

Data and Statistics Course Syllabus

Central Linn HS Semester 2, 2021-22 SY

Instructor Information

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General Information

Did you know that 3 out of 4 people make up 75% of the population? The more you know! As it turns out, data is everywhere. If you've ever read the news, watched sports, shopped for a car, phone, or computer, or thought about how the price of flip flops goes up during the summer, you know what I mean. Everyone uses data to make decisions and try to understand the world, whether we know it or not. Therefore, this class is critically important to your education, and very relevant to your life after you leave high school.

To that end, this will feel different from other math classes in a few key ways. Data science is a very creative process, and you will have lots of opportunities to get creative with your assignments. There will be projects instead of tests, and they will involve collecting, representing, and writing about data. Because you have to describe and interpret data to analyze it, you will do a fair bit of writing in this class. We will also learn the basics of computer programming, as this is an important skill for analyzing data.

I hope that you take from this class a well-rounded understanding of what data science is and the tools it offers, to help you understand the world. You're in for a treat!

Course Outline

This course consists five units, each taking 3-4 weeks. We will be using the YouCubed High School Data Science curriculum, developed at Stanford University. Link:

<https://hsdatascience.youcubed.org/curriculum/>. This class is worth 0.5 math credits.

Unit 1: Data tells a story. In this unit, we will introduce the data science process, as well as discussing variability and data ethics.

Unit 2: Data in the community. We will use univariate (one-variable) to examine data in the community We will also learn online data analysis tools, like CODAP and Google Slides

Unit 3: Water in your life. We will discuss bivariate (two-variable) data, correlation vs. causality, and spurious correlation, to collect and examine water usage data.

Unit 4: Shuffling songs. We will study experimentation, probability, sampling, and random processes in this unit. In doing so, we will also introduce the basics of computer programming.

Unit 5: What's the best place for me? Topics will include categorical data, weighted variables, and prioritization.

Expectations in the classroom:

This first one's a no-brainer. Treat *yourselves and each other* with the utmost respect and kindness. **Strive not to just meet these expectations, but to set an example for others.** This rule applies to me too, and if you feel that I haven't lived up to it, please let me know. The following subsections are just special cases of this rule:

Masks

Per state mandate, I must insist that you wear a face covering that covers your mouth and nose while we are inside the classroom. I recognize that this policy may conflict with your personal views. Violating this policy could jeopardize my teaching license and subject me to significant civil penalties. Therefore, the following will happen if you are not wearing a mask:

- First offense: Verbal warning
- Second offense: I will ask you to put on an N95 mask or step outside
- Third offense: Lunch detention

Here's some mask tips to make this as easy as possible:

- Get a mask that's comfy for you! Personally, I like the blue surgical ones, and I've got a stash of those in the classroom if you'd like to try one.
- If it keeps sliding down, tie loops in the strap that you can adjust to the right length. I can show you how if you'd like.

Cell Phones

Your cell phone should be turned off and put away unless you are using it for a class-related activity, and have my permission.

- **First offense:** I will warn you, and ask you to put it away
- **Second offense:** I will ask you to put your phone on my desk and leave it there until the end of class.
- **Third offense:** I will ask you to put your phone on my desk and leave it there until the end of the day.

Food and Drink

Unfortunately, due to the need to remain masked in the classroom, I have to ask that you save the food for lunchtime. If you need to take a 5-minute snack break, let me know and you can step outside. You may bring a beverage if your mask is covering your nose and mouth whenever you are not taking a sip. I ask that your beverages be closed-top. Since there is carpet in my classroom, spills are difficult to clean up.

Bathroom

Ask me before you go - I will almost always say "yes." There's one right outside the door, so just let me know when you leave so I can keep track of where everyone's at. I only allow one person in the bathroom at a time. If it's at a really important moment, I might ask you to wait a minute. If you do not use this privilege responsibly, I reserve the right to revoke it.

Email

Email me any time! You can generally expect a reply in less than a day. If it's over a weekend, I may not reply until Monday.

Grading Policies

Your grade in this class will be divided into two categories: Projects, and Weekly Reflections. There are no tests in this class.

Unit Projects (80%): Generally speaking, we will have a cumulative project for every unit. We will work on them primarily during class, although on occasion they will involve data you'll collect at home. Projects will be evaluated based on a rubric, on a scale of 1-4.

Weekly Reflections (20%): Every week, you will have a short reflection assignment, which will be completed during class. Generally speaking, these will be due on Friday each week. These will be evaluated based on the weekly reflection rubric, on a scale of 1-4.

Most of the assignments will be worked on during class - however, there will be times when certain elements (ex. data collection) will need to be completed at home.

Late Assignments: Topics in this class build on each other in a way that will make it very difficult to master the current material if you are not caught up. You are also growing older, wiser, and more mature. Therefore, ***late assignments (reflections or projects) will receive a maximum score of 3 in this class.*** Assignments must be submitted the day it is due to earn a higher grade.

Quarantine: If you are quarantined when we are working on an assignment, you are expected to make meaningful progress on it while you're at home. You have up to one week after your return to submit missing assignments before they are counted as "late."

Grading Scale

Below is the grading rubric used by all classes taught at Central Linn High School for assessments:

- Z = assessment was not submitted
- R = assessment was received and being graded
- 0 = incomplete, not enough evidence to assess
- 1 = does not yet meet standard/learning target
- 2 = nearly meets standard/learning target
- 3 = meets standard/learning target
- 4 = exceeds standard/learning target

A student who earns between a “2” and a “3” may make up their work at summer school and earn a “3” in the class. A student who earns less than a “2” will need to retake the class.

Data + Statistics Signature

Please detach this page, keep the syllabus, and turn this page in to Mr. Rise by Friday, February 4th, 2022.

I have read and understood all of the information given in the course syllabus, including the general expectations, cell phone policy, food and drink policy, email policy, grading policy, and assessment policy.

Student Printed Name: _____

Student Signature: _____ Date: _____

Parent/Guardian Signature: _____ Date: _____

Parent/Guardian Email: _____

Parent/Guardian Phone Number: _____

Type of phone: work cell home

Preferred method of contact: phone email

Preferred time of contact: _____