STA 323 Syllabus

Fall 2025

Teaching team & office hours

	Contact	Office Hours	Location
Dr. Alexander Fisher	aaf29@duke.edu	Mo/Th: 2-3pm	Old Chem 223B
Devarpita Bag	devarpita.bag@duke.edu	We: 1-3pm	TBD
Tully Cannon	tully.cannon@duke.edu	TBD	TBD
Lisa Zhang	lisa.p.zhang@duke.edu	We 11am-1pm	Old Chem 203A
Sara Fernandez	sara.fernandez@duke.edu	Tu/Th 1-2pm	Old Chem 203B

Lecture and lab

Lecture	Tu/Th 8:30 - 9:45am	Old Chemistry 116
Lab 01	Tu 3:05pm - 4:20pm	Perkins LINK 087 (Classroom 3)
Lab 02	Tu 4:40pm - 5:55pm	Old Chemistry 101

Course website: sta323-fa25.github.io

Course material

There are no required textbooks for this course, the following textbooks are recommended for supplementary and reference purposes.

- Advanced R (2nd ed.) - Wickham - Chapman and Hall/CRC, 2019 (978-0815384571)
- R for Data Science - Grolemund, Wickham - O'Reilly, 2016 (978-1491910399)

We will use the statistical software package R both in-class, and on take-home assignments in this course. R is freely available at http://www.r-project.org/. RStudio, the popular IDE for R, is freely available at https://posit.co/downloads/. Additionally, students may access R and RStudio through Docker containers provided by Duke Office of Information Technology. Containers can be accessed at https://cmgr.oit.duke.edu/containers.

Course objectives

By the end of this course you will be able to

1. write efficient R code to (1) wrangle, explore and analyze data, (2) make inference under a variety of data generative models
2. conduct independent data analysis and subsequently write and present results effectively

Grading policy

Assignment	Description
Labs (30%)	Biweekly lab assignments.
Exams (50%)	Two hybrid (both an in-class and take-home component) exams.
Final Project (15%)	Written report and presentation.
Quizzes (5%)	In-class pop quizzes.

A $>= 93$, A- < 93, B+ < 90, B < 87, B- < 83, C+ < 80, C < 77, C- < 73, D+ < 70, D < 67, D- < 63, F < 60

Labs

In labs, you will apply the concepts discussed in lecture. Labs will focus on both computation and conceptualization. Lab assignments will be completed using quarto and submitted by pushing your best version to GitHub by the deadline. While you may collaborate with others on lab assignments, your final solution must be your own.

Exams

There will be two hybrid exams. There will be an in-class and take-home component to each. Through these exams you have the opportunity to demonstrate what you've learned in the course thus far. Each exam will include small analyses and computational tasks related to the content in labs. More details about the content and structure of the exams will be discussed during the semester.

Final project

The final project allows you to explore a question and data set of your own choosing. More details about the project will be provided during the semester. Projects will be completed in teams.

Quizzes

On pseudo-random class days, there will be a brief quiz on the previous lectures. If you score $> 60\%$ on quizzes, you will receive full participation credit. Your lowest **two** quizzes will also be dropped.

Where to find help

Office hours

Many questions are most effectively answered in-person, so office hours are a valuable resource. Please make use of them. A list of instructor and TA office hours can be found on the course website.

Policies

Academic integrity

You should be familiar with Duke's community standard: https://studentaffairs.duke.edu/conduct/about-us/duke-community-standard

By enrolling in this course, you commit to upholding Duke's community standard reproduced as follows:

- I will not lie, cheat, or steal in my academic endeavors;
- I will conduct myself honorably in all my endeavors; and
- I will act if the Standard is compromised.

Any violations in academic integrity standards as outlined in the Duke Community Standard and those specific to this course will **automatically result in a 0** for the assignment and will be reported to the Office of Student Conduct for further action.

Please abide by the following as you work on assignments in this course:

- You may discuss lab assignments with other students; however, you may not directly share (or copy) code or write up with other students. For team assignments, you may collaborate freely within your team. You may discuss the assignment with other teams; however, you may not directly share (or copy) code or write up with another team. Unauthorized sharing (or copying) of the code or write up will be considered a violation for all students involved.
- You may not discuss or otherwise work with others on the exams. Unauthorized collaboration or using unauthorized materials will be considered a violation for all students involved. More details will be given closer to the exam date.
- Outside resources and generative AI statement: The use of online resources (including generative AI, as well as static webpages like Stack-Overflow, etc.) is strictly prohibited on in-class exercises. For take home assignments, you may make use of online resources for coding portions on assignments. If you directly use code from a source (or use it as inspiration), you must explicitly cite where you obtained the code. If you used generative AI to create the code, you should include your prompt(s) in your citation as well. Any code that is discovered to be recycled or created by AI and is not explicitly cited will be treated as plagiarism.

> ⚠ Warning
>
> Extensive use of AI on take-home assessments will likely set you up for poor performance on graded in-class assignments.

Team work policy

The final project and several labs will be completed in teams. All group members are expected to participate equally. Commit history may be used to give individual team members different grades. Your grade may differ from the rest of your group.

Errors in grading

Errors in grading must be brought to the attention of the TA or instructor during office hours within 1 week of receiving the grade.

Late work

Late work may be submitted with 48 hours of the assignment deadline. Late work submitted within 24 hours (even 1 minute late) will receive a 5% late penalty. Late work submitted between 24 to 48 hours of the deadline will receive a 10% late penalty. Work submitted after

48 hours will not be accepted. Exams cannot be turned in late and can only be excused under exceptional circumstances. The Duke policy for illness requires a short-term illness report or a letter from the Dean; except in emergencies, all other absenteeism must be approved in advance (e.g., an athlete who must miss class may be excused by prior arrangement for specific days). For emergencies, email notification is needed at the first reasonable time.

Accessibility

If there is any portion of the course that is not accessible to you due to challenges with technology or the course format, please let me know so we can make appropriate accommodations. The Student Disability Access Office (SDAO) is available to ensure that students are able to engage with their courses and related assignments. Students should be in touch with the Student Disability Access Office to request or update accommodations under these circumstances. Please note that accommodations are not retroactive and disability accommodations cannot be provided until a Faculty Accommodation Letter has been given to me. Please contact SDAO for more information: sdao@duke.edu or access.duke.edu.

Additional resources

Student mental health and wellness are of primary importance at Duke, and the university offers resources to support students in managing daily stress and self-care. Duke offers several resources for students to seek assistance on coursework and to nurture daily habits that support overall well-being, some of which are listed below

- The Academic Resource Center: (919) 684-5917, theARC@duke.edu, or arc.duke.edu. The Academic Resource Center (the ARC) offers services to support students academically during their undergraduate careers at Duke. The ARC can provide support with time management, academic skills and strategies, course-specific tutoring, and more. ARC services are available free to any Duke undergraduate student, studying any discipline.
- DuWell: (919) 681-8421, provides Moments of Mindfulness (stress management and resilience building) and meditation programming (Koru workshop) to assist students in developing a daily emotional well-being practice. To see schedules for programs please see https://studentaffairs.duke.edu/duwell. All are welcome and no experience necessary.

If your mental health concerns and/or stressful events negatively affect your daily emotional state, academic performance, or ability to participate in your daily activities, many resources are available to help you through difficult times. Duke encourages all students to access these resources.

- DukeReach. Provides comprehensive outreach services to identify and support students in managing all aspects of well-being. If you have concerns about a student's behavior or health visit the website for resources and assistance: https://students.duke.edu/wellness/dukereach/
- Counseling and Psychological Services (CAPS). CAPS services include individual and group counseling services, psychiatric services, and workshops. To initiate services, walk-in/call-in 9-4 M,W,Th,F and 9-6 Tuesdays. CAPS also provides referral to off-campus resources for specialized care.

  (919) 660-1000 or https://students.duke.edu/wellness/caps/
- TimelyCare (formerly known as Blue Devils Care). An online platform that is a convenient, confidential, and free way for Duke students to receive 24/7 mental health support through TalkNow and scheduled counseling. bluedevilscare.duke.edu