

Schedule

Course Schedule

subject to change

Week	Topic	Tools
	Preliminaries	
1	Course Introduction	Scripts; R and RStudio
2	A Guide to Your Computer	Markup Languages; Quarto
3	File Management & Version Control	Filesystems; git; GitHub
4	A Field Guide to Data	Data Formats; surveys, readr; tidy
5	Structural Data Manipulation	dplyr; srvyr
6	Data Visualization I	Grammar of Graphics; ggplot2
7	Data Visualization II	ggplot2
8	Core Exam (Thursday, October 15)	
9	Workflow & Data Retrieval	tidycensus; APIs; database/SQL overview
10	Social Networks & Network Data	iGraph; statnet
11	Cartography	tidyverse mapping; color scales; projection
12	Geographic Data	sf; tigris; mapgl; osm
13	Grab Bag: Statistics, Text, & Working with AI	Loops, t.test(), lm(), glm()
14	Project Presentations	
F	Finals Week (Project Due)	

Advanced Topics (*If we get to them*)

Week	Topic	Tools
	Text Data & Data Scraping	

Week	Topic	Tools
	Statistical Models	
	Missing Data	
	Web Apps & Visualization	quarto, shiny
	Programming with AI	Claude Code
	Local LLMs	

Logistical Notes

All content may be found linked from the course content pages. Readings and content are posted for the whole semester, so students may look ahead if they wish. Typically, each week has two class days: the first, a lecture, and the second, a workshop. Each workshop day typically has some computing tasks, reference reading or other material, and a data assignment.

What to expect

Each week of class is organized into a learning module. Each learning module covers a topic relevant to data wrangling, management, and visualization, and goes in three phases: lecture, workshop, and assignment.

1. **Lectures:** Each module's material is first presented through lectures given Tuesday. Occasionally, there will be an at-home workshop to complete as well. You should start every week with these. Each week has companion readings and reference materials for those wishing to dive deeper.
2. **Workshops:** Each module's material is then reinforced through a workshop in our Thursday class session.
3. **Assignment:** Each module concludes with an applied assignment (typically, a problem set, but occasionally something else - a practicum or project). The module's assignment is due the week after the module in class, and we will go over solutions together the day it is due.

Workshops (Live Class Sessions)

During workshop sessions, we cover material in the following order:

1. Go over solutions and material for the assignment due that week. Sometimes, this will primarily involve the professor covering solutions, but other times, it will involve students presenting their work on that week, as well. Be prepared to ask questions and talk about your assignments.¹
2. Conduct hands-on coding sessions for material in the current week's module.

¹Note that means the cadence will feel odd at first: the assignment given during Thursday workshop week 1 is due during Thursday workshop week 2, and thus, we'll go over the assignment given during week 1 during week 2 but *after* we've already had the week 2 lecture, etc. It's done this way to make sure you always have a full week to work on the assignment.

3. Allow for time to begin the assignment for the current week's module, ask the professor questions, etc.

Where to find materials and how to navigate the course

Each learning module can be accessed here, on the class website. We'll use Blackboard for initial assignment submission before transferring to GitHub a few assignments in. All course materials may be found here, with the exception of some that contain proprietary or copyrighted material that must be kept behind a login.