

Course Information

Course Number: URSC 645
Course Title: Urban and Regional Analytics
Time: Tuesday & Thursday 2:20 – 3:35
Location: Langford Building A (ARCA) Room 302
Credit Hours: 3

Instructor Details

Instructor: Nathanael P. Rosenheim
Office: Scoates 117
Phone: 979-969-2125 (call or text)
E-Mail: nrosenheim@arch.tamu.edu
Office Hours: 10:30-12:30, Tuesday. Or by appointment (virtual or in-person)

Course Description

Urban and regional administrative data management; data analysis; programming for replicable, systematic research; project workflow to support project collaboration.

Course Prerequisites

Graduate student classification or approval of instructor.

Course Learning Outcomes

- Demonstrate that they understand basic applications for code and scripts.
- Adopt a scalable workflow for individual and team-based projects.
- Identify replicable research in sociology or urban and regional science journals.
- Use appropriate software to obtain, scrub, explore, visualize, interpret and publish data.

Textbook and/or Resource Materials

All course materials will be made available in the shared course Google Drive.
Additional material on the course GitHub webpage: <https://github.com/npr99/URSC645>

Grading Policy

- Final course grades will be awarded on a 100 percent scale.
- A=89.5-100 B=79.5-89.49 C=69.5-79.49 D=60-69.49 F=<60
- Grades will be awarded on the basis of the following percentages:
 - Active use of work logs = 10%
 - Code Foundations = 10%
 - 2 Annotated Bibliography Contributions = 10% (5% each)

- Assignment 1: = 10%
- Assignment 2 = 15%
- Assignment 3 = 10%
- Replication Challenge = 10%
- Final assignment = 25%
- The primary means of submitting work is through Work Logs included in task or assignment folders.

Late Work Policy

The faculty member will accept late work. The associated penalty is a 10% penalty per 24-hour period beyond the deadline. The late work is defined as submitting a deliverable after the established deadline. Work submitted by a student as makeup work for an excused absence is not considered late work and is exempted from the late work policy ([Student Rule 7](#)).

Course Schedule

Week	Topic	Required Reading
1 – Jan 16	Course Introduction	
2 – Jan 23	Introduction to workflow and reproducible research	Long 2009 Ch 1-2; Munafò et al, 2017; Lowndes et al 2017; Freese 2007; Gentzkow and Shapiro 2014 Ch 1-2
Jan 30	Code Foundations Due by 9am	
3 – Jan 30	Code Foundations Coding basics: Reading in data	Gentzkow and Shapiro 2014 Ch 3-5
4 – Feb 6	Challenges to Collaboration and Reproducible Research, Motivating Example	Gentzkow and Shapiro 2014 Ch 6-Appendix,
Feb 6	Annotated Bibliography Contributions Due by 9am	Readings (which includes replicable code) available on course GitHub https://github.com/npr99/URSC645
5 – Feb 13	Coding basics: Variables and equations	
6 – Feb 20	Coding basics: Loops and functions	
7 – Feb 27	Obtain Data	
Feb 27	Assignment 1 Due by 9am	
8 – Mar 5	Review of replicable research in sociology or urban and regional science journals	
Mar 12	Spring Break	
9 – Mar 19	Scrub Data	
Mar 19	Assignment 2 Due by 9am	
10 – Mar 26	Explore Data	
11 – Apr 2	Explore & Visualize Data	
Apr 2	Assignment 3 Due by 9am	
12 – Apr 9	Explore & Visualize Data	
13 – Apr 16	Explore & Visualize Data	
14 – Apr 23	Publish Final Projects within class	
15 – Apr 30	Replication challenge	
Apr 30	Replication Challenge Due by 9am	
May 7	Final Assignment Due	

University Policies

Attendance Policy

The university views class attendance and participation as an individual student responsibility. Students are expected to attend class and to complete all assignments.

Please refer to [Student Rule 7](#) in its entirety for information about excused absences, including definitions, and related documentation and timelines.

Makeup Work Policy

Students will be excused from attending class on the day of a graded activity or when attendance contributes to a student's grade, for the reasons stated in Student Rule 7, or other reason deemed appropriate by the instructor.

Please refer to [Student Rule 7](#) in its entirety for information about makeup work, including definitions, and related documentation and timelines.

Absences related to Title IX of the Education Amendments of 1972 may necessitate a period of more than 30 days for make-up work, and the timeframe for make-up work should be agreed upon by the student and instructor" ([Student Rule 7, Section 7.4.1](#)).

"The instructor is under no obligation to provide an opportunity for the student to make up work missed because of an unexcused absence" ([Student Rule 7, Section 7.4.2](#)).

Students who request an excused absence are expected to uphold the Aggie Honor Code and Student Conduct Code. (See [Student Rule 24](#).)

Academic Integrity Statement and Policy

"An Aggie does not lie, cheat or steal, or tolerate those who do."

"Texas A&M University students are responsible for authenticating all work submitted to an instructor. If asked, students must be able to produce proof that the item submitted is indeed the work of that student. Students must keep appropriate records at all times. The inability to authenticate one's work, should the instructor request it, may be sufficient grounds to initiate an academic misconduct case" ([Section 20.1.2.3, Student Rule 20](#)).

Texas A&M at College Station

You can learn more about the Aggie Honor System Office Rules and Procedures, academic integrity, and your rights and responsibilities at aggiehonor.tamu.edu.

Americans with Disabilities Act (ADA) Policy

Texas A&M University is committed to providing equitable access to learning opportunities for all students. If you experience barriers to your education due to a disability or think you may have a disability, please contact the Disability Resources office on your campus (resources listed below). Disabilities may include, but are not limited to attentional, learning, mental health, sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability related needs with Disability Resources and their instructors as soon as possible.

Texas A&M at College Station

Disability Resources is located in the Student Services Building or at (979) 845-1637 or visit disability.tamu.edu.

Title IX and Statement on Limits to Confidentiality

Texas A&M University is committed to fostering a learning environment that is safe and productive for all. University policies and federal and state laws prohibit gender-based discrimination and sexual harassment, including sexual assault, sexual exploitation, domestic violence, dating violence, and stalking.

With the exception of some medical and mental health providers, all university employees (including full and part-time faculty, staff, paid graduate assistants, student workers, etc.) are Mandatory Reporters and must report to the Title IX Office if the employee experiences, observes, or becomes aware of an incident that meets the following conditions (see [University Rule 08.01.01.M1](#)):

- The incident is reasonably believed to be discrimination or harassment.
- The incident is alleged to have been committed by or against a person who, at the time of the incident, was (1) a student enrolled at the University or (2) an employee of the University.

Mandatory Reporters must file a report regardless of how the information comes to their attention – including but not limited to face-to-face conversations, a written class assignment or paper, class discussion, email, text, or social media post. Although Mandatory Reporters must file a report, in most instances, a person who is subjected to the alleged conduct will be able to control how the report is handled, including whether or not to pursue a formal investigation. The University's goal is to make sure you are aware of the range of options available to you and to ensure access to the resources you need.

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Students wishing to discuss concerns in a confidential setting are encouraged to make an appointment with [Counseling and Psychological Services](#) (CAPS).

Students can learn more about filing a report, accessing supportive resources, and navigating the Title IX investigation and resolution process on the University's [Title IX webpage](#).

Statement on Mental Health and Wellness

Texas A&M University recognizes that mental health and wellness are critical factors that influence a student's academic success and overall wellbeing. Students are encouraged to engage in healthy self-care by utilizing available resources and services on your campus

Students who need someone to talk to can contact Counseling & Psychological Services (CAPS) or call the TAMU Helpline (979-845-2700) from 4:00 p.m. to 8:00 a.m. weekdays and 24 hours on weekends. 24-hour emergency help is also available through the National Suicide Prevention Hotline at (800-273-8255) or at suicidepreventionlifeline.org (now accessible at 988 or at [988 Suicide and Crisis Lifeline](#)).

College and Department Policies

Please remove any of these sections if not needed.

Use of Generative AI

With the emergence of artificial intelligence (AI) technologies, the ways in which we define our creative processes continue to transform. AI generators are rapidly evolving from simple editing for grammatical errors and spelling mistakes (Grammarly, MS Word Spell Check) to sophisticated text production (ChatGPT, Google Bard, etc.), as well as image, computer code, and audio generation. The presence of such tools, however, does not replace our need to learn how to draft, revise, and reflect on texts, programs, drawings and how to exercise information literacy and personal responsibility in how we locate, evaluate, incorporate, and cite primary/ secondary sources. For example, the Association for Writing Across the Curriculum states the following:

Writing to learn is an intellectual activity that is crucial to the cognitive and social development of learners and writers. This vital activity cannot be replaced by AI language generators (AWAC).

Engaging in the various aspects of creative pursuits (e.g., writing, coding, drawing) is critical to education in a broad sense. While AI technologies will continue shaping how we approach these creative tasks, the critical work of creativity relies on integrity, originality, and ethical conduct in regard to appropriate representation as an author or creator. Thus, submitting work with a significant percentage of AI-generated content, unless otherwise permitted, can be considered academic misconduct under Texas A&M University Student Rule 20. Students must therefore cite the use of generative AI tools and document what they have contributed to an assignment.

Statement of Inclusion

Texas A&M University is committed to enriching the learning and working environment for all visitors, students, faculty, and staff by promoting a culture that embraces inclusion, diversity, equity, and accountability. Diverse perspectives, talents, and identities are vital to accomplishing our mission and living our core values