

STAT 120: Introduction to Statistics

Carleton College
Spring 2026

Lecture Time: 2a: MW 9:50 - 11:00, F 9:40 - 10:40
Class location: CMC 102
Instructor: Emily Kurtz
Email: ekurtz@carleton.edu
Office: CMC 225
Office hours: M 2 - 3, T (by appointment only) 10:30 - 11:20, W 11:30 - 12:30, F 12 - 1
Stats Lab: CMC 304 (7:00 - 10:00 pm Sunday - Thursday)

Resources

The following books are required for the class and can be bought at the bookstore or, in the case of the lab manual, accessed online for free. If you are off campus, you will need Carleton's VPN to access the manual.

- *Statistics: Unlocking the Power of Data, 3rd Edition*
- *Carleton Stats Lab Manual*

In addition, you will need R and RStudio for this class. You can either access RStudio online via Carleton's *Maize server* (in which case you will need to be on campus or VPN into campus to use it) or download **both** R and RStudio via the instructions on the first page of the *Carleton Stats Lab Manual*. Either option is fine - when you are first learning R, it may be slightly easier to go with the Maize server.

Along with these resources, if you ever need help with coding, homework problems, your project, or anything else we are learning in class, please take advantage of the Stats Lab and my office hours (see top of this syllabus for more details on location and time).

Assessment

Grading for this class will be based on five items: homework, check in surveys, statistical writing, exams, and a final project. See Table 1 for scoring breakdowns and page 5 for due dates. **There will be no extra credit offered in this course.**

- **Homework.** There are 9 homework assignments, each graded out of 15 points. However, your *total homework grade* will be out of $15 \times 8 = 120$ points, meaning you can drop one homework or score imperfect scores on each homework and still potentially earn a perfect overall homework score. **Homeworks are due at 11:59 pm.**
- **Check In Surveys.** There will be 8 short check in surveys over the course of the term (on each Monday excluding Monday of Weeks 1 and 6). These will always ask the same brief questions to see if you are facing any obstacles in your learning, group work, etc. or if there are any patterns to the concepts that the class seems confused by. You will earn an automatic 6 points for each survey you fill out, up to a maximum

of 30 total points. You are welcome to fill out more surveys if you'd like, but this means you need only fill out 5 to earn the maximum number of points here. **Check in surveys are due at 11:59 pm on the day they are assigned (so Monday).**

- **Statistical writing.** There are four statistical writing assignments. You will complete these assignments with your final project group, and they are designed to build towards the final project. **Statistical writing assignments are due at 11:59 pm.**
- **Final project.** Your group will present the results from your research question, research design, and data analysis from the statistical writing assignments, and add a discussion and conclusion section. This project is neither a paper nor a slide show; instead, you can make a poster, website, mini graphic novel, infographic, series of podcasts/short videos, one long video, or more. I am open to other ideas as long as you run them by me. **The final project is due at 9:30 pm.**
- **Exams.** There are three exams. You cannot take these exams late. Instead, if you miss one of the three exams, there is an optional fourth exam held on the last class day of the term (Wednesday Week 10), where you can choose one exam to "retake." You must sign up for an exam retake by 11:59pm the Monday of Week 10; I will send out a Google form where you will express your interest in retaking an exam and will tell me which exam you would like to retake. This exam is not identical to the exam you choose to retake, but it will cover the same material. If you choose to retake an exam through this process, your new score on that exam will be the higher of the two scores. You cannot retake more than one exam. This retake option is available to all students but is not at all mandatory if you are already happy with your grade.

Assignment	Points	How Many	Total
Homework	15	9	120
Check In Surveys	6	9	30
Statistical Writing	15	4	60
Final Project	90	1	90
Exams	100	3	300
			600

Table 1: Summary of assignments and points.

Letter	Percent	Letter	Percent
A	93-100	C	73-76.9
A-	90-92.9	C-	70-72.9
B+	87-89.9	D+	67-69.9
B	83-86.9	D	63-66.9
B-	80-82.9	F	0-62.9
C+	77-79.9		

Table 2: Grade scale.

Collaboration

The statistical writing assignments and final project are true collaborative assignments. You will work with your group and submit one final product for these assignments. While I expect every member of the group to contribute meaningfully and to the best of their ability, by default I will trust you all to divide group labor in the way that best serves the needs of the group. That said, if you run into an issue with group dynamics in any way (e.g. if someone is not contributing at all or responding to communications), please reach out to me early or state your concerns on the check-in surveys. If you are unsure if what you are experiencing warrants a discussion with me, still feel free to come see me. In such a circumstance, I will work with your group to come up with a resolution that is fair to all members. This may involve anything from a simple warning to more extreme actions like dissolving the group, asking for specific written information on which group member contributed what to the project, requesting individual meetings to discuss the project in addition to the final project presentation, etc.

You should attempt to solve all homework problems on your own before discussing with classmates. If you are still stuck, you absolutely can discuss problems with your classmates, but you *must* write up your own solutions. In addition, please write the names of any classmates with whom you discussed the assignments on the top of your submission.

Accommodations for Students with Disabilities

Carleton College is committed to providing equitable access to learning opportunities for all students. The Office of Accessibility Resources (Henry House, 107 Union Street) is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations. If you have, or think you may have, a disability (e.g., mental health, attentional, learning, autism spectrum disorders, chronic health, traumatic brain injury and concussions, vision, hearing, mobility, or speech impairments), please contact OAR@carleton.edu or call Sam Thayer ('10), Director of the Office of Accessibility Resources (x4464), to arrange a confidential discussion regarding equitable access and reasonable accommodations.

Attendance Policy

There are four classes during the term where you are expected to make every effort to be there; these are Fridays of Weeks 3, 6, and 9 (exam days) and Monday of Week 10 (the poster session). If you know ahead of time that you cannot make it to class these days, let me know so that we can make a plan for you to take an exam or do your presentation ahead of time. If you cannot make it to class on an exam day and cannot take the exam early, you can "retake" that exam on the Wednesday of Week 10 (see more details in the Assessment section of this syllabus).

For all other class days, if you are so sick that you don't think you will be able to pay attention or stay awake during class, please skip. If you were sick but are starting to feel better, feel free to come to class but please wear a mask. I trust you to make these judgment calls for yourself. Please **don't** email me to tell me you plan to skip. Just sleep in and feel better without worrying about informing me! I will not be tracking daily attendance but

will notice if you are regularly missing class and falling behind. I will reach out to you in this case and, additionally, possibly your class dean.

Extensions and Late Work

I do not grant extensions except under extenuating circumstances. Extenuating circumstances include things like extended illness that cause you to miss many classes, family emergencies, etc. They do *not* include last-minute technology troubles or busy schedules due to other classes or extra-curricular obligations. There is already flexibility built into the grading scheme to account for that.

You can turn homework and statistical writing assignments in up to three days late late, with a daily late penalty of 25%. What this looks like: the Gradescope window for submission will close three days after the due date, and I will *not* accept any late assignments after this point except under extenuating circumstances. However, one caveat to this policy is that if you turn in your assignment past the official due date but before the three day window, and your grader or I have not yet begun grading, a late penalty will *not* be given. I cannot guarantee when we will start grading; it could be the next morning or two days later. So it is safest for you to submit your assignments *on time*, but you might get lucky and still receive full credit for a late submission.

Statistical writing assignments are graded for completion of components asked for, not perfection, so getting those in *on time*, even if they're far from perfect, will almost always end up better for your stress levels and for your grades than taking a late penalty. I will not accept late check-in survey submissions. I also will not (and in fact cannot, according to college policy) accept late submissions for the final project.

Ultimately, it is up to you to communicate extenuating circumstances to me, ideally as early as possible, but I will do my best to keep an eye on patterns to your performance over the term. If I notice a pattern of missing work from you (many assignments, more than one exam, etc.), a pattern of emails requesting extensions, or a trajectory that shows a risk of you not passing the class, I will reach out to you and, likely, your class dean as well. This is not as a punishment, but instead in response to the likely possibility that this pattern is due to larger forces that may be impacting your other classes or life more generally. Your class dean will be best equipped to help me help you.

Academic Integrity and Use of AI

You are expected to do your own academic work and cite sources as necessary. Failing to do so is a violation of the college's academic integrity policy, which can be found [here](#).

Generative AI has made it easier than ever to knowingly or unknowingly commit academic dishonesty. Like any tool, AI has its benefits and drawbacks, but my view is that when you are first learning a new skill, its drawbacks far outweigh its benefits. For your own learning, and because generative AI comes with many ethical concerns, I highly encourage you to limit your use of AI in general. In this class specifically, generative AI is **completely prohibited**, meaning you cannot use it for homeworks, exams, writing assignments, or the final project. If I find you have submitted AI work as your own, college policy requires me to report this to the Academic Standing Committee.

	Day	Topic	Reading	Due
Week 1	M	What is statistics?	1.1	Class survey
	W	Sampling, what is R?	1.2, 1.3	Read syllabus
	F	Experiments, observational studies		HW1
Week 2	M	Categorical variables	2.1, 2.2	
	W	Quantitative variables	2.3, 2.4	HW2
	F	Multiple variables	2.5	SW1 - Research Question
Week 3	M	Linear relationships	2.6	HW3
	W	Exam 1		Exam 1
	F	Sampling distributions	3.1	
Week 4	M	Confidence intervals	3.2, 3.3	
	W	Bootstrapping	3.4	HW4
	F	NO CLASS		
Week 5	M	Hypothesis testing	4.1	
	W	Significance	4.2, 4.3	HW5
	F	Errors	4.4	SW2 - Finding Data
Week 6	M	NO CLASS - Term Break		
	W	Review		HW6
	F	Exam 2		Exam 2
Week 7	M			
	W	Normal distribution	5.1, 5.2	
	F	Proportions	6.1, 6.3	SW3 - EDA
Week 8	M	One Mean	6.2	
	W	Two Means	6.4, 6.5	HW7
	F	More than 2 proportions	7.1, 7.2	
Week 9	M	More than 2 means and Regression	8.1, 9.1	HW8
	W	Review		SW4 - Inference, HW9
	F	Exam 3		Exam 3
Week 10	M	Poster session		Poster draft
	W	Exam Retake		Optional exam retake
Week 11	M (June 8)			Final Project

Table 3: **Note:** This schedule does not include the check in surveys under the due dates, but remember that check in surveys are due on Mondays and you will want to submit 5 out of 8 in order to receive all points associated with those.