



# Mathematics Scope & Sequence 17-18

## AP Statistics (Adjusted for Harvey)

Revised: September 2, 2017

First Grading Period (38 Days)		Days	
Unit 1 Exploring Data	Standard(s)	Including, but not limited to...	
	<p>I.E Exploring categorical data</p> <ol style="list-style-type: none"> <li>1. Frequency tables and bar charts</li> <li>2. Marginal and joint frequencies for two-way tables</li> <li>3. Conditional relative frequencies and association</li> <li>4. Comparing distributions using bar charts</li> </ol> <p>I.A Constructing and interpreting graphical displays of distributions of univariate data (dotplot, stemplot, histogram, <del>cumulative frequency plot</del>)</p> <ol style="list-style-type: none"> <li>1. Center and spread</li> <li>2. Clusters and gaps</li> <li>3. Outliers and other unusual features</li> <li>4. Shape</li> </ol> <p>I.B Summarizing distributions of univariate data</p> <ol style="list-style-type: none"> <li>1. Measuring center: median, mean</li> <li>2. Measuring spread: range, interquartile range, standard deviation</li> <li>3. Measuring position: quartiles, <del>percentiles,</del> <del>standardized scores (z-scores)</del></li> <li>4. Using boxplots</li> </ol> <p>I.C Comparing distributions of univariate data (dotplots, back-to-back stemplots, parallel boxplots)</p> <ol style="list-style-type: none"> <li>1. Comparing center and spread: within group, between group variation</li> <li>2. Comparing clusters and gaps</li> <li>3. Comparing outliers and other unusual features</li> <li>4. Comparing shape</li> </ol>	<ul style="list-style-type: none"> <li>• Display categorical data with a bar graph. Decide if it would be appropriate to make a pie chart.</li> <li>• Identify what makes some graphs of categorical data deceptive.</li> <li>• Calculate and display the marginal distribution of a categorical variable from a two-way table.</li> <li>• Calculate and display the conditional distribution of a categorical variable for a particular value of the other categorical variable in a two-way table</li> <li>• Describe the association between two categorical variables by comparing appropriate conditional distributions.</li> <li>• Make and interpret dotplots and stemplots of quantitative data.</li> <li>• Describe the overall pattern (shape, center, and spread) of a distribution and identify any major departures from the pattern (outliers) (CUSS words).</li> <li>• Identify the shape of a distribution from a graph as roughly symmetric or skewed.</li> <li>• Make and interpret histograms of quantitative data.</li> <li>• Compare and contrast distributions of quantitative data using dotplots, stemplots, or histograms.</li> <li>• Calculate measures of center (mean, median).</li> <li>• Calculate and interpret measures of spread (range, IQR, standard deviation).</li> <li>• Identify outliers using the <math>1.5 \times \text{IQR}</math> rule.</li> <li>• Make and interpret boxplots of quantitative data.</li> <li>• Compare and contrast distributions of quantitative data using dotplots, back-to-back stemplots, or parallel boxplots.</li> <li>• Choose the most appropriate measure of center and spread in a given setting.</li> <li>• Use appropriate graphs and numerical summaries to compare distributions of quantitative variables.</li> </ul>	<p><b>10-11</b> <b>Days</b></p>
Textbook Sections: Ch. 1 Intro., Ch. 1.1, Ch. 1.2, Ch. 1.3			

Unit 2 Modeling Distributions of Data	Standard(s)	Including, but not limited to...	
	<p>I.B Summarizing distributions of univariate data</p> <p style="padding-left: 20px;">3. Measuring position: quartiles, percentiles, standardized scores (z-scores)</p> <p>I.A Constructing and interpreting graphical displays of distributions of univariate data (dotplot, stemplot, histogram, cumulative frequency plot)</p> <p>III.C The normal distribution</p> <ol style="list-style-type: none"> <li>1. Properties of the Normal distribution</li> <li>2. Using tables of the Normal distribution</li> <li>3. The Normal distribution as a model for measurements</li> </ol>	<ul style="list-style-type: none"> <li>• Find and interpret the percentile of an individual value within a distribution.</li> <li>• Find and interpret the standardized score (z-score) of an individual value within a distributions of data.</li> <li>• Describe the effect of adding, subtracting, multiplying by, or dividing by a constant on the shape, center, and spread of a distribution of data.</li>   <li>• Estimate percentiles and individual values using a cumulative relative frequency graph</li>   <li>• Estimate the relative locations of the median and mean on a density curve.</li> <li>• Use the 68–95–99.7 rule to estimate areas (proportions of values) in a Normal distribution.</li> <li>• Use Standard Normal Table or technology to find (i) the proportion of z-values in a specified interval, or (ii) a z-score from a percentile in the standard Normal distribution.</li> <li>• Use Standard Normal Table or technology to find (i) the proportion of values in a specified interval, or (ii) the value that corresponds to a given percentile in any Normal distribution.</li> <li>• Determine whether a distribution of data is approximately Normal from graphical and numerical evidence.</li> </ul>	
<p><i>Textbook Sections: Ch. 2 Intro., Ch. 2.1, and Ch. 2.2</i></p>			
<p><i>First grading period's curriculum continued on next page.</i></p>			

Unit 3 Describing Relationships

Standard(s)	Including, but not limited to...	
<p>I.D Exploring bivariate data</p> <ol style="list-style-type: none"> <li>1. Analyzing patterns in scatterplots</li> <li>2. Correlation and linearity</li> <li>3. Least-squares regression line</li> <li>4. Residual plots, outliers, and influential points</li> </ol>	<ul style="list-style-type: none"> <li>• Identify explanatory and response variables in situations where one variable helps to explain or influences the other.</li> <li>• Make a scatterplot to display the relationship between two quantitative variables.</li> <li>• Describe the direction, form, and strength of a relationship displayed in a scatterplot and identify outliers in a scatterplot.</li> <li>• Interpret the correlation.</li> <li>• Understand the basic properties of correlation, including how the correlation is influenced by outliers.</li> <li>• Use technology to calculate correlation.</li> <li>• Explain why association does not imply causation.</li> <li>• Interpret the slope and y-intercept of a least-squares regression line.</li> <li>• Use the least-squares regression line to predict y for a given x. Explain the dangers of extrapolation.</li> <li>• Calculate and interpret residuals.</li> <li>• Explain the concept of least squares.</li> <li>• Determine the equation of a least-squares regression line using technology or computer output.</li> <li>• Construct and interpret residual plots to assess whether a linear model is appropriate.</li> <li>• Interpret the standard deviation of the residuals and r-square and use these values to assess how well the least-squares regression line models the relationship between two variables.</li> <li>• Describe how the slope, y-intercept, standard deviation of the residuals, and r-square are influenced by outliers.</li> <li>• Find the slope and y-intercept of the least-squares regression line from the means and standard deviations of x and y and their correlation.</li> </ul>	<p><b>7-8 Days</b></p>

*Textbook Sections:* Ch. 3 Intro., Ch. 3.1, Ch. 3.2

Unit 4 Designing Studies, Sampling and Surveys

Standard(s)	Including, but not limited to...	
<p>II.A. Overview of methods of data collection</p> <ol style="list-style-type: none"> <li>1. Census</li> <li>2. Sample survey</li> </ol> <p>II.B. Planning and conducting surveys</p> <ol style="list-style-type: none"> <li>1. Characteristics of a well-designed and well-conducted survey</li> <li>2. Populations, samples, and random selection</li> <li>3. Sources of bias in sampling and surveys</li> <li>4. Sampling methods, including simple random sampling, stratified random sampling, and cluster sampling</li> </ol>	<ul style="list-style-type: none"> <li>• Identify the population and sample in a statistical study.</li> <li>• Identify voluntary response samples and convenience samples.</li> <li>• Describe how to obtain a random sample using slips of paper, technology, or a table of random digits.</li> <li>• Distinguish a simple random sample from a stratified random sample or cluster sample. Give the advantages and disadvantages of each sampling method.</li> <li>• Explain how voluntary response and convenience sampling methods can lead to bias.</li> <li>• Explain how undercoverage, nonresponse, question wording, and other aspects of a sample survey can lead to bias.</li> </ul>	<p><b>5-6 Days</b></p>

*Textbook Sections:* Ch. 4 Intro., Ch. 4.1

## Second Grading Period (42 Days)

Days

Unit 5 AP Review	Standard(s)	Including, but not limited to...	Days
	<p>I.A Constructing and interpreting graphical displays of distributions of univariate data (dotplot, stemplot, histogram, cumulative frequency plot)</p> <p>I.B Summarizing distributions of univariate data</p> <p>I.C Comparing distributions of univariate data (dotplots, back-to-back stemplots, parallel boxplots)</p> <p>I.D Exploring bivariate data</p> <p>I.E Exploring categorical data</p> <p>II.A Overview of methods of data collection</p> <p>II.B Planning and conducting surveys</p> <p>II.C Planning and conducting experiments</p> <p>II.D Generalizability of results and types of conclusions that can be drawn from observational studies, experiments, and surveys</p> <p>III.A Probability</p> <p>III.B Combining independent random variables</p> <p>III.C The normal distribution</p>	<p><b>See Exploring Data, Modeling Distribution of Data, Describing Relationships, &amp; Designing Studies.</b></p>	<p><b>3 Days</b></p>
<p><i>Textbook Sections: Ch. 1 through Ch. 4</i></p>			

	<b>Standard(s)</b>	<b>Including, but not limited to...</b>	
<b>Unit 6 Designing Studies and Experiments</b>	<p>II. A. Overview of methods of data collection</p> <ol style="list-style-type: none"> <li>3. Experiment</li> <li>4. Observational study</li> </ol> <p>II.C. Planning and conducting experiments</p> <ol style="list-style-type: none"> <li>1. Characteristics of a well-designed and well-conducted experiment</li> <li>2. Treatments, control groups, experimental units, random assignments, and replication</li> <li>3. Sources of bias and confounding, including placebo effect and blinding</li> <li>4. Completely randomized design</li> <li>5. Randomized block design, including matched pairs design</li> </ol> <p>II.D. Generalizability of results and types of conclusions that can be drawn from observational studies, experiments, and surveys</p>	<ul style="list-style-type: none"> <li>• Distinguish between an observational study and an experiment.</li> <li>• Explain the concept of confounding and how it limits the ability to make cause-and-effect conclusion.</li> <li>• Identify the experimental units, explanatory and response variables, and treatments in an experiment.</li> <li>• Explain the purpose of comparison, random assignment, control, and replication in an experiment.</li> <li>• Describe a completely randomized design for an experiment, including how to randomly assign treatments using slips of paper, technology, or a table of random digits.</li> <li>• Describe the placebo effect and the purpose of blinding in an experiment.</li> <li>• Interpret the meaning of statistically significant in the context of an experiment.</li> <li>• Explain the purpose of blocking in an experiment. Describe a randomized block design or a matched pairs design for an experiment.</li> <li>• Describe the scope of inference that is appropriate in a statistical study.</li> </ul>	<b>6-7 Days</b>
	<i>Textbook Sections: Ch. 4.2, Ch. 4.3</i>		
<b>Unit 7 Simulation</b>	<p>III.A. Probability</p> <ol style="list-style-type: none"> <li>1. Interpreting probability, including long-run relative frequency interpretation</li> <li>2. "Law of Large Numbers" concept</li> <li>5. Simulation of random behavior and probability distributions</li> </ol>	<ul style="list-style-type: none"> <li>• Interpret probability as a long-run relative frequency.</li> <li>• Use simulation to model chance behavior.</li> </ul>	<b>4-6 Days</b>
	<i>Textbook Sections: Ch. 5 Intro., Ch. 5.1</i>		
<i>Second grading period's curriculum continued on next page.</i>			

<b>Unit 8 Probability</b>	<b>Standard(s)</b>	<b>Including, but not limited to...</b>	<b>5-6 Days</b>
	III.A Probability 3. Addition rule, multiplication rule, conditional probability and independence  III.B Combining independent random variables 1. Notion of independence versus dependence	<ul style="list-style-type: none"> <li>• Use basic probability rules, including the complement rule and the addition rule for mutually exclusive events.</li> <li>• Use the general addition rule to calculate probabilities.</li> <li>• Calculate and interpret conditional probabilities.</li> <li>• Use the general multiplication rule to calculate probabilities.</li> <li>• Use tree diagrams to model a chance process and calculate probabilities involving two or more events.</li> <li>• When appropriate, use the multiplication rule for independent events to compute probabilities.</li>   <li>• Determine if two events are independent.</li> </ul>	
	<i>Textbook Sections: Ch. 5.2, Ch. 5.3</i>		
<b>Unit 9 Random Variables</b>	<b>Standard(s)</b>	<b>Including, but not limited to...</b>	<b>8-9 Days</b>
	III.A Probability 4. Discrete random variables and their probability distributions, including binomial and geometric  6. Mean (expected value) and standard deviation of a random variable, and linear transformation of a random variable  III.B Combining independent random variables 2. Mean and standard deviation for sums and differences of independent random variables	<ul style="list-style-type: none"> <li>• Compute probabilities using the probability distribution of a discrete random variable.</li> <li>• Determine whether the conditions for using a binomial random variable are met.</li> <li>• Compute and interpret probabilities involving binomial distributions.</li> <li>• Find probabilities involving geometric random variables.</li> <li>• Calculate and interpret the mean (expected value) of a discrete random variable.</li> <li>• Calculate and interpret the standard deviation of a discrete random variable.</li> <li>• Calculate the mean and standard deviation of a binomial random variable. Interpret these values in context.</li> <li>• Calculate the mean of a geometric random variable. Interpret these values in context.</li> <li>• Describe the effects of transforming a random variable by adding or subtracting a constant and multiplying or dividing by a constant.</li>   <li>• Find probabilities involving the sum or difference of independent Normal random variables.</li> <li>• Find the mean and standard deviation of the sum or difference of independent random variables.</li> </ul>	
	<i>Textbook Sections: Ch. 6.1, Ch. 6.2, Ch. 6.3</i>		
<i>Second grading period's curriculum continued on next page.</i>			

Unit 10 AP Review	Standard(s)	Including, but not limited to...	3-4 Days
	<p>I.A Constructing and interpreting graphical displays of distributions of univariate data (dotplot, stemplot, histogram, cumulative frequency plot)</p> <p>I.B Summarizing distributions of univariate data</p> <p>I.C Comparing distributions of univariate data (dotplots, back-to-back stemplots, parallel boxplots)</p> <p>I.D Exploring bivariate data</p> <p>I.E Exploring categorical data</p> <p>II.A Overview of methods of data collection</p> <p>II.B Planning and conducting surveys</p> <p>II.C Planning and conducting experiments</p> <p>II.D Generalizability of results and types of conclusions that can be drawn from observational studies, experiments, and surveys</p> <p>III.A Probability</p> <p>III.B Combining independent random variables</p> <p>III.C The normal distribution</p>	<p><b>See Exploring Data, Modeling Distribution of Data, Describing Relationships, Designing Studies, Probability, &amp; Random Variables.</b></p>	
<i>Textbook Sections:</i> Ch. 1 through Ch. 6			

Third Grading Period (51 Days)		Days
Unit 11 Sampling Distributions	Standard(s)	Including, but not limited to...
	III.D. Sampling distributions <ol style="list-style-type: none"> <li>1. Sampling distribution of a sample proportion</li> <li>2. Sampling distribution of a sample mean</li> <li>3. Central Limit Theorem</li> <li>6. Simulation of sampling distributions</li> </ol>	<ul style="list-style-type: none"> <li>• Simulate sampling distributions using activity.</li> <li>• Find the mean and standard deviation of the sampling distribution of a sample proportion <math>\hat{p}</math>. Check the 10% condition before calculating <math>\sigma_{\hat{p}}</math>.</li> <li>• Determine if the sampling distribution of <math>\hat{p}</math> is approximately Normal.</li> <li>• If appropriate, use a Normal distribution to calculate probabilities involving <math>\hat{p}</math>.</li> <li>• Find the mean and standard deviation of the sampling distribution of a sample mean <math>\bar{x}</math>. Check the 10% condition before calculating <math>\sigma_{\bar{x}}</math>.</li> <li>• Explain how the shape of the sampling distribution of <math>\bar{x}</math> is affected by the shape of the population distribution and the sample size.</li> <li>• If appropriate, use a Normal distribution to calculate probabilities involving <math>\bar{x}</math>.</li> </ul>
<i>Textbook Sections: Ch. 7 Intro., Ch. 7.1, Ch. 7.2, Ch. 7.3</i>		
<i>Third grading period's curriculum continued on next page.</i>		



Standard(s)	Including, but not limited to...	
<p>IV.A. Estimation (point estimators and confidence intervals)</p> <ol style="list-style-type: none"> <li>1. Estimating population parameters and margins of error</li> <li>2. Properties of point estimators, including unbiasedness and variability</li> <li>3. Logic of confidence intervals, meaning of confidence level and confidence intervals, and properties of confidence intervals</li> <li>4. Large sample confidence interval for a proportion</li> <li>6. Confidence interval for a mean</li> </ol> <p>III.D. Sampling distributions</p> <ol style="list-style-type: none"> <li>7. <math>t</math>-distribution</li> </ol>	<ul style="list-style-type: none"> <li>• Determine the point estimate and margin of error from a confidence interval.</li> <li>• Interpret a confidence interval in context.</li> <li>• Interpret a confidence level in context.</li> <li>• Describe how the sample size and confidence level affect the length of a confidence interval.</li> <li>• Explain how practical issues like nonresponse, undercoverage, and response bias can affect the interpretation of a confidence interval.</li> <li>• State and check the Random, 10%, and Large Counts conditions for constructing a confidence interval for a population proportion.</li> <li>• Determine critical values for calculating a <math>C\%</math> confidence interval for a population proportion using a table or technology.</li> <li>• Construct and interpret a confidence interval for a population proportion.</li> <li>• Determine the sample size required to obtain a <math>C\%</math> confidence interval for a population proportion with a specified margin of error.</li> <li>• State and check the Random, 10%, and Normal/ Large Sample conditions for constructing a confidence interval for a population mean.</li> <li>• Explain how the <math>t</math> distributions are different from the standard Normal distribution and why it is necessary to use a <math>t</math> distribution when calculating a confidence interval for a population mean</li> <li>• Determine critical values for calculating a <math>C\%</math> confidence interval for a population mean using a table or technology.</li> <li>• Construct and interpret a confidence interval for a population mean.</li> <li>• Determine the sample size required to obtain a <math>C\%</math> confidence interval for a population mean with a specified margin of error.</li>   <li>• Explain how the <math>t</math> distributions are different from the standard Normal distribution and why it is necessary to use a <math>t</math> distribution when calculating a confidence interval for a population mean.</li> </ul>	<p><b>8-9 Days</b></p>
<p><i>Textbook Sections: Ch.8 Intro., Ch. 8.1, Ch. 8.2, Ch. 8.3</i></p>		
<p><i>Third grading period's curriculum continued on next page.</i></p>		

Standard(s)	Including, but not limited to...	
<p>IV.B. Tests of significance</p> <ol style="list-style-type: none"> <li>1. Logic of significance testing, null and alternative hypotheses; p-values; one- and two-sided tests; concepts of Type I and Type II errors; concept of power</li> <li>2. Large sample test for a proportion</li> <li>4. Test for a mean</li> <li>5. Test for a difference between two means (<del>unpaired and</del> paired)</li> </ol> <p>IV.A Estimation (point estimators and confidence intervals)</p> <ol style="list-style-type: none"> <li>7. Confidence interval for a difference between two means (<del>unpaired and</del> paired)</li> </ol>	<ul style="list-style-type: none"> <li>• State the null and alternative hypotheses for a significance test about a population parameter.</li> <li>• Interpret a P-value in context.</li> <li>• Determine whether the results of a study are statistically significant and make an appropriate conclusion using a significance level.</li> <li>• Interpret a Type I and a Type II error in context and give a consequence of each.</li> <li>• Interpret the power of a test and describe what factors affect the power of a test.</li> <li>• Describe the relationship among the probability of a Type I error (significance level), the probability of a Type II error, and the power of a test.</li> <li>• State and check the Random, 10%, and Large Counts conditions for performing a significance test about a population proportion.</li> <li>• Perform a significance test about a population proportion.</li> <li>• State and check the Random, 10%, and Normal/Large Sample conditions for performing a significance test about a population mean.</li> <li>• Perform a significance test about a population mean.</li> <li>• State and check the Random, 10%, and Normal/Large Sample conditions for performing a significance test about a population mean.</li> <li>• Perform a significance test about a population mean.</li> <li>• Use a confidence interval to draw a conclusion for a two-sided test about a population parameter.</li> </ul>	<p><b>10-11 Days</b></p>
<p><i>Textbook Sections: Ch. 9 Intro., Ch. 9.1, Ch. 9.2, Ch. 9.3</i></p>		
<p><i>Third grading period's curriculum continued on next page.</i></p>		

	<b>Standard(s)</b>	<b>Including, but not limited to...</b>	
<b>Unit 14 AP Review / Project</b>	I.A. Constructing and interpreting graphical displays of distributions of univariate data (dotplot, stemplot, histogram, cumulative frequency plot)	<b>See Exploring Data, Modeling Distribution of Data, Describing Relationships, Designing Studies, Probability, Random Variables, Sampling Distributions, Estimating with Confidence, &amp; Testing a Claim.</b>	<b>4-5 Days</b>
	I.B. Summarizing distributions of univariate data		
	I.C. Comparing distributions of univariate data (dotplots, back-to-back stemplots, parallel boxplots)		
	I.D. Exploring bivariate data		
	I.E. Exploring categorical data		
	II.A Overview of methods of data collection		
	II.B. Planning and conducting surveys		
	II.C. Planning and conducting experiments		
	II.D. Generalizability of results and types of conclusions that can be drawn from observational studies, experiments, and surveys		
	III.A. Probability		
	III.B. Combining independent random variables		
	III.C. The normal distribution		
	III.D. Sampling distributions		
	IV.A. Estimation (point estimators and confidence intervals)		
IV.B. Tests of significance			
<i>Textbook Sections: Ch. 1 to Ch. 9</i>			
<i>Third grading period's curriculum continued on next page.</i>			

Unit 15 Comparing Two Populations or Groups

Standard(s)	Including, but not limited to...	
<p>III.D. Sampling distributions</p> <p>4. Sampling distribution of a difference between two independent sample proportions</p> <p>5. Sampling distribution of a difference between two independent sample means</p> <p>IV.A. Estimation (point estimators and confidence intervals)</p> <p>5. Large sample confidence interval for a difference between two proportions</p> <p>7. Confidence interval for a difference between two means (unpaired and paired)</p> <p>IV.B. Tests of significance</p> <p>3. Large sample test for a difference between two proportions</p> <p>5. Test for a difference between two means (unpaired and paired)</p>	<ul style="list-style-type: none"> <li>• Describe the shape, center, and spread of the sampling distribution of <math>\hat{p}_1 - \hat{p}_2</math>.</li> <li>• Describe the shape, center, and spread of the sampling distribution of <math>\bar{x}_1 - \bar{x}_2</math>.</li> <li>• Construct and interpret a confidence interval to compare two proportions.</li> <li>• Construct and interpret a confidence interval to compare two means.</li> <li>• Determine whether the conditions are met for doing inference about <math>p_1 - p_2</math>.</li> <li>• Perform a significance test to compare two proportions.</li> <li>• Determine whether the conditions are met for doing inference about <math>\mu_1 - \mu_2</math>.</li> <li>• Determine when it is appropriate to use two-sample <math>t</math> procedures versus paired <math>t</math> procedures.</li> <li>• Perform a significance test to compare two means.</li> </ul>	<p><b>10-11 Days</b></p>
<p><i>Textbook Sections: Ch. 10 Intro., Ch. 10.1, Ch. 10.2</i></p>		
<p><i>Third grading period's curriculum continued on next page.</i></p>		

Unit 16 AP Review	Standard(s)	Including, but not limited to...	4-5 Days
	<p>I.A. Constructing and interpreting graphical displays of distributions of univariate data (dotplot, stemplot, histogram, cumulative frequency plot)</p> <p>I.B. Summarizing distributions of univariate data</p> <p>I.C. Comparing distributions of univariate data (dotplots, back-to-back stemplots, parallel boxplots)</p> <p>I.D. Exploring bivariate data</p> <p>I.E. Exploring categorical data</p> <p>II.A. Overview of methods of data collection</p> <p>II.B. Planning and conducting surveys</p> <p>II.C. Planning and conducting experiments</p> <p>II.D. Generalizability of results and types of conclusions that can be drawn from observational studies, experiments, and surveys</p> <p>III.A. Probability</p> <p>III.B. Combining independent random variables</p> <p>III.C. The normal distribution</p> <p>III.D. Sampling distributions</p> <p>IV.A. Estimation (point estimators and confidence intervals)</p> <p>IV.B. Tests of significance</p>	<p><b>See Exploring Data, Modeling Distribution of Data, Describing Relationships, Designing Studies, Probability, Random Variables, Sampling Distributions, Estimating with Confidence, Testing a Claim, and Comparing Two Populations or Groups.</b></p>	
<i>Textbook Sections:</i> Chapter 1 to Chapter 10			

Fourth Grading Period (43 Days)		Days	
Unit 17 Inference for Distribution of Categorical Data	<p><b>Standard(s)</b></p> <p>III.D. Sampling distributions 8. Chi-square distribution</p> <p>IV.B. Tests of significance 6. Chi-square test for goodness of fit, homogeneity of proportions, and independence (one- and two-way tables)</p>	<p><b>Including, but not limited to...</b></p> <ul style="list-style-type: none"> <li>Understand the properties of the Chi-square distribution.</li> <li>State appropriate hypotheses and compute expected counts for a chi-square test for goodness of fit.</li> <li>Calculate the chi-square statistic, degrees of freedom, and P-value for a chi-square test for goodness of fit.</li> <li>Perform a chi-square test for goodness of fit.</li> <li>Conduct a follow-up analysis when the results of a chi-square test are statistically significant.</li> <li>Compare conditional distributions for data in a two-way table.</li> <li>State appropriate hypotheses and compute expected counts for a chi-square test based on data in a two-way table.</li> <li>Calculate the chi-square statistic, degrees of freedom, and P-value for a chi-square test based on data in a two-way table.</li> <li>Perform a chi-square test for homogeneity.</li> <li>Perform a chi-square test for independence.</li> <li>Choose the appropriate chi-square test.</li> </ul>	6-7 Days
	Textbook Sections: Ch. 11 Intro., Ch. 11.1, Ch. 11.2		
Unit 18 More about Regression	<p><b>Standard(s)</b></p> <p>IV.A. Estimation (point estimators and confidence intervals) 8. Confidence interval for the slope of a least-squares regression line</p> <p>IV.B. Tests of significance 7. Test for the slope of a least-squares regression line</p> <p>I.D. Exploring bivariate data 5. Transformations to achieve linearity: logarithmic and power transformations</p>	<p><b>Including, but not limited to...</b></p> <ul style="list-style-type: none"> <li>Interpret the values of <math>a</math>, <math>b</math>, <math>s</math>, <math>SE_b</math>, and <math>r^2</math> in context, and determine these values from computer output.</li> <li>Construct and interpret a confidence interval for the slope <math>b</math> of the population (true) regression line.</li> <li>Check the conditions for performing inference about the slope <math>b</math> of the population (true) regression line.</li> <li>Perform a significance test about the slope <math>b</math> of the population (true) regression line.</li> <li>Use transformations involving powers and roots to find a power model that describes the relationship between two variables, and use the model to make predictions.</li> <li>Use transformations involving logarithms to find a power model or an exponential model that describes the relationship between two variables, and use the model to make predictions.</li> <li>Determine which of several transformations does a better job of producing a linear relationship.</li> </ul>	6-7 Days
	Textbook Sections: Ch. 12. Intro., Ch. 12.1, Ch. 12.2		
Fourth grading period's curriculum continued on next page.			

<b>Unit 19 Mixed Hypothesis Review</b>	<b>Standard(s)</b>	<b>Including, but not limited to...</b>	<b>4-5 Days</b>
	IV.A1 – IV.A8 Estimation (point estimators and confidence intervals) IV.B1 – IV.B7 Tests of significance	<b>See Exploring Data, Modeling Distribution of Data, Describing Relationships, Designing Studies, Probability, Random Variables, Sampling Distributions, Estimating with Confidence, Testing a Claim, Comparing Two Populations or Groups, Inference for Distributions of Categorical Data</b>	
<i>Textbook Sections: Ch 9, 10, 11 and 12</i>			
<b>Unit 20 AP Review</b>	<b>Standard(s)</b>	<b>Including, but not limited to...</b>	<b>9-10 Days</b>
	I.A Constructing and interpreting graphical displays of distributions of univariate data (dotplot, stemplot, histogram, cumulative frequency plot) I.B Summarizing distributions of univariate data I.C Comparing distributions of univariate data (dotplots, back-to-back stemplots, parallel boxplots) I.D Exploring bivariate data I.E Exploring categorical data II.A Overview of methods of data collection II.B Planning and conducting surveys II.C Planning and conducting experiments II.D Generalizability of results and types of conclusions that can be drawn from observational studies, experiments, and surveys III.A Probability III.B Combining independent random variables III.C The normal distribution III.D Sampling distributions IV.A Estimation (point estimators and confidence intervals) IV.B Tests of significance	<b>See Exploring Data, Modeling Distribution of Data, Describing Relationships, Designing Studies, Probability, Random Variables, Sampling Distributions, Estimating with Confidence, Testing a Claim, Comparing Two Populations or Groups, Inference for Distributions of Categorical Data, &amp; More about Regression.</b>	
<i>Textbook Sections: Ch. 1 to Ch. 12</i>			
<b>Unit 21 Spring Project</b>	<b>Standard(s)</b>	<b>Including, but not limited to...</b>	<b>7-8 Days</b>
	<b>Cumulative</b>	<b>Design a study, conduct the study, analyze the data, and make the appropriate inferences.</b>	
<i>Textbook Sections: Chapter 1 to Chapter 12</i>			