

Advanced Placement Statistics 2015-2016

Northland Preparatory Academy Mathematics Department

Instructor: **Kymerly Stanoff**
Contact Information: kstanoff@northlandprep.org

928-214-8776 x 814

Course Description:

In this course, students will use mathematics to model and analyze problems from the natural and social sciences. In order to perform effectively as professionals and citizens, students must become competent in quantitative data and in applying basic quantitative skills to the solution of real-life problems. This course is designed to help students develop key tools and critical and statistical thinking skills needed.

An outline of topics covered:

Exploratory Analysis:

- Categorical Data
- Quantitative Data
- Comparing Distributions
- Standard Deviation

Exploring Relationships Between Variables:

- Scatterplots, Association, and Correlation
- Linear Regression
- Regression Wisdom
- Re-expressing Data

Gathering Data:

- Understanding Randomness
- Sample Surveys
- Experiments and Observational Studies
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Probability:

- Randomness to Probability
- Random Variables
- Probability Models

Statistical Inference:

- Sampling Distribution Models
- Confidence Intervals for Proportions
- Testing Hypotheses About Proportions
- Comparing Two Proportions
- Inferences about Means
- Comparing Means
- Paired Samples and Blocks
- Comparing Counts
- Inferences for Regression
- Analysis of Variance
- Multiple Regression

REQUIRED TEXTBOOKS/MATERIALS:

- Pearson *Stats: Modeling the World* (4th edition)
- Barron's AP Statistics Test Prep (8th edition)
- Note-taking materials (Pencils, pens, paper). You need to stay organized in whatever way works for you.
- **Graphing Calculator** (TI-84 or TI-83+. Do NOT get a TI-89)

Assessment:

Grades for each marking period are determined using the following approximate percentages:

Quizzes and Tests:	80% (typically a quiz or test every 1-2 weeks) This will include practice AP Tests in the spring. These will be counted as an effort grade.
Homework and Classwork:	10% (effort-based, homework is checked most days at the beginning of class, and making a full attempt on each problem earns credit)
Projects/Presentations:	10% (there will be 2 or 3 individual and/or team projects)

Classroom Norms:

Unless otherwise noted, all NPA rules and regulations are in place at all times in my classroom. Some particulars:

- No food or drink except for water.
- No cell phones – If I see you using your cell phone or any other unapproved device, I will take the device.

What I am doing for you:

- *Teaching* each concept to the best of my ability
- Assigning meaningful homework
My homework assignments are relevant to the classroom work, both in content and difficulty. In addition, they are a good indication of the type of material on quizzes and tests.
- Being readily available to help you through this course
I am committed to your success. That may mean extra time with me outside of class. I am available for in-school extra help via the schedule below, and by appointment at other times.

What you are doing for me:

- **Being present**
You are present in class every day, both *physically* and *mentally*. You come to class every day with all of your materials, ready to *engage yourself* in our process of learning. Credit is not given for any assignments completed late due to an unexcused absence. If you know in advance about an excused absence, talk to me *before* you miss class. Either before or after any type of absence, you can check my webpage for missing material. Unless otherwise stated, any make-up work is turned in (homework) and/or completed (quiz or test) the day you return from your excused absence.
- **Helping yourself**
The best thing you can do to succeed is to engage yourself; completing each classroom and homework assignment to the best of your ability. You should check your work and self-assess your understanding daily. I will check homework on a variable basis, but it's mostly a tool for self-evaluation and self-improvement. You should complete reading-ahead assignments to better prepare yourself for each day's class. Lastly, you should seek extra help when you need it.

Extra Help:

I am available for extra help Tuesday and Friday mornings at 7:15, most afternoons until 3:45 and by appointment.

I reserve the right to make change to the syllabus and will communicate changes in class.

