

SU DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
 SYLLABUS (*Tentative*)
 MATH 213 *Statistical Thinking*

- INTENDED FOR:** Students majoring in mathematics or other sciences. **Credit may not be received for more than one: MATH 151, 155 or 213.**
- OBJECTIVES:** To introduce the concepts of descriptive and inferential statistics by way of both nonparametric and the classical parametric methods.
- PREREQUISITE:** MATH 160 or MATH 201 (may be taken concurrently).
- COREQUISITE:** Concurrent registration with lab is required.
- TEXTBOOK:** "Statistics," by McClave & Sincich; Prentice-Hall, Eleventh Edition, 2009.
- TECHNOLOGY:** THIS COURSE IS COMPUTER DEPENDENT. MINITAB will be used throughout the course.

	<i>Weeks</i>
Chapters 1,2 <i>Data, Data Collection, Methods for Describing Data Sets</i> Graphical methods, measures of central tendency, variation, and relative standing, Chebyshev's Rule, Box plots, bivariate relationships	1.5
Chapter 3 <i>Probability</i> Properties of probability, conditional probability, independence, Bayes Theorem	1.0
Chapter 4 <i>Discrete Random Variables</i> Probability distribution functions, expected value, Binomial, Hypergeometric, and Poisson	1.0
Chapter 5 <i>Continuous Random Variables</i> Uniform, Normal, and Exponential. Descriptive methods for assessing normality, normal approximation to the binomial	1.5
Chapter 6 <i>Sampling Distributions and Central Limit Theorem</i> Estimators, unbiased, minimum variance, Central Limit Theorem	1.0
Chapter 7 <i>Estimation (One Sample)</i> Confidence intervals for means, proportions, sample size	1.0
Chapters 8, 14 <i>Tests of Hypothesis (One Sample)</i> Tests for means, sign test, Wilcoxon signed rank test, tests for proportions, Type I and Type II error, power	2.0
Chapters 9, 14 <i>Confidence Intervals & Tests of Hypotheses (Two Samples: Paired & Independent)</i> Paired: t, Wilcoxon signed rank, sign; Independent: z, t, Mann-Whitney (Wilcoxon Rank Sum)	1.5
Chapter 11 <i>Simple Linear Regression</i> Least squares, inferences about the slope, estimation and prediction	1.5
<i>Selected Topics From:</i>	1.0
Chapter 10 - One-way Analysis of Variance or Chapter 13 -Chi-Square Tests <i>Tests</i>	1.0

EVALUATION

Homework and quizzes	20%
Tests	55%
Final Exam	25%

Free tutoring is available for this course in the Spring and Fall semesters.

Writing Across the Curriculum: This course is in full support of the emphasis on this campus to give the students every opportunity to reinforce their skills in writing. Instructors will expect students to clearly communicate conclusions and thinking processes in written work.