

**SOUTHEAST COMMUNITY COLLEGE  
DIVISION OF ARTS AND SCIENCES**

**Mathematics**

**Revision Date: 07-01-26**

**I. CATALOG DESCRIPTION**

Course Number: BSAD2170 or MATH2170  
Course Title: Applied Statistics  
Prerequisite(s): A grade of C or higher in MATH 1100, C or higher in MATH 1105, or an appropriate math placement score  
Catalog Description: The course is an introduction to basic probability and statistical methods that are used in a wide variety of disciplines. Topics include descriptive statistics, probability foundations, probability distributions, sampling distributions, methods of statistical inference, and bivariate relationships.  
Credit Hours: 3.0  
Class Hours: 45  
Lab Hours: 0  
Contact Hours: 45

**II. COURSE OBJECTIVES:** *Course will:*

- A. Develop student awareness of various sampling methods.
- B. Examine methods of gathering, organizing, and summarizing data.
- C. Investigate and illustrate measures of central tendency, dispersion, and position.
- D. Demonstrate the application of probability and probability distributions.
- E. Introduce and analyze sampling distributions and their application.
- F. Examine inferential statistics through confidence intervals and hypothesis testing.
- G. Develop analysis and presentation of bivariate data.

**III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES**

- A. Student Learning Outcomes: *Student will be able to:*
  - 1. Use technology to perform statistical calculations and create pictorial displays of data.
  - 2. Differentiate between appropriate and inappropriate sampling methods.
  - 3. Distinguish between sample statistics and population parameters.
  - 4. Classify data as quantitative or categorical/qualitative.
  - 5. Construct and interpret frequency distributions, histograms, and other methods of organizing data.
  - 6. Calculate and interpret measures of central tendency.
  - 7. Calculate and interpret measures of dispersion.
  - 8. Calculate and interpret measures of position.
  - 9. Utilize appropriate probability procedures.
  - 10. Apply various probability distributions to find probabilities and identify unusual outcomes.
  - 11. Apply the concepts of the Central Limit Theorem.
  - 12. Distinguish between the distribution of a data set and a sampling distribution.
  - 13. Use sample data to estimate parameters by calculating and interpreting confidence intervals.
  - 14. Use sample data to test statistical hypotheses about parameters.
  - 15. Interpret the relationship between two variables using linear correlation coefficients.
  - 16. Draw inferences and make predictions from linear regression equations when appropriate.

- B. General Education Learning Outcomes
  - 1. GELO #5: Analytical, Quantitative, and Scientific Reasoning
    - Outcome: Apply mathematical and scientific methods to solve problems from an array of contexts and everyday situations.
    - Outcome: Understand and create logical arguments supported by quantitative and scientific evidence and communicate those arguments in a variety of formats.
    - Outcome: Effectively develop strategies, algorithms, or experiments (or performing experiments) to better describe the systems or to solve the problems.
    - Outcome: Manipulate formulas, data sets, graphs, tables, etc. in a way to produce a meaningful outcome.

**IV. CONTENT/TOPICAL OUTLINE (*course outline may provide more detailed information*)**

- A. Sampling methods.
- B. Gather, organize, and summarize data.
- C. Measures of central tendency, dispersion, and position.
- D. Probability and probability distributions.
- E. Sampling distributions.
- F. Confidence intervals and hypothesis testing.
- G. Bivariate data.

**V. INSTRUCTIONAL MATERIALS**

- A. Required Text(s):
  - 1. Triola, M., *Essentials of Statistics*, 7<sup>th</sup> Edition, Pearson, 2022.

**VI. METHODS OF PRESENTATION/INSTRUCTION**

- A. Methods of presentation typically include a combination of the following:
  - 1. Lecture
  - 2. Discovery learning
  - 3. Small group exploration and discussion
  - 4. Technology applications
  - 5. In-class activities
  - 6. Collaborative projects

**VII. METHODS OF EVALUATION**

- A. Methods of evaluation typically include a combination of the following:
  - 1. Course grades, at the determination of the instructor, will be based on class and group participation, daily work, exams, presentations, projects, papers, and/or a portfolio.
  - 2. Instructor will distribute and discuss the evaluation process and grading policies with students at the beginning of the term.

**B. SCC GRADING SCALE**

A+	95-100	C+	75-79	F	59 or less
A	90-94	C	70-74		
B+	85-89	D+	65-69		
B	80-84	D	60-64		

**VIII. SPECIFIC COURSE REQUIREMENTS**

- A. Scientific or graphing calculator required.