

STATISTICS SYLLABUS

Course Description

This course is designed to increase skills in statistics and probability while preparing you for a Intro to Statistics college course. Decisions or predictions are often based on data—numbers in context. These decisions or predictions would be easy if the data always sent a clear message, but the message is often obscured by variability. Statistics provides tools for describing variability in data and for making informed decisions that take it into account.

Data are gathered, displayed, summarized, examined, and interpreted to discover patterns and deviations from patterns. Quantitative data can be described in terms of key characteristics: measures of shape, center, and spread. The shape of a data distribution might be described as symmetric, skewed, at, or bell shaped, and it might be summarized by a statistic measuring center (such as mean or median) and a statistic measuring spread (such as standard deviation or interquartile range). Different distributions can be compared numerically using these statistics or compared visually using plots. Knowledge of center and spread are not enough to describe a distribution. Which statistics to compare, which plots to use, and what the results of a comparison might mean, depend on the question to be investigated and the real-life actions to be taken.

Randomization has two important uses in drawing statistical conclusions. First, collecting data from a random sample of a population makes it possible to draw valid conclusions about the whole population, taking variability into account. Second, randomly assigning individuals to different treatments allows a fair comparison of the effectiveness of those treatments. A statistically significant outcome is one that is unlikely to be due to chance alone, and this can be evaluated only under the condition of randomness. The conditions under which data are collected are important in drawing conclusions from the data; in critically reviewing uses of statistics in public media and other reports, it is important to consider the study design, how the data were gathered, and the analyses employed as well as the data summaries and the conclusions drawn.

Random processes can be described mathematically by using a probability model: a list or description of the possible outcomes (the sample space), each of which is assigned a probability. In situations such as flipping a coin, rolling a number cube, or drawing a card, it might be reasonable to assume various outcomes are equally likely. In a probability model, sample points represent outcomes and combine to make up events; probabilities of events can be computed by applying the Addition and Multiplication Rules. Interpreting these probabilities relies on an understanding of independence and conditional probability, which can be approached through the analysis of two-way tables.

Technology plays an important role in statistics and probability by making it possible to generate plots, regression functions, and correlation coefficients, and to simulate many possible outcomes in a short amount of time. We will be using all of this information to learn more about probability and statistics in order to prepare you for the next level.

Concept Curriculum Overview

Interpreting Categorical and Quantitative Data

- Summarize, represent, and interpret data on a single count or measurement variable
- Summarize, represent, and interpret data on two categorical and quantitative variables
- Interpret linear models

Making Inferences and Justifying Conclusions

- Understand and evaluate random processes underlying statistical experiments
- make inferences and justify conclusions from sample surveys, experiments and observational studies

Conditional Probability and the Rules of Probability

- Understand independence and conditional probability and use them to interpret data
- Use the rules of probability to compute probabilities of compound events in a uniform probability model

Using Probability to Make Decisions

- Calculate expected values and use them to solve problems
- Use probability to evaluate outcomes of decisions

Grade Weighting

Analyze/Evaluate/Create/Apply:	90%
Knowledge/Comprehension:	10%

Textbook

Understanding Basic Statistics 7th Edition

CLASSROOM PROCEDURES
Algebra 2
Mrs. Michelle Noble
noblem@lancastersd.k12.wi.us
x373 Room 26

1. TARDIES and ABSENCES

I will follow the absence and tardy policy mandated by the school. I will count tardies for students that are not in the room when the bell rings. When a student is absent, he/she is responsible for turning in make-up work and getting notes from another reliable student in the class. If you are absent on the day of a quiz or test that you knew about, **come back to school prepared to take the quiz or test! Be sure to set up a time before or after school or during a study hall.**

Students, you will have one day for every day missed to make up work. Make up work must be turned in on time; this is for your benefit. If you get behind, it can be terribly hard to catch up. All assignments given and grades taken are always posted in PowerSchool. You must take the initiative to find out what the assignment was and if there was a grade taken!!! **Most importantly just communicate with me!**

2. RESTROOM PASSES

If you need to use the restroom, please be respectful of everyone in the classroom. Try to avoid missing instruction. The pass is hanging by the door. Simply grab it wear around your neck. Be quick with the pass. If the pass is there you may leave (you do not need to ask permission), but if the pass is gone you must wait until the pass returns. **You may not leave during any assessment.**

3. BEHAVIOR IN CLASS

Students are expected to be respectful to the teacher and other students at all times. Students are expected to come to class prepared. They are also expected to be ready to learn and participate in the classroom activities. Students are expected to do their own work. A zero will be given on any assessment if a student is found cheating with an opportunity for an alternative assessment for a major assignment not to exceed a grade of a 65. If two people are involved, both will receive zeros. No warnings will be given, cheating is not tolerated. Distracting behavior such as talking out of turn, insulting other students, being disrespectful to me or anyone else in the room, or any of behavior I deem inappropriate will result in removing the student from the room and contacting that student's parents. Repeat offenders will be given office referrals.

4. HOMEWORK

There will be practice problems given almost every day. I try to give time to work on the problems in class, but this will not always happen. Even though you have an assignment nearly every day, I do not take it up every day. Not all problems will be turned in for a grade. Whether I take them up or not, please know that all practice problems contain information that will show up on tests and quizzes. You will not be successful in this class if you do not practice. Each student will be given a homework folder that will be turned in containing the homework and self-assessment on each assignment. **You can fill this folder in as you work, you do not need to wait until the day it is due to complete.**

5. SUPPLIES

Individual students will need a binder for notes, notebook paper, pencils, colored pencils, graph paper, and scientific calculator.

6. Chromebook CLASSROOM POLICY

I expect the Chromebook to be brought to class fully charged when notified. When I say "45" I want the screen face down at a 45 degree angle. When I say "90" I want the screen open properly and ready to be used. **You may charge your Chromebook in my classroom as long as it does not disturb the rest of the class or students and the charging station near the smartboard. Do not touch another student's Chromebook without their prior permission.**

7. TUTORING

I will be available before and after school most days. Not available Monday morning or Friday after school without a prior request. Please remember to take advantage of any extra time in class.

8. LHS MATH Reassessment Policy

- Types of Assessments that qualify for reassessment: **ONLY Quizzes**
- If student passes the requiz, the student will receive the grade of a **70**. If the student fails the retest, **the students will receive the better of the two grades.**
** It is mandatory you correct your original quiz and bring your corrections **and** original quiz to the requiz.*
- **Requiz must be done before the next quiz or test covering the same material.**

9. Web-Site

A Statistics website is available to all students. It will be used regularly to post the calendar, worksheets, notes, announcements, answer keys, and review assignments. **Please check it regularly.**
MrsMichellenoble.weebly.com

10. Remind, Go Guardian, and Google Classroom

Remind is an app on your phone or a website used to communicate quickly about updates, answer keys, or any adjustments made to our current calendar/plan.

Go Guardian is our system we use for the Chromebooks in class so I can help all of you at once stay on track and follow to guarantee understanding.

Google Classroom is a location I can share documents, links to review games, and more.

Be sure to use your appropriate course and class period login to get the correct information as it is updated.

11. Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

About me:

- 2003 graduate from Graceland University with a Bachelor of Science degree.
- 2006 graduate from Texas Woman's University with a Master's in Business Administration.
- 2019 graduate from Graceland University with a Master's in Education and an emphasis in Differentiated Instruction.
- 13 years teaching mathematics at CHS; 1 year of teaching mathematics in Lewisville ISD in Texas.
- 13 years of coaching soccer (Won 2 state championships and 1 national title) one season of volleyball
- Second year at Lancaster High School teaching math
- I've been married for 4 years and have 2 wonderful boys ages 18 months and 2.5 years.