

## JOU 4306 Advanced Data Journalism

Spring 2024 | Class 28635, section ADV1 | Periods 6-8 Mondays | Weimer 2050 | 3 credits



### Associate Professor Norman P. Lewis, Ph.D.

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

Office hours are in-person (in my office) and drop-in (no appointment).

If those hours conflict with your schedule, contact me and we will find a time that works.

## PART 1: ABOUT THE COURSE

### Course Description

Blend journalism and data science to become a full-time data journalist. Program in R to replace spreadsheets and databases with reproducible data analysis. Clearly communicate results accurately to peers and lay audiences via web site.

### Prerequisites

Completion of either fall data course: JOU 3305 Data Journalism or JOU 4318 Sports Data Journalism. No prior coding experience expected.

### Course Objectives

To be hireable as a full-time data journalist (the in-house expert) who can:

- Program in R to analyze and communicate data for common news topics.
- Acquire and parse data from standard file formats and APIs.
- Apply statistical significance testing to common journalism situations.
- Analyze census data to originate or supplement news coverage.
- Collaborate on data projects using GitHub and version control.
- Communicate data analysis for internal and external use via Quarto.

### Required Materials

- Basic laptop, either Mac or Windows
- No textbook. No materials and supplies fee.

### 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. Perfect organization for data journalists.

**Tentative Schedule (subject to change)**

	<b>Date</b>	<b>Theme</b>	<b>Skills</b>	<b>Assignment</b>
1	Jan 8	Univariate	<b>Single-Variable Analysis</b> Tidyverse essentials and ggplot charts. Quartile analysis.	<b>H1: Univariate</b> Due: Fri Jan. 12
2	Jan 15		No class: MLK Jr Day	
3	Jan 22	Bivariate	<b>Analysis with 2 variables</b> Confidence levels. Anchor y-axis at zero. Scatterplot with trend lines and error bars.	<b>H2: Bivariate</b> Due: Fri Jan. 26
4	Jan 29	Wrangle	<b>Import, Format, Dates</b> Import from Socrata websites, CSV, TSV. Convert data types. Date math and parsing. Chart scales.	<b>H3: Wrangle</b> Due: Fri Feb. 2
5	Feb 5	Assemble	<b>Joins, Text Search, Normalize</b> Joins. Combine CSVs by row or col. Strings: Detect, convert case, handle NA, collapse space.	<b>H4: Assemble</b> Due: Fri Feb 9
6	Feb 12	Format	<b>Cleaning, Tidy Data, String Parsing</b> Clean data, numbers. Convert to/from tidy formats. Parse strings. Column chart variations.	<b>H5: Format</b> Due: Fri Feb 16
7	Feb 19	Refine	<b>Refining Chart Appearance</b> Axis labels. Color usage. Annotations. Themes. Axis scaling.	<b>H6: Refine</b> Due: Fri Feb 23
8	Feb 26	Complete	<b>How to Complete a Project</b> Collapse factors. Split axis labels. Text, value, and % labels. String substitution. Highlight bars with color.	<b>Exam 1 (at home)</b> Due: Fri Mar 1
9	Mar 4		No class; spring break	
10	Mar 11	Quarto	<b>Publishing Project Online via R Pubs</b> Use Quarto within R Studio to publish the project, with tables and charts, on a public website.	<b>H7: Quarto</b> Due: Fri Mar 15
11	Mar 18	Statistics	<b>Applied Statistics for Journalism</b> Chi-square. T-test. Correlation matrix. Linear regression. Boxplot analysis.	<b>H8: Stats</b> Due: Fri Mar 22 <b>Project Plan</b> Due: Sun Mar 24
12	Mar 25	Census	<b>Obtain and Analyze Census Bureau Data</b> API key. Census tables, geographies. String remove. Histogram. Visual margin of error. Beeswarm.	<b>H9: Census</b> Due: Fri Mar 29
13	Apr 1	(break)	No class so you can work on your project.	No assignment this week
14	Apr 8*	Geospatial	<b>Geospatial Analysis</b> Census maps and geometries. Point analysis.	<b>H10g: Geo</b> Due: Fri Apr 12
15	Apr 15*	Sports	<b>Sports Data</b> R packages to get play-by-play data in pro sports	<b>H10s: Sports</b> Due: Fri Apr 19
16	Apr 22	Present	<b>Classroom Presentation</b> Present Quarto project to get peer feedback	<b>Project</b> Due: Wed Apr 24
			Exam 2 (at home)	Due: Tue Apr 30

\* You can attend either April 8 or April 15 class, or both. Can do either H10g or H10s or both.

**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 ..... 50%    Due 11:59 pm Fridays. Best 9 scores count.  
 Project ..... 30%    Due 11:59 pm Wednesday, April 24  
 Exam 1 ..... 10%    Due 11:59 pm Friday, March 1  
 Exam 2 ..... 10%    Due 11:59 pm Tuesday, April 30

**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 (50%)**

Homework is assigned after each class and is due before 11:59 pm on Fridays. 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.



*Bonus:* Each homework submitted before 4 pm Wednesday earns 10 extra points. Why the bonus? Completing work within 48 hours improves learning and retention.

**Extra Credit**

The only extra credit is the weekly opportunity to earn a full letter grade by turning in each week’s homework early (above). No other option is available.

**Exam 1 (10%) and Exam 2 (10%)**

- Like the quizzes, with more extensive data sets.
- Each is a take-at-home exam. Each is open-book, but only-you.
- Each has a full week to complete. No extensions are possible unless documented and covered by UF policy for the entire week (and not the last minute).
- Exam 1: Due before 11:59 pm Friday, March 1.
- Exam 2: Due before 11:59 pm Tuesday, April 30.

**Project (30%)**

- See rubric details below.
- Sunday, March 24: Project Plan email due (5% of grade)
- Monday, April 22: Project Presentation in class (5% of grade)
- Wednesday, April 24: Final Project due (90% of grade)

## Project Rubric

**Assignment:** Create web page of your original data analysis, for colleagues and public.

**Work product:** (1) URL of your RPub page, (2) R script used to analyze data, and (3) the data.

**Grading standard:** How likely is this project to impress a potential employer?

Category	Criteria
<b>Data Analysis</b> (40%)	<ol style="list-style-type: none"> <li>1. Explicitly driven by a meaningful question.</li> <li>2. Relies on at least 1 substantial, current, and reliable data set.</li> <li>3. Project required original and substantial data analysis by you, using R.</li> <li>4. Created for an audience of less data-savvy peers in your organization.</li> <li>5. Proposes 1 or more meaningful stories that peers (not you) could pursue.</li> <li>6. Complete. No glaring omissions while preferring quality over quantity.</li> <li>7. Data are normalized as necessary and avoid misleading conclusions.</li> <li>8. Calculations (percent, rate, mean, median, etc.) are appropriate for the data.</li> <li>9. Statistical analysis is not necessary, but if performed, appropriate for the data.</li> </ol>
<b>Web Page</b> (30%)	<ol style="list-style-type: none"> <li>1. At least 1 substantial, meaningful, searchable table.</li> <li>2. At least 3 visual elements (charts/maps) that illuminate meaningful patterns.</li> <li>3. Charts and maps follow best practice for readability, clarity, and precision.</li> <li>4. Text is clear, accurate, and mechanically correct (spelling and grammar).</li> </ol>
<b>Code</b> (20%)	<ol style="list-style-type: none"> <li>1. Transparent: Ample # comments explain code for an R novice.</li> <li>2. Repeatable: Code can be reused with few or no changes if data are updated.</li> <li>3. Efficient: Code is concise; just enough to complete the task.</li> <li>4. All sources referenced with embedded hyperlinks.</li> </ol>
<b>Plan</b> (5%)	Due Sunday, March 24. Supply the 10 requirements in the Project Plan assignment (repeated below). Each of the 10 is worth half a percentage point.
<b>Present</b> (5%)	In class Monday, April 22. Present completed (not draft) project website. Use feedback to refine project before final submission. Points only if story is completed and finished RPub page is shown to class. Partially complete is 0%.

1. I invite you to discuss your project with me before March 24.
2. On March 24, a well-defined and researched project *plan* is due.
3. (FYI, hope is not a plan.)

**Project Plan (5%)**

Upload a Word document to the assignment with the following.

Complete these statements with specific and reasonable (based on research, not hope) answers. Each is worth 0.5 percent.

1. **Question:** The specific, non-binary question driving my project is:
2. **Data:** The dataset(s) I will analyze is/are:
3. **Source:** The data are from (hyperlink to source):
4. **Variance:** This dataset is likely to show variance or patterns because:
5. **Analysis:** The analysis I will conduct in R to add value to this data involves (specify):
6. **Table:** The table I will produce online will be approximately (number) of observations and show these variables (specify):
7. **Chart 1:** Likely will be (specify headline, data to be shown, and type of chart):
8. **Chart 2:** Likely will be (specify headline, data to be shown, and type of chart):
9. **Chart 3:** Likely will be (specify headline, data to be shown, and type of chart):
10. **Story:** The project is likely to enable others in my organization to develop their own story, such as (specify one realistic story from your analysis):

Due: Before 11:59 pm Sunday, March 24

**Project Presentation (5%)**

See rubric above.

### 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.

**In-Class Recording**

The official UF policy regarding in-class recording, to comply with a 2021 Florida law can be found [here](#).

### 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](mailto: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](#). 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 [Bluera](#). Summaries of course evaluation results are [publicly available](#).

### Health and Wellness

- **U Matter, We Care:** If you or someone you know is in distress, please contact [umatter@ufl.edu](mailto: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](mailto: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](#).