An “A” project asks and answers a meaningful question and is likely to produce a publishable story.

The GIS project can be inspired by other work you have seen, but still must be your own work. Any sources of data or inspiration should be identified along with the project. See the following rubric for more details.

You will present your completed (not a draft) GIS project (and show how you did the analysis) in class on April 16 so you can get peer feedback and make refinements before submitting a version for grading. Upload the GIS project within 24 hours after class, or by 6:00 p.m. Friday, April 17.

### Visual Data Story Project Rubric

Category	Excellent (A) 10-9 points	Very Good (B) 8 points	Good (C) 7 points	Satisfactory (D) 6 points	Unsatisfactory 5-0 points
1. Topic Compelling	Story (1) asks and (2) answers a meaningful question relevant to the audience	Story has a meaningful Q and A but lacks relevance	Story has a meaningful Q but not a meaningful A	Story has meaningful A but not a meaningful Q	Story lacks meaningful Q relevant to audience
2. Clear Presentation	Story presentation is clear in the (1) headline, (2) visuals, (3) and text so that, as a whole, story (4) reads quickly on a cellphone	All four criteria met yet story is less than crystal clear	Three criteria met	Two criteria met	One criterion met
3. Solid Data Sources	Data are (1) reliable, (2) sufficient to answer the question, (3) without significant holes and (4) properly credited	All four criteria met yet sources are deficient or lacking	Three criteria met	Two criteria met	One criterion met
4. Solid Data Analysis	Author has (1) offered evidence of (2) meaningful (3) primary analysis that (4) is statistically significant	All four criteria met yet analysis is unconvincing	Three criteria met	Two criteria met	One criterion met
5. Visual Phone Story	Scrollable story forms (1) a cohesive narrative that is (2) easily read on a phone (3) with meaningful visual elements that (4) break up text of 3 graphs max	All four criteria met yet story not optimal for phone	Three criteria met	Two criteria met	One criterion met
6. Quality Data Presentation	Data are presented through (1) 5 charts, tables or maps (2) of 3 different types, (3) visuals match the data type and (4) are done properly in labels, axes, etc.	All four criteria met yet visuals not all of high quality	Three criteria met	Two criteria met	One criterion met
7. Clear Visual Mechanics	Visuals presented with clarity in use of (1) color and (2) typography that is (3) accessible and (4) readable on a cellphone	All four criteria met yet visuals less than clear in mechanics	Three criteria met	Two criteria met	One criterion met
8. Quality Sourcing	Story has 3 authoritative data or human sources	Three sources but not all are high quality	Three lower quality sources used	Two sources used	One source used
9. Concise Presentation	Story is concise in (1) the overall presentation as well as in (2) text and (3) charts and tables and (4) visuals	All four criteria met yet story lacks crisp concision	Three criteria met	Two criteria met	One criterion met
10. Solid Writing Mechanics	Story is (1) lucid and clear with (2) no spelling errors and few errors in (3) grammar or (4) punctuation	All four criteria met yet writing less than solid	Three criteria met	Two criteria met	One criterion met

**GIS Project Rubric**

	<b>Excellent (A)</b>	<b>Very Good (B)</b>	<b>Good (C)</b>	<b>Satisfactory (D)</b>	<b>Unsatisfactory</b>
Insight (50%)	“Wow” insight is original, fresh and meaningful; clearly merits wide social sharing (like gaps in fire-rescue locations)	Original insight meaningful and merits social sharing but lacks “wow” (like crime density associated with poverty)	Original insight meaningful and thus merits social sharing but expected (like heavy water users living in rich subdivisions)	Original insight of limited value or meaning (like rural voters mostly GOP and urban voters mostly Dem)	Original insight has little value and unlikely to be shared
Analysis (20%)	Analysis could only be done using a GIS tool (QGIS or ArcGIS)	Analysis could only be done using a GIS tool (QGIS or ArcGIS)	Analysis could only be done using a GIS tool (QGIS or ArcGIS)	Analysis could only be done using a GIS tool (QGIS or ArcGIS)	Analysis could have been done via a visual mapping tool like Datawrapper
Variables (10%)	Two or more variables that are geographically based	Two or more variables that are geographically based	Two or more variables that are geographically based	Two or more variables that are geographically based	One variable that is geographically based
Styling (10%)	Symbols and colors match variables and message; map is publication-ready	Symbols and colors match variables and message; map is publication-ready	Symbols and colors match variables and message; map could use editing	Only symbols or colors (not both) match variables and message but map publishable	Neither symbols nor colors match variables or message; map unpublishable
Next steps (10%)	Specify all next steps that would ensure project published or advanced	Specify next steps that would ensure project published or advanced	Specify next steps that might help project to be published or advanced	Offer next steps likely to help but are a little vague or incomplete	Next steps are unlikely to help project to be published or advanced

**Attendance**

Attendance is expected. Course requirements for attendance, make-up exams, assignments and other work are consistent with UF [policy](#). For absences covered by UF policy, such as illness, you are responsible for alerting the professor before class and for promptly providing appropriate documentation.

**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.

## 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.

When I discover cheating, my default policy is to fail all involved for the entire course and report the details to the Dean of Students Office.

### 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/>.

### 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 [disability.ufl.edu/students/get-started](http://disability.ufl.edu/students/get-started). It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

### Health and Wellness

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on campus by encouraging everyone to look out for one another and to reach out for help if a person is in need.

If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by calling 352-392-1575.

The U Matter, We Care team can help connect students to many other helping resources including, but not limited to, victim advocates, housing staff, and the Counseling and Wellness Center. Asking for help is a sign of strength.

In case of emergency, call 911.

### **Academic Resources**

- E-learning technical support: 352-392-4357 (select option 2) or e-mail to [Learningsupport@ufl.edu](mailto:Learningsupport@ufl.edu) or reach the [website](#).
- For career advice and planning, or even help selecting a major or minor, contact the [Career Resource Center](#) in the Reitz Union, 392-1601.
- For help in finding resources, ask a UF librarian through [Library Support](#).
- General study skills and tutoring available from the [Teaching Center](#), Broward Hall, 392-2010 or 392-6420.