

# Syllabus

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## Course title and instructor

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**Title:** JOUR 301 Data Journalism

**Meeting:** (online) 5-7:50 Mondays

**Instructor:** Martin Frigaard

**Email:** [mfrigaard@csuchico.edu](mailto:mfrigaard@csuchico.edu)

**Office Hours:** Mon. 9am - 9:45am (open Zoom), Thurs. 10am - 11am (open Zoom), or by appointment

**GitHub:** [mjfrigaard](#)

## Description

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This course trains students to use the tools (software, methods and theory) required to access, process, analyze and compose findings in the manner of public interest and data journalism. The course will introduce students to the R programming language, data manipulation, and visualizations.

## Student Learning Outcomes

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1. What is data journalism (and why it exists)

2. Data science technologies
3. Common sources for data (open datasets, websites, etc.)
4. Using R for data manipulation
5. A grammar of graphics
6. Creating data visualizations
7. Identifying good, bad, ugly, and wrong data visualizations

## What this course is about

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This course is about data visualizations and how to reason about and communicate with data visualizations. A substantial portion of this course is dedicated to the underlying technologies behind data visualizations (R code, markdown, and data in various formats). Students will learn to combine code and prose with visualizations into reproducible outputs (such as html reports, websites or blogs).

## Topics

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1. Data science technologies
2. Methods for data storage, extraction and manipulation
3. Performing basic data summaries
4. Creating and interpreting data visualizations

Data Journalism requires both theoretical and practical applications of statistical summaries and visualizations. The theoretical, here, is concerned with what is required to determine the truth about a topic, and how to present that truth in a compelling and comprehensible way to your audience. The practical application addresses how data are collected, stored, retrieved, manipulated and analyzed in the pursuit of that truth. Because of the wide range of topics and technical details required to do this work, it's imperative that students commit to attending class, completing readings and homework, and consult me if and when difficulties arise.

Further, this is a course in a professional program. This means that students approach this coursework as they would a professional commitment with timeliness (in attendance and submission of assignments), responsibilities (to readings and assignments), and respectful interactions with others in the course.

By taking this course, students commit to attending every meeting (absent medical documentation) and arriving in class prepared and on-time. This course meets only sixteen times, which necessitates student attendance for comprehension of material. Therefore, attendance is mandatory and each missed meeting (sans medical documentation) will result in final grade reduction of one full letter grade. There will be opportunities to make up missed assignments and absences throughout the course.

## Assignments and grading

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This course requires that students attend class to learn basic data manipulation and data visualization

skills. Therefore, much of the student evaluation, besides the weekly exercises conducted to ensure comprehension, is based on participation and the data journalism projects.

**Homework and exercises (50%):** These are in-class exercises and homework assignments. Each missed exercise after the first will cost the student a full letter grade for the course. Completion of these assignments is obligatory.

**Project 1 (25%):** Reproduce a data visualization and provide accompanying narrative. This project gives students an opportunity to practice data manipulation, visualization, graphing techniques, presentation and framing. Length: 1,200-1,500 words.

**Project 2 (25%):** Exploratory Data Analysis (EDA) project. Students will choose from a list of data sources, create a sequence of data visualizations and displays, and provide related commentary and narrative. This project will be published online. This project requires the student to use the R programming to examine an issue of social significance. Length: 1,200-1,500 words.

I will keep the gradebook current in Blackboard. If you have difficulty with material or concepts, please contact me. There will be many opportunities to review material individually, but I need to be aware of any such difficulties.

## The Weekly Agenda

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We meet once a week, during which I give a brief lecture, following a discussion. We will then walk-through 'live coding' activities that demonstrate how to collect, clean and visualize a variety of data types. The last portion of class can be used to complete the assigned activities for the week. Exercises are due at the end of each week, and completion will constitute your participation grade for that week.

Prior to our meeting each week, there will be assigned readings. There will be a quiz on this material given immediately at the beginning of each week's class.

## Plagiarism

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In this course, we are following standard definitions of plagiarism that include: no copying of text (verbatim or partial), no introduction of someone else's idea without attribution, no use of someone else's intellectual property without consent and clear attribution of source. Cheating on any quiz or exam will be considered a similar violation.

## Writing code

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Students will encounter a fair amount of code in this course. While this is not a programming course, it's standard practice to use code snippets from online resources like StackOverflow or online vignettes. R is an open-source programming language, and reusing code encourages collaborators to build on the work of others. Therefore, students are encouraged to copy and paste code from other sources. However, this code usually needs to be adapted to fit a particular use. This is the one exception to the plagiarism

policy. All story text and photos must be exclusively your own. I loathe dishonesty, in nearly every form and circumstance. I will immediately fail and request the maximum possible punishment for any student that violates these policies.

## Books and materials

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### Data Journalism texts:

- The Data Journalism Handbook, Gray, et al., (2012). Online at <http://datajournalismhandbook.org/1.0/en/index.html>
- The Data Journalism Handbook 2, Gray, et al., (2018). Online at <https://datajournalism.com/read/handbook/two>

### R programming texts:

The following texts are available online free of charge:

[R for Data Science](#)

[R for Data Science, 2nd ed](#)

[R Markdown: the definitive guide](#)

### Data visualization texts:

The following texts are available online free of charge:

[Data Visualization: A practical introduction](#)

[Fundamentals of Data Visualization](#)

Additionally, several online readings will be required and assigned in class. Students are expected to have consistent high-speed Internet availability and have access to a computer with modern processing capabilities (open lab is available for those without such a machine).

## Disabilities

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If you have a disability and require special accommodations, please see me to discuss possible arrangements with ARC.

## Grading

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All tests, quizzes and large presentations will be graded on a 100-point scale. All percentages are rounded to the nearest whole percent. Letter grades are based on the following scale:

## Grading scale

Percentage	Grade
92 and above	A
90-91	A-
88-89	B+
82-87	B
80-81	B-
78-79	C+
72-77	C
70-71	C-
68-69	D+
60-67	D
below 60	F

## Corrections

If you see mistakes or want to suggest changes, please [create an issue](#) on the source repository.