

# CCS COURSE MAP

## SUBJECT: STATISTICS

**GRADE LEVEL** 11<sup>th</sup>-12<sup>th</sup> GRADE  
**COURSE LENGTH** SEMESTER

**REVIEWED** 2018-2019

Student Goals:					
		I	To display and analyze data, draw conclusions based on data and graphs, and identify trends and relationships in the data.		
		II	To use statistical thinking to draw inferences and make predictions from a set of data.		
		III	To calculate probabilities and apply them to real-world problems.		
Student Outcomes:					
		I	The students will be able to understand different types of data displays, such as boxplots, and measures of center, such as mean, median, mode, quartile, and percentile.		
		II	The students will be able to use mean and standard deviation of a data set to fit it to a normal distribution, such as a bell curve.		
		III	The students will be able to explain various sampling methods and determine biases in collecting data.		
		IV	The students will be able to identify misleading data.		
		V	The students will be able to calculate experimental probabilities using probability models and relative frequencies.		
		VI	The students will be able to apply probability concepts to real-world situations to make informed decisions.		
UNIT/ WEEKS	STANDARD	OBJECTIVES	ACTIVITIES/ASSESSMENT	RESOURCES	BIBLICAL INTEGRATION
1. Introduction to Statistics 2 weeks	9.4.2.1 9.4.2.2 9.4.2.3	Students will understand basic terminology and principles of statistical thinking.  Students will understand the differences between types of data and learn about collecting sample data.	Classroom discussions/ lecture/demonstration by teacher and students.  In-class work.  Homework  Quiz/test	Elementary Statistics Mario F. Triola © 2010  Scientific Calculator	Students will be able to use mathematics as a tool to explore and manage God's creation and to glorify God, especially for His created order in mathematics.

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		Students will be able to use critical thinking to evaluate data.			
2. Summarizing and graphing data 2 weeks	9.4.1.1 9.4.1.3 9.4.2.1 9.4.2.2 9.4.3.9	Students will be able to summarize and graph data using frequency distributions, histograms, and statistical graphing.  Students will be able to identify bad graphs used to display data.	Classroom discussions/ lecture/demonstration by teacher and students.  In-class work.  Homework  Quiz/test	Elementary Statistics Mario F. Triola © 2010  Scientific Calculator	Students will be able to use mathematics as a tool to explore and manage God's creation and to glorify God, especially for His created order in mathematics.

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<p>3. Statistics for Describing, Exploring, and Comparing Data 2 weeks</p>	<p>9.4.1.1 9.4.1.2</p>	<p>Students will understand and use measures of center and measures of variation.</p> <p>Students will be able to interpret and create boxplots to show measures of relative standing.</p>	<p>Classroom discussions/ lecture/demonstration by teacher and students.</p> <p>In-class work.</p> <p>Homework</p> <p>Quiz/test</p>	<p>Elementary Statistics Mario F. Triola © 2010</p> <p>Scientific Calculator</p>	<p>Students will be able to use mathematics as a tool to explore and manage God's creation and to glorify God, especially for His created order in mathematics.</p>
<p>4. Probability 3 weeks</p>	<p>9.4.3.1 9.4.3.2 9.4.3.3 9.4.3.4 9.4.3.7 9.4.3.8</p>	<p>Students will understand the basic concepts of probability.</p> <p>Students will be able to use the addition rule and multiplication rule for probability.</p> <p>Students will be able to find probabilities through simulations.</p> <p>Students will be able to count the number of possible outcomes in a variety of different situations.</p>	<p>Classroom discussions/ lecture/demonstration by teacher and students.</p> <p>In-class work.</p> <p>Homework</p> <p>Quiz/test</p>	<p>Elementary Statistics Mario F. Triola © 2010</p> <p>Scientific Calculator</p>	<p>Students will be able to use mathematics as a tool to explore and manage God's creation and to glorify God, especially for His created order in mathematics.</p>

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<p>5. Discrete Probability Distributions 2 weeks</p>	<p>9.4.1.1</p>	<p>Students will understand the concept of random variables and how they relate to probability and discrete probability distributions.</p> <p>Students will understand fundamental properties of binomial probability distributions.</p> <p>Students will be able to find, understand and interpret the mean, variance and standard deviation of binomial distributions.</p>	<p>Classroom discussions/ lecture/demonstration by teacher and students.</p> <p>In-class work.</p> <p>Homework</p> <p>Quiz/test</p>	<p>Elementary Statistics Mario F. Triola © 2010</p> <p>Scientific Calculator</p>	<p>Students will be able to use mathematics as a tool to explore and manage God’s creation and to glorify God, especially for His created order in mathematics.</p>
<p>6. Normal Probability Distributions 3 weeks</p>	<p>9.4.1.4</p>	<p>Students will be able to find areas/probabilities/ relative frequencies corresponding to various regions under the graph of the standard and nonstandard normal distributions.</p> <p>Students will be able to find z-scores that correspond to areas under a normal distribution graph.</p>	<p>Classroom discussions/ lecture/demonstration by teacher and students.</p> <p>In-class work.</p> <p>Homework</p> <p>Quiz/test</p>	<p>Elementary Statistics Mario F. Triola © 2010</p> <p>Scientific Calculator</p>	<p>Students will be able to use mathematics as a tool to explore and manage God’s creation and to glorify God, especially for His created order in mathematics.</p>

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		<p>Students will be able to apply probabilities and z-scores of normal distributions.</p> <p>Students will be able to understand and apply the concept of sampling distributions of a statistic.</p> <p>Students will be able to apply the Central Limit Theorem.</p>			

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