North Mac High School Statistics 2019-2020 Course Syllabus

Instr: Cinthia Gillespie
Email: cgillespie@northmacschools.org
Office Hours: 3:00-3:30 M-F
Class website available through www.northmacschools.org

Course Description:
This introductory course in statistics focuses on statistical reasoning and its use in solving real-world problems and in interpreting results reported in journals and through popular media. The content includes the following: basic descriptive statistics, basic probability theory, random variables and probability distributions, sampling distributions for statistics, statistical inferences involving confidence interval estimation and hypothesis testing for means, standard deviations and proportions, correlation, and regression.
Prerequisites: C or better in Algebra II

Statistics is one of two college-level math course offerings at NMHS. This course will be taught to prepare the students for the AP Statistics exam that will be offered in May. Students are strongly encouraged to prepare to take the test. A score of at least 3 will earn students college credit at most universities (a 4 or higher is required for more elite universities or specific programs).

Course Design:
Statistics is designed to teach students methods needed to collect, understand, and interpret data. Students will learn to express their conclusions and to understand the conclusions of others. Our textbook will be the foundation of the course. We will be learning the context of the problems through classroom lectures, discussions, and activities such as homework problems and projects. Miscellaneous supplemental resources will be used as necessary throughout.

Assessment will be done through homework assignments, quizzes, and exams. Students will be expected to use the methodology acquired to explain their data analysis and to explain the validity of those analyses. A final project may be used to have students demonstrate their knowledge from the entire course.

Textbook:
Starnes, Tabor, Yates, & Moore. *The Practice of Statistics.* 5th ed.

Tecnology:

Students will use graphing calculators on a daily basis. We will primarily use the TI-84CE in class. TI-83 and TI-84 are also useful. These calculators will also be able to be used on the AP exam. Each student should strongly consider purchasing their own calculator to use for class activities.

We will also use Microsoft Excel for some applications to create charts and graphs. Access to this will be primarily through school laptops and the students' Office 365 account, which is accessible at home.

Other Required Supplies:
We will be taking notes most days, and working in class on problems and projects as needed. Students should have some form of organization for such (notebook, binder with paper, etc). Notes are not required, but highly recommended as a reference tool throughout the school year.

Pencils are essential. I would prefer all work be done in pencil.

Classwork/Homework: 20% of grade
Instructional activities and problem sets will be done primarily in class. Lectures will be first, collaborative "work days" will be later, so students have an opportunity to practice the class content. Problem sets will be due on the day of the chapter test at the end of the unit. Problem sets will be assessed 5 points, as a completion grade, as solutions will be available during the work days. Assignments will contain free response type questions periodically to prepare students for the AP exam.

Absent students will be responsible for obtaining their makeup work upon return to school. Assignments will still be due at the end of the chapter, unless an extended absence occurs, during which the teacher will determine an appropriate due date.

It is essential that you keep up on assignments. Getting behind only ensures that you will not have the necessary skills when it's time to take an assessment or use the skills in class. Do not wait until the night before the test to do assignments! It is hard to get adequate help on homework if you wait until the last minute.

Quizzes: 30% of grade
Weekly quizzes to assess progress will be given on Fridays, when possible. Quizzes will cover 2-3 sections at a time, and points will vary within. Quiz questions will be taken from our textbook problems mainly, with others from practice AP exams or other sources.

Exams: 50% of grade

Our largest assessment will consist of chapter tests or exams. These will cover one chapter at a time, and will be scaled to 100 points per chapter. Assessments will be a combination of multiple choice and short answer questions, with at least one longer free response question.

Classroom Rules

As this is a senior-level class, responsibilities and expectations will be treated as such:

- Come prepared for class each day (book, paper, pencil, calculator, etc). Not coming prepared does not equal a free pass for the day.
- Leave the cell phones off and out of sight. There are a few apps that we may download and/or use. However, learning to use those will not benefit your performance on the AP exam, as you will only have a graphing calculator. A charging station will be provided for you to charge while you visit me each day. Absolutely no texting, tweeting, snapping, etc. while we are taking notes and participating in class!
- If you make a mistake, own up to it. If you forgot your homework, don't copy, just say "I forgot to do it". Trust me, owning up to a mistake is way better than getting caught in a lie about it!
- If you need to use the restroom, go to the office, etc, please wait until an appropriate time of class. Before we start or after notes are done is a perfect time! During passing period, you may go without permission, but hustle back!
- Tardies will be taken care of according to school policy.
- Handbook rules will be followed for all other incidences.
- Absences. 'Nuff said. Please don't miss class unnecessarily. I understand if you're sick, have an appointment, whatever. If you're just skipping, you're messing up your own education. It's not fun to get behind in statistics, trust me!
- Please no food in class, unless we're having a special day (and I okay it ahead of time). Water bottles and cups with lids with water only are acceptable per our handbook.
- Tutoring will be available before/after school as needed. Be aware that until homecoming is over, my after school time could be limited.

End of Course AP Exam:

May 15, 2020, the College Board will administer the AP Statistics exam. Students are not required to take it, but in order to possibly receive college credit for the course, they must take it and score a 3 or higher. Details will be released at a later date for the time and location of the exam. THE CLOCK BEGINS NOW!!! Mrs McQueen needs to know by November 15, 2019, if you are planning to take the AP exam.

Course Outline (subject to time constraints and changes):

Time/Chapter	Content	Standards/Resources/Assign

		ments
3 Days	Course Outline	Syllabus Pretest College Board login
2 weeks Chapter 1	Exploring Data ● Intro: Data Analysis: Making Sense of Data ● 1.1 Analyzing Categorical Data ● 1.2 Displaying Quantitative Data with Graphs ● 1.3 Describing Quantitative Data with Numbers	● Intro: ● 1.1: ● 1.2: ● 1.3: ● FRAPPY ● Review ● Ch 1 Test ● Case Study
2 weeks Chapter 2	Modeling Distributions of Data ● 2.1 Describing Location in a Distribution ● 2.2 Density Curves and Normal Distributions	● 2.1: ● 2.2: ● FRAPPY ● Review ● Ch 2 Test ● Case Study
2 weeks Chapter 3	Describing Relationships ● 3.1 Scatterplots and Correlation ● 3.2 Least-Squares Regression	● 3.1: ● 3.2: ● FRAPPY ● Review ● Ch 3 Test ● Case Study
2 weeks Chapter 4	Designing Studies ● 4.1 Sampling and Surveys ● 4.2 Experiments ● 4.3 Using Studies Wisely	● 4.1: ● 4.2: ● 4.3: ● FRAPPY ● Review ● Ch 4 Test ● Case Study
1 day	AP Practice Test 1	
2 weeks Chapter 5	Probability: What are the Chances? ● 5.1 Randomness, Probability, and Simulation ● 5.2 Probability Rules ● 5.3 Conditional Probability and Independence	● 5.1: ● 5.2: ● 5.3: ● FRAPPY ● Review ● Ch 5 Test ● Case Study

2 weeks Chapter 6	Random Variables ● 6.1 Discrete and Continuous Random Variables ● 6.2 Transforming and Combining Random Variables ● 6.3 Binomial and Geometric Random Variables	● 6.1: ● 6.2: ● 6.3: ● FRAPPY ● Review ● Ch 6 Test ● Case Study
2 weeks Chapter 7	Sampling Distributions ● 7.1 What is a Sampling Distribution? ● 7.2 Sample Proportions ● 7.3 Sample Means	● 7.1: ● 7.2: ● 7.3: ● FRAPPY ● Review ● Ch 7 Test ● Case Study
1 day	AP Practice Test 2	
2 weeks Chapter 8	Estimating with Confidence ● 8.1 Confidence Intervals: The Basics ● 8.2 Estimating a Population Proportion ● 8.3 Estimating a Population Mean	● 8.1: ● 8.2: ● 8.3: ● FRAPPY ● Review ● Ch 8 Test ● Case Study
2 weeks Chapter 9	Testing a Claim ● 9.1 Significance Tests: The Basics ● 9.2 Tests About a Population Proportion ● 9.3 Tests About a Population Mean	● 9.1: ● 9.2: ● 9.3: ● FRAPPY ● Review ● Ch 9 Test ● Case Study
2 weeks Chapter 10	Comparing Two Populations or Groups ● 10.1 Comparing Two Proportions ● 10.2 Comparing Two Means	● 10.1: ● 10.2: ● FRAPPY ● Review ● Ch 10 Test ● Case Study
1 day	AP Practice Test 3	
2 weeks Chapter 11	Inference for Distributions of Categorical Data ● 11.1 Chi-Square Tests for Goodness of Fit	● 11.1: ● 11.2: ● FRAPPY ● Review

	● 11.2 Inference for Two-Way Tables	● Ch 11 Test ● Case Study
2 weeks Chapter 12	More About Regression ● 12.1 Inference for Linear Regression ● 12.2 Transforming to Achieve Linearity	● 12.1: ● 12.2: ● FRAPPY ● Review ● Ch 12 Test ● Case Study
1 day	AP Practice Test 4	
2 weeks (or time to AP Exam)	Review for AP exam	Practice Tests