Course: **Math 200**
Prerequisite Course: **Math 120**

Goal: Course Description:
This course presents the basic concepts underlying statistical methods and covers descriptive statistics, probability, probability distributions, hypothesis testing, estimates and sample sizes, correlation and regression, chi-square tests, analysis of variance, and nonparametric statistics. Computer analysis of statistical data is integrated into the course. Applications of statistics to business, life sciences and other areas are included.

Course Objectives:

- **Construct a frequency table and draw a histogram.**
- **Draw a stem plot and a box plot.**
- **Calculate the mean, median, mode, midrange, standard deviation, variance and range.**
- **Calculate the mean, standard deviation, and variance.**
- **Describe the 68-95-99.7 rule, the range rule of thumb, and Chebyshev's Theorem.**
- **Distinguish among the shapes of different histograms.**
- **Calculate z-scores, percentiles, deciles, and quartiles.**
- **Demonstrate the basic rules of probability.**
- **Apply the addition rule, the multiplication rule, and the conditional probability rule to simple probability problems.**
- **Construct a confidence interval for a mean (large and small sample size), a proportion, and a standard deviation or variance.**
- **Conduct a hypothesis test for a claim about one mean (large or small sample size), one proportion, and one standard deviation or variance.**
- **Conduct a hypothesis test for a claim about two independent means (large or small sample sizes).**
- **Conduct a hypothesis test for a claim about two dependent means (before/after test).**
- **Conduct a hypothesis test for a claim about two proportions.**
- **Conduct a hypothesis test for a claim about two standard deviations or variances.**
- **Conduct a hypothesis test for goodness of fit.**
- **Conduct a chi-square test for independence.**
- **Determine whether or not there is linear correlation.**
- **Determine the equation for and plot a regression line.**
- **Calculate the coefficient of determination and construct a prediction interval.**
- **Conduct a hypothesis test using one-way Analysis of Variance techniques.**

Course Outcomes:
By the end of this course, students will be able to

Knowledge and concepts they will have as a result of this course.	
Skills or performance ability as a result of this course.	
Attitudes or values developed as a result of this course.	

Ray's Class Objectives

At the and of the semester, students will be able to

- **define key statistical terms**
- **use technology (TI-83/TI-84 calculators) to**
    - **compute statistics**
    - **solve inferential statistics problems**
- **perform various hypothesis tests given an applied problem**
- **perform basic statistical research in groups**