

STAT 113 – Introduction to Statistics (Summer 2021)

Instructor: Kevin Woods. Call me Kevin! (he/him)

Contacting me: Kevin.Woods@oberlin.edu or 443-695-1681 (mobile). Email is better for involved or less important questions; texting is better for quick, time-sensitive questions.

Section 1 Lecture/Lab: MTWF 9-9:50am, Science Center A162 (Dye Lecture Hall).

Section 2 Lecture/Lab: MTWF 10:10-11am, Science Center A162 (Dye Lecture Hall).

Google Drive:

I will post assignments and other material in the course [Google Drive folder](#). You will need to have regular access to this and to your Oberlin email.

Office Hours:

- Monday 11:10am-12pm, Tuesday 12:30-2:30pm, Wednesday 2:30-3:30pm, Friday 12:30-1:20pm. Or you can make an appointment via email.
- The **Tuesday 12:30-2:30pm office hours will be in King 203**. The other office hours are in my office, King 220B. If you'd like to meet over zoom, I'm happy to: please email me in advance.

Required Textbook:

Statistics: Unlocking the Power of Data, Lock, et al., **2nd edition**. The edition number is important, particularly for the homework problems, but also for the daily readings. You do **not** need WileyPLUS access. We will cover the whole book. I will post the readings for the first week in our google drive folder.

Readiness:

There is a self-diagnostic exam and solutions on the Math department [website](#), covering general mathematics, below the level of calculus. I strongly recommend you take it before enrolling in this class, and let me know if you have concerns.

Stats in High School:

This class starts from the beginning, assuming no knowledge of Stats. If you had AP Stats in high school, had some other stats class, or are very strong mathematically, I urge you to take STAT 205 (offered every fall). That class reviews everything you've previously seen, before going further.

Computer Software:

- We will use the statistical package R, specifically the implementation RStudio. You will be able to access RStudio from any computer, using a web browser. Instructions and tutorials will come during the lab sessions on Tuesdays.
- **You will generally need to bring a laptop on Tuesdays** (or share with a friend). The libraries have laptops you can borrow for a short time. If owning a laptop is a financial barrier, Student Academic Success Programs (Peters 118) can often help with longer term loans.

Learning Goals:

At the end of this course, students should be able to:

- Explain the central role of *variability* in the field of statistics and understand how *randomness* affects our ability to draw conclusions from data.
- Produce appropriate *graphical displays* and *numerical summaries* of data.

- Apply basic ideas of *statistical inference*, both hypothesis tests and interval estimation, in a variety of settings.
- Understand how *statistical models*, including multivariable models, are used.
- Gain facility with a *statistical software package*, and use the output as part of a *written analysis* of data.

Assignments and Grades:

- Your focus should be on **growth**, but grades are a fact of college life. **If I can see that you are working hard and seeking support, you will pass this class.** If you find yourself preoccupied with grades, consider taking it P/NE.
- You should think of this like a lab class. **Lab classes require extra time**, because you are both learning material and getting hands on experience with scientific tools (in this class, that's statistical computer programs). You will need to be focused on **time management**, because there are multiple small assignments each week. I will do the best I can to make expectations and deadlines clear.
- Reading Questions (10%).
 - I don't want to come to class each day and tell you what the book already says. Because of this, you need to read the book beforehand; we can have better discussions when we're on the same page about the material. To encourage this, you must answer a few questions before each class.
 - You must answer these by **8am the day of class**. These will not be graded for correctness, only that you made a legitimate attempt at them. These will also be helpful to me to see what I need to emphasize in class.
 - To submit answers, read the questions on the weekly schedule of assignments, and then submit your answers on this [google form](#).
 - Since the point is to force you to read before class, I do not accept late submissions (but each one is worth a very small percentage of your grade).
- Homework (10%, lowest two dropped).
 - The best way to learn the tools and concepts in this course is to practice! Homework will be assigned each week and generally due on Fridays. I strongly suggest that you also do the suggested problems that I will assign as well; I will post full solutions to these in Google Drive. Use full sentences to explain what you are doing. Your lowest two homework grades will be dropped at the end of the semester. They are due at 5pm, generally on Fridays, submitted through this [google form](#).
 - Honor Code: You may (should!) work together on these problems, but your written solutions must be your own. In particular, you should not be reading another student's final written solutions. You may use the book and your notes, and of course come talk to me! You may use calculators and software also.
 - Late Work Policy: Because I drop two homework grades at the end of the semester, I generally do not allow you to turn it in late. These go out to graders, and so late work is logistically challenging.
- Lab Projects (30%).
 - The purpose of this type of assignment is to give you an opportunity to work on more involved and open-ended problems and to write things up in a careful manner. I will give you more specifics when I assign them. You will generally have the last bit of lab every week to get started on the assignment, and you will be able to work with others to some degree. We will have 3 or 4 projects throughout the semester, built up through weekly assignments.
 - I will only grade the final versions, and you will get (and give) peer feedback on prior versions. A **significant part** of your grade will be completing the intermediate

assignments and giving adequate peer feedback, and the rest of your grade will be the quality of the final result.

- Honor Code: I will clarify this on the first assignment. In general, you may/should consult with others, but do your own writing.
- Late Work Policy: Since peers will be heavily reliant on you to get the intermediate assignments in on time, late work on them is generally unacceptable. Occasionally being a few hours late is probably okay and better than not turning it in. For final versions, consult me **in advance** if you need to turn them in late.
- Two midterms and a final (50% total, lowest score dropped)
 - There will be in-class exams.
 - The midterms are tentatively Monday, June 28 and Monday, July 26. The final is Sunday, August 29, 7-9pm (9am section) or Monday, August 30, 9-11am (10am section).
 - Honor Code: You must work on them alone. They will be closed book, but you are allowed a page of notes. More detailed instructions will follow.
 - Late Work Policy: Only in rare (emergency) circumstances will late exams be accepted.
 - I want you to succeed, and everybody has bad days or weeks. **I'll drop the lowest exam score, as long as you put in a good-faith effort on all of them.**

Support:

- You belong at Oberlin and you belong in this class. People arrive here with different experiences and backgrounds in mathematics. Put in the work, seek out support, and focus on self-improvement, and I promise you that **your statistical skills will grow**. The rest of us are here to help, including:
 - Me! Come by office hours, any time.
 - Your peers! Working with other students helps everyone improve.
 - Yourself! Your skills will improve best if you come at this with a growth mindset: embrace the challenge of this class, persist through difficulty, be inspired (not threatened) by the success of others, seek out support.
- The Quantitative Skills Drop-in Tutoring Center has many students with Statistics knowledge. No appointment is necessary. Summer 2021 hours are not posted yet, but check out <https://www.oberlin.edu/clear/tutoring>.
- If you have a disability of any sort that may affect your performance in this class, please consult with me and with Student Academic Success Programs (Peters 118). All requests for accommodation must go through that office.
- You can often get a free, individual tutor from Student Academic Success Programs (Peters 118).

COVID-19 Classroom Safety:

- Students and faculty who are fully vaccinated (two weeks past the final dose) are not required to wear masks in the classroom. It is recommended that unvaccinated students wear masks and maintain distance when possible.
- We are in a large lecture hall, with space to spread out as much or as little as you wish, masked or not (as you wish). I just ask that you respect everyone else's choices as we get used to the new policies.