Social Statistics Syllabus

SOCI 210 – Spring 2026

> *Statistical thinking will one day be as necessary for efficient citizenships as the ability to read and write.*
>
> - Samuel S. Wilks (1951) paraphrasing from HG Wells' book, *Mankind in the Making*

Professor: Dr. Erick Axxe (he/they)
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Office: Mills 220
Office phone: 501.450.1445
Class time: MWF 8:10-9AM
Class location: Snoddy Lab (Bailey Library)

Student hours: I will be available to meet on Mondays, Tuesdays, and Fridays from 2:30-4 pm (except when classes are not in session). I encourage you to make use of these times, as I am happy to talk through course material, assignments, or broader academic questions. Students with appointments will be prioritized, but you are always welcome to stop by. If these times do not work with your schedule, please feel free to email me to arrange an alternative meeting time. I am here to support your learning and success in this course.

Course Description

This course introduces the core principles of statistical reasoning and inference as they are used to study social phenomena. You will learn how data are produced, summarized, analyzed, and interpreted in order to answer substantive questions about social life. Emphasis is placed not only on statistical techniques, but also on the assumptions, limitations, and interpretive choices that shape quantitative claims.

The course combines conceptual foundations with hands-on data analysis. You will develop basic programming skills to work with real social science data, beginning with exploratory data analysis and progressing to probability and statistical inference. Topics include sampling and study design, distributions, correlation, hypothesis testing, and modeling relationships between variables. Applications are drawn from a range of social science contexts, including inequality, politics, education, and public policy.

No prior experience with statistics or programming is expected. Assignments are structured to build skills incrementally through short, focused exercises and applied projects. By the end of the course, you will be equipped to critically evaluate quantitative evidence and to use statistical tools thoughtfully in academic, professional, and civic settings that rely on social scientific data.

This course meets in person three times a week (see above for specific details). Throughout the semester, students are expected to submit checkpoints, labs, and exams, to

actively participate during class sessions, to attend two check-ins, and to hold two presentations. Course materials will be available via Microsoft Teams; the materials will be organized within the "Classwork" channel within Teams. This course was adapted from Mark Goadrich's Introductory Statistics (MATH 215) course.

Learning Outcomes

By the end of this course, students will:

- summarize data using exploratory data analysis techniques
- identify and describe sampling methods used to produce data
- explain how samples differ from populations using basic probability concepts
- create, visualize, and analyze distributions of variables
- use sample data to draw conclusions about the population from which the data were drawn
- recognize the diverse applications of statistics and explain its relevance to everyday life and your field(s) of study

Required Materials and/or Technologies

- *Statistical Reasoning*. Open Learning Initiative. Carnegie Mellon University.
    - You will need to purchase ($25) access to this text using the "Course Key" **SOCI210**
    - For most classes, there will be assigned readings from the textbook. It is expected that you will have read through the material before our class times and worked through the in-text exercises to check your understanding along the way.
- You will also need to make a free account on the Kaggle website. This is where you be working through examples and exercises, creating your Lab notebooks, and writing your final Project.
- For our statistical software, we will be using R for this course, but we will not follow the R instructions in the textbook. Instead, we will use the tidyverse version of R, which is specifically designed for easy analysis and plotting. This is for your information; you **don't** need to download or purchase anything.
- Microsoft Teams

Optional resources:

- Introduction to Modern Statistics
- OpenStax Introductory Statistics
- Learning Statistics with R

Coursework

[*Adapted from Spencer Bagley and David Clark, via Robert Talbert*]

SOCI 210 uses a **real-world policy** on due dates—but this may not mean what you think! In the *real* real world, due dates exist but they are often not ironclad. Assignments have due dates to help you make progress in the course and solidify your knowledge before moving on to something new. Your life and schedule may not perfectly coincide with the due dates I have chosen. If you need more time to get the job done well, you email whoever set the deadline to ask if you can have more time. Studies have shown that deadline extension requests—in moderation and when truly needed—often lead to *better* employee evaluations (not to mention better work). [*See Go Ahead and Ask for More Time on that Deadline by Ashley Williams*.]

If you need an extension on a due date, email me and explain what you need, and it will probably be fine. It helps if you propose a concrete new deadline (*e.g.* "I can get it done by 5pm on Wednesday"). If you ask for lots of extensions, we'll work together to find a way to help you keep up. Note, however, that late submissions may not receive feedback as quickly as on-time submissions.

If you have significant extenuating circumstances that cause you to miss multiple deadlines, please come to office hours to discuss broader accommodations. I'm happy to be flexible, but it helps to know what you need so I can figure out the best way to help.

Important: You must be in communication with me anytime an assignment is late (excluding checkpoints).

If you would like to improve an assignment after it has been graded and improve your grade, you may revise and resubmit the assignment until you do. This must be **within two weeks of receiving feedback**. If you need more than two weeks, *you must schedule a meeting with me to discuss your reasons for the delay*.

However, the above only applies if you **made a reasonable attempt at the assignment the first time**. You cannot turn in a half-finished assignment before the deadline and then "revise" it by completing the rest. If your assignment is only half-finished, you must request to use late days as described above.

Important: All work and revisions must be completed by May 1st at 5pm.

Checkpoints

In each section, there will be Checkpoint exercises that you need to complete. These will typically be due **the days the associated readings are assigned**. You may repeat the checkpoints to improve your score, and the **best score** will be recorded. I will be able to see your progress on these checkpoints and other exercises in the text.

These quizzes are designed to encourage you to study the course material throughout the semester rather than waiting until the midterm exams.

A **partially complete** checkpoint will earn at least 60% of the points available.
A **complete** checkpoint will earn at least 80% of the points available.

Labs

Much of your experience with statistics in this course will be through weekly labs. Each lab will be assigned with time allotted to work through the materials in class and will typically be due **on Saturdays at 5pm**.

As you work to answer the questions in the labs, you will need to be recording your answers in a Kaggle notebook. Use the Markdown sections to write up your thoughts and answers to the prompts and use Code sections to write R code and generate your answers. To submit your labs, you will download your notebook (it will be a *.ipynb file) and hand it in through Teams. Further assignment instructions (due dates, relevant links, etc.) can be found on Teams.

You may work with a partner on the lab assignments. **Their name must be listed on any code you hand in as joint work**. A partnership should only turn in a **single copy** of the assignment.

A **partially complete** lab will include

- correct code to answer each question
- minimal written answers to the lab prompts
- minimal data visualizations

A **complete** lab will include

- a clear narrative constructed from your written answers to the lab prompts
- correct code to answer each question
- richly labeled and titled data visualizations for each question
- full explanations of each step of your code and reasoning
- a reflection on your experience working through the lab.

Project

You will have a final project in this course, where you analyze a dataset with statistics, write a paper summarizing your conclusions about the data, and give a short presentation during the last week of classes. This will be similar to the labs but will use a data set and research questions of your choice.

You must work individually on this project. You may discuss concepts and ideas with your classmates, but the work you turn in must be your own. More details on the final project will be provided in the middle of the semester. You can find assignment deadlines on Teams.

Exams

There will be two in-class exams. They will consist of short answer questions along with writing and debugging code. The checkpoints and labs are great practice for the exams. There will be a review day the class session before each exam. After each exam, there will be an opportunity to review and revise your responses. **There is no final exam.**

Check-ins

Twice during the semester, you are expected to make an office hours appointment for conversation and feedback on your progress in the course.

Stats In The World

Each of you will choose one class throughout the term to find statistics used in a piece of popular press about a current event. You will prepare a brief **presentation** (4 minutes) of the current event you chose and describe the statistics used in it. You may work in pairs for this assignment (7 minutes total).

To begin the assignment, send me an email (axxe@hendrix.edu) containing:

- your names (if working as a pair),
- your topic, and
- a link to the article you will use.

I will then assign you a presentation date.

A complete presentation will address how an understanding of statistics:

- made the information more valuable
- allowed you to consider it critically.

This assignment can be completed anytime between February 9th and April 24th.

Attendance

Attending class and being an active participant in the class community is one of the most important contributors to your learning at Hendrix. Attendance is especially important in this class since you will often engage in group learning activities. Active participation is expected in order to achieve higher grade levels in the course.

If you must miss class, **you should email Dr. Axxe before class** whenever possible. Absences without prior notification are considered unexcused, except in the case of genuine emergencies. Absences related to religious observances, illness, mental or physical health needs, athletic competition, or other institutionally recognized activities (e.g., conference travel or Model UN) are excused. You do not need to provide third-party documentation for absences related to illness. Providing inaccurate or misleading information about an absence is a violation of the Academic Integrity Policy.

When you are absent, you are responsible for reviewing missed materials and staying current with the course. In-class assignments may be made up for excused absences but not for unexcused absences. Because repeated absences (regardless of reason) can interfere with meeting course learning goals, I may reach out to you and your advisor if attendance becomes a concern. You may also be asked to complete additional work to demonstrate progress toward course objectives. If attendance does not improve and learning goals are not being met, the Office of Academic Success will be notified.

In accordance with Hendrix policy, after following this procedure I may, at my professional discretion, remove you from the course if unexcused absences over any three-week period reach or exceed 50%. In such cases, the Registrar will notify you via your Hendrix email prior to the withdrawal deadline. You may appeal this decision by contacting the Registrar within three business days of the notification; appeals are reviewed by the Academic Appeals Committee.

Specifications Grading

Grades in this course will follow a specifications grading model, with assignments assessed as either incomplete, partially complete, or complete. Your final grade will be determined by the **bundle** of assignments you successfully complete. Students must meet all criteria within a bundle to earn that grade.

A Level Work

- Complete 8 Labs + 1 Partially Complete
- Complete 18 Checkpoints + 2 Partially Complete
- Complete 2 Exams
- Complete Final Project
- Complete 2 Check-ins
- Complete 1 Stats In The World Talk
- Abundant Participation in Classroom Activities

B Level Work

- Complete 7 Labs + 2 Partially Complete
- Complete 16 Checkpoints + 3 Partially Complete
- Complete 2 Exams
- Complete Final Project
- Complete 2 Check-ins
- Complete 1 Stats In The World Talk
- Active Participation in Classroom Activities

C Level Work

- Complete 6 Labs + 2 Partially Complete
- Complete 14 Checkpoints + 4 Partially Complete
- Complete 1 Exam + 1 Partially Complete
- Partially Complete Final Project
- Complete 1 Check-in
- Participation in Classroom Activities

D Level Work

- Complete 5 Labs
- Complete 12 Checkpoints
- Partially Complete 2 Exams
- Partially Complete Final Project
- Complete 1 Check-in

Instructor Feedback and Response Time:

- **Preferred contact method:** For general course concerns, please tag me in a comment on our course's **discussion board Q & A on Teams**. If your question is specific to you, please email me (axxe@hendrix.edu). I will reply to emails within 48 hours on days when class is in session.
- **Class announcements:** I will send all important class-wide messages through the General tab on Teams.
- **Grading and feedback:** For assignments submitted before the due date, you can expect feedback and grades within **seven days**. Assignments submitted after the due date may have reduced feedback, and grades may take longer to be posted.

Hendrix Resources

Academic integrity: Our academic integrity policy may be found in the 2025-26 Catalog in section D.6.c.Academic Integrity. Assignments must reflect your original work. Properly cite any sources used.

Statement on diversity: Hendrix College values a diverse learning environment as outlined in the College's Statement on Diversity. All members of this community are expected to contribute to a respectful, welcoming, and inclusive environment for every other member of the community. If you believe you have been the subject of discrimination, please contact the Dean of Students Office or submit a Title IX report. If you have ideas for improving the inclusivity of the classroom experience, please feel free to contact Dr. Axxe. For more information on Hendrix non-discrimination policies visit Hendrix.edu/nondiscrimination.

Title IX Reports of Discrimination Based on Sex, including Sexual Harassment, Sexual Assault, Stalking, Dating Violence, or Gender-Based Harassment. (Follow link to see details.)

Health and wellbeing: Hendrix recognizes that many students face mental and/or physical health challenges. If your health status will impact attendance or assignments, please communicate with me as soon as possible. If you would like to implement academic accommodations, contact the office of Academic Success (AcademicSuccess @hendrix.edu). To maintain optimal health, please utilize campus resources like Hendrix Medical Clinic or Counseling Services (501.450.1448). Student Health Services provides free healthcare to Hendrix students. Services are provided by an Advanced Practice Registered Nurse (APRN) in collaboration with a local physician. Hendrix Student Health Services is now located in Conway Regional's Hendrix Medical Clinic at 1700 Altus in The Village at Hendrix Your health and wellbeing are important.

ADA accommodations: As your instructor, it is my legal obligation to ensure that all students have equal access to course materials and equal opportunity to perform well in the course. In addition, "It is the policy of Hendrix College to accommodate students with disabilities, pursuant to federal and state law. Students should contact the Office of Advising & Academic Success (AcademicSuccess@hendrix.edu) to begin the accommodation process. Any student seeking accommodation in relation to a recognized disability should inform the instructor at the beginning of the course."

Technology: Much of the technology we interact with is made to be addictive. I suggest you find and use resources that will help you resist distractions. Here's a website with a list of website blockers. Similar software exists for apps on phones and tablets.

Additional Resources

Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to contact the Dean of Students for support. Furthermore, please notify me if you are comfortable in doing so. This will enable me to provide any resources that I may possess.

- **Food Pantries:** Here's a list of local food pantries.
- **Zotero:** Zotero is a free citation management software.
- **Grammarly:** Grammarly is a free software that checks and suggests fixes to grammatical errors.