

**I. COURSE INFORMATION**

- A. Mathematics 115 Elementary Statistics
- B. 3 credit hours
- C. Triola, Mario. *Elementary Statistics*. 14<sup>th</sup> ed. New Jersey: Pearson, 2022
- D. Prerequisites: MAT 105 or MAT 106 or MAT 120 or high school equivalents with a grade of C or above, or ACT Math score of 22 or above, or with instructor's consent.
- E. KRSN: MAT 1020 Elementary Statistics

The learning outcomes and competencies detailed in this course outline or syllabus meet or exceed the learning outcomes and competencies specified by the Kansas Core Outcomes Groups project for this course as approved by the Kansas Board of Regents.

**II. COURSE DESCRIPTION**

This course includes basic concepts of probability and statistics. The course covers measure of central tendency and variation, discrete and continuous distributions, sampling, confidence intervals, hypothesis tests, regression and correlation.

**III. LEARNING OUTCOMES**

- A. Create graphical and numerical descriptions of quantitative and qualitative data
- B. Calculate probabilities and percentiles related to a general normal distribution
- C. Distinguish differences in data analysis and interpretation between observational data and data from designed experiments
- D. Calculate and interpret a confidence interval for a single parameter, using both large and small samples
- E. Perform and interpret a test of hypotheses for a single parameter, using both large and small samples
- F. Perform and interpret statistical inference on the difference of two parameters
- G. Fit and interpret a simple linear regression model, including correlation and scatterplots

**IV. MAJOR CONTENT AREAS**

- A. Summarizing and graphing data
- B. Finding measures of center and variation
- C. Applying simple probability rules
- D. Discrete probability distributions
- E. Normal probability distributions
- F. Confident intervals for proportion, mean and variance
- G. Hypothesis testing proportion, mean and variance
- H. Correlation and regression

**V. ASSIGNMENTS (may include but are not limited to)**

- A. Reading assignments
- B. Homework
- C. Computer assignments
- D. Projects
- E. Quizzes and exams

**VI. EVALUATION METHODS (may include but are not limited to)**

- A. Attendance and participation
- B. Assignments
- C. Projects
- D. Quizzes and exams
- E. Comprehensive final