Syllabus

Office hours

Click here for the instructor and TA office hours locations and Zoom links. You are welcomed to attend the office hours for **any** STA 199 TA, regardless of section.

Textbooks

All books are **freely available online**.

R for Data Science, 2e	Grolemund, Wickham	O'Reilly, 2nd edition, 2022	Hard copy only available of 1st edition
Introduction to Modern Statistics	Çetinkaya-Rundel, Hardin	OpenIntro Inc., 1st Edition, 2021	Hard copy available on Amazon

Course learning objectives

By the end of the semester, you will...

- learn to explore, visualize, and analyze data in a reproducible and shareable manner
- gain experience in data wrangling and munging, exploratory data analysis, predictive modeling, and data visualization
- work on problems and case studies inspired by and based on real-world questions and data
- learn to effectively communicate results through written assignments and project presentation

Course community

Duke Community Standard

As a student in this course, you have agreed to uphold the Duke Community Standard as well as the practices specific to this course.

Inclusive community

It is my intent that students from all diverse backgrounds and perspectives be well-served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that the students bring to this class be viewed as a resource, strength, and benefit. It is my intent to present materials and activities that are respectful of diversity and in alignment with Duke's Commitment to Diversity and Inclusion. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally, or for other students or student groups.

Furthermore, I would like to create a learning environment for my students that supports a diversity of thoughts, perspectives and experiences, and honors your identities. To help accomplish this:

- If you feel like your performance in the class is being impacted by your experiences outside of class, please don't hesitate to come and talk with me. If you prefer to speak with someone outside of the course, your academic dean is an excellent resource.
- I (like many people) am still in the process of learning about diverse perspectives and identities. If something was said in class (by anyone) that made you feel uncomfortable, please let me or a member of the teaching team know.

Pronouns

Pronouns are meaningful tools to communicate identities and experiences, and using pronouns supports a campus environment where all community members can thrive. Please update your gender pronouns in Duke Hub. You can learn more at the Center for Sexual and Gender Diversity's website.

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.

Communication

All lecture notes, assignment instructions, an up-to-date schedule, and other course materials may be found on the course website: sta199-f22-1.github.io.

Announcements will be emailed through Sakai Announcements periodically. Please check your email regularly to ensure you have the latest announcements for the course.

Where to get help

- If you have a question during lecture or lab, feel free to ask it! There are likely other students with the same question, so by asking you will create a learning opportunity for everyone.
- The teaching team is here to help you be successful in the course. You are encouraged to attend office hours to ask questions about the course content and assignments. Many questions are most effectively answered as you discuss them with others, so office hours are a valuable resource. Please use them!
- Outside of class and office hours, any general questions about course content or assignments should be posted on the course Slack. There is a chance another student has already asked a similar question, so please check the other posts on Slack before adding a new question. If you know the answer to a question posted on Slack, I encourage you to respond!

Check out the Help tab for more resources.

Email

If there is a question that's not appropriate for the public forum, you are welcome to email me directly. **If you email me, please include "STA 199" in the subject line.** Barring extenuating circumstances, I will respond to STA 199 emails within 48 hours Monday - Friday. Response time may be slower for emails sent Friday evening - Sunday.

Activities & Assessment

The activities and assessments in this course are designed to help you successfully achieve the course learning objectives. They are designed to follow the **Prepare, Practice, Perform** format.

- **Prepare**: Includes short videos, reading assignments, and lectures to introduce new concepts and ensure a basic comprehension of the material. The goal is to help you prepare for the in-class activities during lecture.
- **Practice**: Includes in-class application exercises where you will begin to the concepts and methods introduced in the prepare assignment. the activities will graded for completion, as they are designed for you to gain experience with the statistical and computing techniques before working on graded assignments.
- **Perform**: Includes labs, homework, exams, and the project. These assignments build upon the prepare and practice assignments and are the opportunity for you to demonstrate your understanding of the course material and how it is applied to analyze real-world data.

Lectures (Prepare)

Part of the class time will be lectures that introduce new concepts or review topics from the preparation videos. Lectures will **not** repeat everything in the videos, they will instead highlight important and known to be complex concepts and will be supplemented with live coding activities. You are expected to attend every lecture. Lectures will be recorded and made available to students with an excused absence upon request.

Application exercises (Practice)

A majority of the in-class lectures will be dedicated to working on Application Exercises (AEs). These exercises which give you an opportunity to practice apply the statistical concepts and code introduced in the prepare assignment. These AEs are due within three days of the corresponding lecture period. Specifically, AEs from Tuesday lectures are due Friday by 11:59p ET, and AEs from Thursday lectures are due Sunday by 11:59p ET.

Because these AEs are for practice, they will be graded based on completion, i.e., a good-faith effort has been made in attempting all parts. Successful on-time completion of at least 80% of AEs will result in full credit for AEs in the final course grade.

In addition to AEs will be periodic activities help build a learning community. These will be short, fun activities that will help everyone in the class connect throughout the semester.

Labs (Perform)

In labs, you will apply the concepts discussed in lecture to various data analysis scenarios, with a focus on the computation. Most lab assignments will be completed in teams, and all team members are expected to contribute equally to the completion of each assignment. You are expected to use the team's Git repository on the course's GitHub page as the central platform for collaboration. Commits to this repository will be used as a metric of each team member's relative contribution for each lab, and there will be periodic peer evaluation on the team collaboration. Lab assignments will be completed using Quarto, correspond to an appropriate GitHub repository, and submitted for grading in Gradescope.

The lowest lab grade will be dropped at the end of the semester.

Homework (Perform)

In homework, you will apply what you've learned during lecture and lab to complete data analysis tasks. You may discuss homework assignments with other students; however, homework should be completed and submitted individually. Similar to lab assignments, homework must be typed up using Quarto and GitHub and submitted as a PDF in Gradescope.

One homework assignment will be dedicated to a *statistics experience*. The statistics experience is an opportunity to engage with statistics and data science outside of the classroom through podcasts, books, seminars, data analysis competitions, and other activities. As you complete these experiences, the goal is to consider how the material you're learning in the course connects with society more broadly.

The lowest homework grade will be dropped at the end of the semester.

Exams (Perform)

There will be two, take-home, open-note exams. Through these exams you have the opportunity to demonstrate what you've learned in the course thus far. Each exam will include small analysis and computational tasks related to the content in the prepare, practice, and perform assignments. More details about the content and structure of the exams will be discussed during the semester.

Project (Perform)

The purpose of the project is to apply what you've learned throughout the semester to analyze an interesting data-driven research question. The project will be completed with your lab teams, and each team will present their work in video and in writing during the final exam period. More information about the project will be provided during the semester.

Grading

The final course grade will be calculated as follows:

Category	Percentage
Homework	30% (5% x 6)
Labs	16% (2% x 8)
Project	15%
Exam 01	17%
Exam 02	17%
Application Exercises	2.5%
Teamwork	2.5%

The final letter grade will be determined based on the following thresholds:

Letter Grade	Final Course Grade
A	>= 93
A-	90 - 92.99
B+	87 - 89.99
B	83 - 86.99
B-	80 - 82.99
C+	77 - 79.99
C	73 - 76.99
C-	70 - 72.99
D+	67 - 69.99
D	63 - 66.99
D-	60 - 62.99
F	< 60

Course policies

Academic honesty

TL;DR: Don't cheat!

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

- You may discuss individual homework and 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.
- **Reusing code**: Unless explicitly stated otherwise, you may make use of online resources (e.g. StackOverflow) for coding examples on assignments. If you directly use code from an outside source (or use it as inspiration), you must explicitly cite where you obtained the code. Any recycled code that is discovered and is not explicitly cited will be treated as plagiarism.

Any violations in academic honesty 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.

Late work & extensions

The due dates for assignments are there to help you keep up with the course material and to ensure the teaching team can provide feedback within a timely manner. We understand that things come up periodically that could make it difficult to submit an assignment by the deadline. Note that the lowest homework and lab assignment will be dropped to accommodate such circumstances.

Late work

- Homework and labs may be submitted up to 3 days late. There will be a 5% deduction for each 24-hour period the assignment is late.
- There is no late work accepted for application exercises, since these are designed to help you prepare for labs and homework.
- The late work policy for exams will be provided with the exam instructions.
- The late work policy for the project will be provided with the project instructions.

Waiver for extenuating circumstances

If there are circumstances that prevent you from completing a lab or homework assignment by the stated due date, you may email the head TA before the deadline to waive the late penalty. In your email, you only need to request the waiver; you do not need to provide explanation. This waiver may only be used for once in the semester, so only use it for a truly extenuating circumstance.

If there are circumstances that are having a longer-term impact on your academic performance, please let your academic dean know, as they can be a resource. Please let Dr. Çetinkaya-Rundel know if you need help contacting your academic dean.

Regrade requests

Regrade requests must be submitted on Gradescope within a week of when an assignment is returned. Regrade requests will be considered if there was an error in the grade calculation or if you feel a correct answer was mistakenly marked as incorrect. Requests to dispute the number of points deducted for an incorrect response will not be considered. Note that by submitting a regrade request, the entire question will be graded which could potentially result in losing points.

No grades will be changed after the project presentations.

Class recording requests

Lectures will be recorded on Panopto and will be made available to students with an excused absence upon request. Videos shared with such students will be available for a week. To request a particular lecture's video, please fill out the form at **INSERT LINK**. Please also make sure that any official documentation, such as STINFs, Dean's excuses, NOVAPs, and quarantine/removal from class notices from student health are also uploaded to the form.

Attendance policy

- **COVID Symptoms, Exposure, or Infection:** Student health, safety, and well-being are the university's top priorities. To help ensure your well-being and the well-being of those around you, **please do not come to class if you have tested positive for COVID-19 or have possible symptoms and have not yet been tested.** If any of these situations apply to you, you must follow university guidance related to the ongoing COVID-19 pandemic and current health and safety protocols. If you are experiencing any COVID-19 symptoms, contact student health (dshcheckin@duke.edu, 919-681-9355). Learn more about current university policy related to COVID-19 at https://coronavirus.duke.edu. To keep the university community's safe and healthy as possible, you will be expected to follow these guidelines. Please reach out to me and your academic dean as soon as possible if you need to quarantine or isolate so that we can discuss arrangements for your continued participation in class.
- **Inclement weather:** In the event of inclement weather or other connectivity-related events that prohibit class attendance, I will notify you how we will make up missed course content and work. Asynchronous catch-up methods may apply.

- **Religious accommodations:** Students are permitted by university policy to be absent from class to observe a religious holiday. Accordingly, Trinity College of Arts & Sciences and the Pratt School of Engineering have established procedures to be followed by students for notifying their instructors of an absence necessitated by the observance of a religious holiday. Please submit requests for religious accommodations at the beginning of the semester so that we can work to make suitable arrangements well ahead of time. You can find the policy and relevant notification form here: https://trinity.duke.edu/undergraduate/academic-policies/religious-holidays.

Important dates

- **Aug 29:** Classes begin
- **Sep 9:** Drop/add ends
- **Sep 29:** Exam 1 released
- **Oct 3:** Exam 1 due (at 2pm)
- **Oct 10-11**: Fall break
- **Nov 11**: Last day to withdraw with W
- **Nov 17:** Exam 2 released
- **Nov 21:** Exam 2 due (at 2pm)
- **Nov 23-25:** Thanksgiving recess
- **Dec 9**: Classes end
- **Dec 10-13**: Reading period
- **Dec 14-19**: Final exams

For more important dates, see the full Duke Academic Calendar.