

Martin Luther High School  
Statistics  
2018 - 2019  
Mr. Taylor

Class Room Rules

1. Follow all rules as printed in the student handbook.
2. The student will be in their seat when the bell rings.
3. It is the student's responsibility to take proper care of the equipment issued to them. Books will be covered.
4. Homework is to be turned in on its given due date at the beginning of class (when I ask for it). If for some reason you are unable to turn in your homework on time, then it will be docked 50% of the grade for that day. If it is two days late, then it loses the other half of the value bringing it down to a 0%. If, however, you have most of your assignment finished but had trouble with a certain section you will be allowed to turn it in as long as you finish it before the end of the school day. (I will verify that you do indeed have most of it finished.) It is in your best interest to do your homework and turn it in on time. If you do not do your homework, don't bother asking for extra credit.
5. If you are absent, you will be allowed as many days that you were absent to make up the work that was missed. Tests, however, will be made up on the day that you return unless you were absent prior to the announcement of the test. Quizzes will be made up as soon as you complete the work covered on the quiz. If you were absent it is your responsibility to get any assignments that were missed.
6. The student will respect all others as fellow human beings created by God. Put downs will not be tolerated.
7. Homework is to be done in pencil and work is to be shown. Failure to show your work will result in loss of points. Each assignment is worth 30 points. If you are between a 29.5 and a 30 but did not show your work you will get a 29.5. **I absolutely will not accept homework done in pen** unless you need to use pen to show a comparison.
8. Anytime the book says to graph you will accurately graph that problem on **GRAPH PAPER**. (It will make your work easier to read.)
9. Test corrections must be completed before next test is given.

Consequences for the Violation of Rules

Depending on severity. Students are subject to detention, parental phone call, an unexcused absence (and a zero for the day) and class suspension.

Grading

Each quarter grade will count as 40% of your semester grade and the final will count as 20% of your semester grade. In order to receive credit for the semester the student must pass at least two of the three grading units. For example they must pass both quarters or a quarter and a final.

Each quarter is made up of the following:

Chapter tests / Mid Chapter Tests	100 points each
Test Corrections	30 points each (Must be completed before next test)
Homework	30 points each

Your grade is then calculated with the following equation. **Points earned / points possible.**

Materials to Bring

1. Textbook
2. Pencil and a Pen
3. Paper (including graph paper)
4. Notebook / Folder
5. TI-84 Graphing Calculator

# STATISTICS

## COURSE DESCRIPTION

This course is designed to give a working knowledge of the big issues of statistics and of the methods used in solving statistical problems. Students will become familiar with the terms, notation, formulas, and tables of statistics as well as analyzing data, modeling and sampling distributions, designing studies, the probability of statistics, random variables, estimating with confidence, testing a claim, comparing populations, and regression. A scientific calculator is required for this course.

## COURSE OBJECTIVES

1. Grow in their faith in Jesus Christ
2. Be able to identify Center and Spread, Clusters, Gaps, Outliers and Shape
3. Be able to find the measures of Median, Mode, Standard Deviation, Percentiles, the 5 number summary, and z-scores
4. Be able to make Box-plots, Bar graphs, Scatter-plots, Density Curves.
5. Be able to find a least square regression line and determine if it is a good model by finding the correlation between two variables.
6. Be able to conduct a good random sample survey that avoids bias.
7. Be able to calculate the Probability that goes with samples and simulate them.
8. Know the difference between Discrete and Continuous Random Variables.
9. Know how transformations affect Random Variables and Distributions.
10. Estimate a Population Proportion and Mean with Confidence
11. Be able to test a claim about a population and its mean.
12. Be able to statistically compare two populations or groups
13. Be able to run statistical tests for inference.

## COURSE OUTLINE

### Assignment Key

ITF Integrating the Faith  
RC Reading Comprehension  
TEC Technology

- |      |  |              |
|------|--|--------------|
| I.   | Exploring Data                               | ITF, RC, TEC |
|      | A. Analyzing Categorical Data                |              |
|      | B. Displaying Quantitative Data              |              |
|      | C. Describing Quantitative Data with Numbers |              |
| II.  | Modeling Distributions of Data               | ITF, RC, TEC |
|      | A. Describing Location in a Distribution     |              |
|      | B. Density Curves                            |              |
|      | C. Normal Distributions                      |              |
| III. | Describing Relationships                     | ITF, RC, TEC |
|      | A. Scatter-plots and Correlation             |              |
|      | B. Least-Squares Regression                  |              |
| IV.  | Designing Studies                            | ITF, RC, TEC |
|      | A. Sampling and Surveys                      |              |
|      | B. Experiments                               |              |
|      | C. Using Studies Wisely                      |              |

- |       |   |              |
|-------|---|--------------|
| V.    | Probability<br>A. Randomness<br>B. Simulation<br>C. Rules<br>D. Conditional Probability<br>E. Independence                    | ITF, RC, TEC |
| VI.   | Random Variables<br>A. Discrete<br>B. Continuous<br>C. Transformations<br>D. Combining<br>E. Binomial<br>F. Geometric         | ITF, RC, TEC |
| VII.  | Sampling Distributions<br>A. Definition<br>B. Proportions<br>C. Means   | ITF, RC, TEC |
| VIII. | Estimating With Confidence<br>A. Interval Basics<br>B. Population Proportion<br>C. Population Mean                            | ITF, RC, TEC |
| IX.   | Testing a Claim<br>A. Significance<br>B. Population<br>C. Mean  | ITF, RC, TEC |
| X.    | Comparing Two Populations or Groups<br>A. Proportions<br>B. Means   | ITF, RC, TEC |
| XI.   | Inference for Distributions of Categorical Data<br>A. Chi-Square Tests for Goodness of Fit<br>B. Inference for Two-Way Tables | ITF, RC, TEC |
| XII.  | Regression<br>A. Inference for Linear Regression<br>B. Transforming to Achieve Linearity<br>C. Partial Sums                   | ITF, RC, TEC |

## RESOURCES

The Practice of Statistics by Josh Tabor, W.H. Freeman and Company, 2014.