STA 210 Syllabus

Spring 2021

Teaching Team

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Class meetings

See Sakai for Zoom links to all class meetings.

Lecture	All students	Tue and Thur 10:15a - 11:30a EST
Labs	Lab 01L	Mon 12p - 1:15p
	Lab 02L	Mon 1:45p - 3p
	Lab 03L	Mon 5:15p - 6:30p
	Asynchronous	

Course learning objectives

By the end of the semester, you will be able to. . .

- Analyze real-world data to answer questions about multivariable relationships.
- Fit and evaluate linear and logistic regression models.
- Assess whether a proposed model is appropriate and describe its limitations.
- Use R Markdown to write reproducible reports and GitHub for version control and collaboration.
- Communicate results from statistical analyses to a general audience.

Course community

Duke Compact & Community Standard

The Duke Compact

The Duke Compact recognizes our shared responsibility for our collective health and well- being. Please be reminded that by signing your name to this pledge, you have acknowledged that you understand the

conditions for being on campus. These include complying with university, state, and local requirements and acting to protect yourself and those around you. For complete language and updated policies, please visit returnto.duke.edu/compact/.

Duke Community Standard

All students, whether residing on campus or learning remotely, must adhere to the Duke Community Standard (DCS): Duke University is a community dedicated to scholarship, leadership, and service and to the principles of honesty, fairness, and accountability. Citizens of this community commit to reflect upon these principles in all academic and non- academic endeavors, and to protect and promote a culture of integrity.

To uphold the Duke Community Standard:

Students affirm their commitment to uphold the values of the Duke University community by signing a pledge that states:

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

Regardless of course delivery format, it is the responsibility of all students to understand and follow Duke policies regarding academic integrity, including doing one's own work, following proper citation of sources, and adhering to guidance around group work projects. Ignoring these requirements is a violation of the Duke Community Standard. If you have any questions about how to follow these requirements, please contact Jeanna McCullers, Director of the Office of Student Conduct.

Inclusive community

It is my intent that students from 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 strive to create a learning environment that supports a diversity of thoughts, perspectives and experiences. 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.
- If something was said or done as part of this class that makes you uncomfortable, please let me know.

Accessibility

In addition to accessibility issues experienced during the typical academic year, I recognize that remote learning may present additional challenges. Students may be experiencing unreliable wi-fi, lack of access to quiet study spaces, varied time-zones, or additional responsibilities while studying at home. If you are experiencing these or other difficulties, please contact me to discuss possible accommodations.

Academic accommodations

The Student Disability Access Office (SDAO) will continue to be 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. Zoom has the ability to

provide live closed captioning. If you are not seeing this, and but would like to see this feature, please reach out to your instructor for assistance.

Course materials & communication

Materials

All lecture notes, assignment instructions, up-to-date schedule, and other course materials may be found on the course website, https://sta210-sp21.netlify.app/, specifically on the **Schedule** page.

See the weekly pages for a detailed outline of each week's materials, assignments, videos, and activities.

We will use RStudio and GitHub for computing in the class. You may use RStudio through the STA 210 - Regression Analysis Docker container. See the Resources page for resources to help you get started with RStudio and GitHub.

Communication

Regular announcements will be sent to the class through Sakai. Please check your email or check the **Announcements** tab in Sakai regularly to ensure you have up-to-date information about the course.

Online communication

If you have general questions about the course logistics, content, or assignments, you may post them on the online discussion platform Piazza. Note that this forum should only be used for questions or comments that may be viewed by the entire class.

Piazza is accessible through the course page by clicking on the Piazza link on the top of course webpage or through Sakai. Note that it may ask you to make a financial contribution. You are **not** required to make a contribution participate in the class discussion on Piazza.

Email

If there is a question that's not appropriate for the online discussion platform, you are welcome to email me directly. **If you email me, please include "STA 210" in the subject line.** Barring extenuating circumstances, I will respond to STA 210 emails within 48 hours Monday - Friday.

Activities & Assessment

The following activities and assessments will help you successfully achieve the course learning objectives. By experiencing the course content in different ways, you will not only gain a better understanding of regression analysis, but you will also get experiences that can guide you as you apply what you've learned in future academic and professional settings.

A week in STA210

Day	Activity
Monday	Attend lab
	Watch lecture content video for Tuesday
Tuesday	Attend live lecture session 10:15a - 11:30a
Wednesday	Tuesday's application exercise due
	Watch lecture content video for Thursday
Thursday	Attend live lecture session 10:15a - 11:30a

Day	Activity
Friday	Thursday's application exercise due

Lectures

Lectures will have two components:

- **Lecture content videos**: These are pre-recorded videos that contain the content. You can think of these as a "video textbook". You should watch the content videos before we meet for the live sessions.

- **Live lecture sessions**: These sessions will be on Zoom during the scheduled class time. During this time, we will answer questions from the live lecture videos and work through application exercises (AE) to apply what you learned in the content videos.

Labs

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 performed 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 in the STA 210 GitHub organization 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 you will also be asked to evaluate your team members' engagement periodically during the semester. Lab assignments will be completed using R Markdown, correspond to an appropriate GitHub repository, and submitted to Gradescope.

Sections 01L - 03L: If you are in one of these sections, you are expected to attend lab during the scheduled time. You will spend most time working with your team to complete that week's assignment. There will be teaching assistants available if you have questions as you work.

Section 04L: Though you do not have a scheduled lab time, you will be assigned a team to work on the weekly lab assignment. There will be a short video to introduce each lab, and the teaching team will provide lab hours specifically for asynchronous lab students.

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

Homework

In most homework assignments, 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. Homework must be typed up using R Markdown and GitHub and submitted to Gradescope.

One homework assignment will be dedicated towards engaging with statistics outside of the classroom by attending statistics-related talks, participating in a data analysis competition, listening to related podcasts, or similar activities. More details will be provided during the semester.

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

Quizzes

The quizzes are an opportunity to assess the knowledge and skills you've learned. They will include both the conceptual and mathematical aspects of regression. More details will be provided before each quiz.

Your lowest quiz grade will be down-weighted in the calculation of your final quiz average.

Final Project

The purpose of the project is to apply what you've learned throughout the semester to explore an interesting data-based research question using regression. 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 later in the semester.

Participation

The participation component of the grade will be based on two components:

- **Participating in lecture.** This includes watching the lecture content videos and completing the Application Exercises (AEs) from the corresponding live lecture session. AEs are due on GitHub within one week of the live lecture. AEs will graded based on making a good-faith effort on the activity. You will receive full credit for this portion of the participation grade if you watch the lecture content video and complete the AE in a timely manner for at least 80% of the lectures.

- **Teamwork** This will be based periodic team feedback and commits to team labs and the final program.

Grading

The final course grade will be calculated as follows:

Category	Percentage
Quizzes	30%
Homework	30%
Final Project	20%
Labs	15%
Participation	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

Asking for help

- **If you have a question during lecture or lab, please to ask it!** There are likely other students with the same question, so it is a learning opportunity for everyone.

- The teaching team is here to help you be successful in the course. A lot of questions are most effectively answered through discussion rather than email, so office hours are a valuable resource. They are your time to ask questions about course content and assignments. The office hours schedule is posted on the homepage.
- Outside of class and office hours, any general questions about course content or assignments should be posted on the online discussion platform. There is a chance another student has already asked a similar question, so please check the other posts on online discussion platform before adding a new question. If you know the answer to a question posted, I encourage you to respond!

See the Resources tab for information about additional resources for the course.

Academic conduct

TL;DR: Don't cheat!

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

- On individual assignments such as homework, you may discuss the assignment with other students; however, you may not directly share your code or write up with any other student. On team assignments such as labs, you may discuss the assignment with other teams; however, you may not directly share your team's code or write up with another team. Unauthorized sharing of code or a write up is considered an instance of academic misconduct for all students involved.

- **Reusing code**: Unless explicitly stated otherwise, you may make use of online resources (e.g. Stack-Overflow) 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 and an instance of academic misconduct.

- You may not discuss or otherwise work with anyone on quizzes. Unauthorized collaboration or use of unauthorized materials is considered an instance of academic misconduct for all students involved. More specific details about standards for academic conduct will be provided with the quiz instructions.

Any violations in the standards for academic conduct 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 appropriate additional 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 and the lowest quiz grade will be down-weighted to accommodate such circumstances.

Late work policy

- Homework and labs may be submitted up to 3 days late with a 5% penalty each day.
- There is no late work accepted for application exercises or quizzes.
- 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, please email Professor Tackett 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 once, 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 notify 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 may be regraded and you may potentially lose points.

No grades will be changed after the final project presentations.

Additional resources

Please see the Resources page for additional academic and wellness resources.

Important dates

You can find important dates on the Spring 2021 Academic Calendar.