

MATH 245 STATISTICS FOR MIDDLE SCHOOL TEACHERS

Course description: Descriptive statistics for one and two variables, sample spaces and probability rules, discrete and continuous probability models, use of simulation to compute probabilities.

Prerequisite: C or better in MATH 126 or MATH 131.

Text: Albert, J, Data Analysis and Probability for Teachers, to be published by Key College Publishing, Fall 2006.

Basic Description: This is a class on topics in data analysis and probability for prospective and in-service Middle School teachers. The National Council of Teachers in Mathematics (NCTM) has recently established standards in data analysis and probability to be taught to all students from grades K-12. This text is designed to teach the prospective teachers basic concepts in probability and statistics so they have the background to teach the content listed in the NCTM standards. The basic concepts in data analysis and probability will be taught by means of discovery and group interaction on directed activities, both of the hands-on and technology varieties. Technology is implemented by means of the software Fathom, Tinkerplots and the TI 84-Plus graphing calculator.

List of Topics:

Topic D1: Statistics, Data, and Variables

Topic D2: Graphing Data

Topic D3: Summaries for Data

Topic D4: Comparing Batches and Relative Standing

Topic D5: An Introduction to Relationships

Topic D6: Relationships -- Summarizing by a Correlation and a Line

Topic D7: Relationships Between Categorical Variables

Topic P1: Probability: A Measures of Uncertainty

Topic P2: Sample Space

Topic P3: Counting Methods

Topic P4: Computing Probabilities by Simulation

Topic P5: Conditional Probability

Topic P6: Probability Distributions

Topic P7: Coin-Tossing Distributions

Topic P9: The Normal Distribution