

**Welcome to Elementary Statistics.** I will be your instructor for Math 16.

Familiarize yourself with this “green sheet” (syllabus), the schedule, and the final project for this course. The schedule includes homework from the text. I will expect you to have attempted some of the problems and to have read the text before class; (you don’t have to understand it). During class, I will go over key points, do examples, and help with any difficulties you encountered with the concepts or problems.

**Homework:** To get full credit for homework, you must do at least 4 problems from each assigned section. But remember that the less you understand the more problems you should do! If you need it, get help from me, your classmates, or the Math Learning Center. A homework grade of 0, 1 (for missing work), or 2 will be assigned for each week’s homework based on your effort, not the answers. Clearly label each section and problem (from the book), show all your steps, and be neat & organized.

**Tests & Quizzes:** There are 16 weeks of instruction during the semester. Each Tuesday (with a couple of exceptions) there will be a 25-minute quiz or 50-minute test. Instead of a final exam, a final project is due Wednesday, December 14, at 8 a.m., in BMC 104.

**Web pages:** Class site for registered students (**you must initialize your logon/access at the library**): <http://mympc.mpc.edu/sites/classes/20117639/default.aspx> has course information, course documents, and current scores after weekly work is graded. My MPC faculty web site (go to “Faculty & Staff” from the MPC home page, then click on my name) has general information: <http://www.mpc.edu/FacultyStaff/JohnHaussermann/Pages/JohnHaussermann.aspx>

**Office Hours:** by arrangement before class, in the classroom; I also encourage you to take advantage of the Math Learning Center (to get help from other instructors and tutors). The Math Learning Center is in BMC 103. A schedule should be posted outside BMC 103 (and in math classrooms). You will need a referral form, from me, that I will hand out on the first day.

**Text:** (A Brief Version) Elementary Statistics, A Step by Step Approach, Bluman. You may use the 4<sup>th</sup> or 5<sup>th</sup> edition.

**Calculator Policy:** For this course you must have a calculator: the TI 83+, the TI 84+, or the TI 89 Titanium. You may borrow a TI 83+ from the math department – let me know if you’re interested; (you’re responsible for batteries).

**Grades will be based on:** homework (30 points), quizzes (60 points), tests (40 points), and the final project (20 points). There are 150 total points possible. An A is 90% or better, a B is 80% or better, a C is 70% or better, a D is 60% or better, and below 60% is an F. Late homework and missed tests & quizzes will be scored 0, unless you have made arrangements with me. There is no extra credit.

**Contact me** as soon as possible if you are going to miss a graded assignment (preferably before): text message (831) 869-9031; email [jhaussermann@yahoo.com](mailto:jhaussermann@yahoo.com).

**Be on time.** Instruction starts at 8 a.m. **Except on test/quiz days, attendance is not mandatory.** If you’re going to be late then don’t come. The door will be closed & locked at 8:01 a.m. and no one will be

allowed in after that time, unless a quiz or test is in progress. If you leave during class, you won't be able to get back in, so plan accordingly. Remember to silence your cell phone.

**More Resources:** There is a DVD set on reserve in the Library: it shows homework problems being worked out by instructors. There are 'concept' files in MS Excel on the class web site which illustrate different ideas. Sometimes there is a statistics tutor available in the (Library) Tutoring Center.

**Prerequisite:** Algebra II (Math 263) is a prerequisite for this course. In particular, you will need to understand and be able to work with: fractions, percent, decimals, squares, square roots, summation notation ( $\Sigma$ ), factorials ( $n!$ ), and lines.

**Objectives:**

1. Describe and represent data graphically and numerically.
2. Demonstrate a basic knowledge of probability theory, identify and calculate probabilities using discrete and continuous distributions.
3. Make inferences about population parameters based on sample statistics.

• This course will cover the following topics (not necessarily in this order):

Organization of Data:	Confidence Intervals for $\sigma$ , $\sigma^2$
Population, Sample and Variable	Confidence Intervals for $p$
Frequency Distributions	Determining Sample Size
Graphs and Charts	Estimation: Two Populations
Numerical Descriptive Measure:	Confidence Intervals for the Difference of Two Means (large and small samples, $\sigma$ known and unknown)
Measures of Central Tendency	Confidence Interval for the Mean of the Differences (paired data)
Comparison of Mean, Median, Mode	Confidence Interval for the Difference of Two Proportions
Measures of Dispersion	Hypothesis Testing
Mean, Standard Deviation and Variance for Grouped Data	Hypothesis Tests about $\mu$ (large and small samples, $\sigma$ known and unknown)
Measure of Position ( $Q_1$ and $Q_3$ )	Hypothesis Tests about $\sigma$ , $p$
Probability:	Hypothesis Tests about the Difference of Two Means (large and small samples, $\sigma$ known and unknown)
Sample Space, Events	Hypothesis Tests about the Mean of the Differences (paired data)
Counting Techniques (Counting Rule, Combinations and Permutations)	Hypothesis Tests about the Difference of Two Proportions
Union of Events and the Addition Rule	Linear Regression and Linear Correlation:
Intersection of Events and the Multiplication Rule	Correlation hypotheses
Mutually Exclusive Events	Coefficient of Determination
Conditional Probability and Independent Events	Linear regression calculations
Discrete Probability Distributions:	Chi-Squared ( $\chi^2$ ) and $F$ -Distribution Tests
Random Variables	Goodness of Fit
Discrete Random Variables	Test for Independence & Homogeneity
Binomial Distribution	One Way Analysis of Variance: (hypothesis tests about the equality of 3 or more means)
Continuous Probability Distributions:	
Continuous Random Variables	
The Normal Distribution	
The Normal Approximation of the Binomial	
Estimations: Single Population	
Confidence Intervals for $\mu$ (large and small samples, $\mu$ known and unknown)	