## Statistics (NC) MAT 430 Resource(s) used: Primary: Unlocking The Power of Data by Lock, Lock, Lock, Lock and Lock

This course includes a study of the basic terminology and methods of elementary statistics including organization of data, measures of central tendency and dispersion, sampling theory, estimation and testing of hypotheses. This course also includes an introduction to correlation and linear regression. A class period of instruction consists of 38 minutes each day, five days a week for a length of 40 weeks.

Final Assessment: Can be an exam or project (Teacher Discretion)

## **Course Syllabus**

Lesson	Topic(s)
0.1	Sample Spaces
0.2	Simple Probability
0.3	Probability involving "and" and "or"
0.4	Permutations and Combinations
0.5	Probability involving "exactly, "at least" and "at most"
1.1	The structure of Data
1.2	Sampling from a Population
1.3	Experiments and Observational Studies
2.1	Categorical Variables
2.2	One Quantitative Variable: Shape and Center
2.3	One Quantitative Variable: Measures of Spread
2.4	Outliers, Boxplots and Quantitative Categorical Relationships
2.5	Two Quantitative Variables: Scatterplot and Correlation
2.6	Two Quantitative Variables: Linear Regression
3.1	Sampling Distributions
3.2	Understanding and Interpreting Confidence
3.3	Constructing Bootstrap Confidence Intervals
3.4	Bootstrap Confidence Intervals using Percentiles
4.1	Introducing Hypothesis Tests
4.2	Measuring Evidence with P-values

4.3	Determining Statistical Significance
4.4	Creating Randomization Distributions
4.5	Confidence Intervals and Hypothesis Tests
5.1	Normal Distributions
5.2	Confidence Intervals and P-values Using Normal Distributions
6.1	Distribution of a Sample Proportion
6.2	Confidence Interval for a Single Proportion
6.3	Test for a Single Proportion
6.4	Distribution of a Sample Mean
6.5	Confidence Interval for a Single Mean
6.6	Test for a Single Mean