Syllabus
MATH/
BSAD 2170
Applied Statistics
2025

Committee Members:

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Facilitator: Eric Smith

The Institution agrees to the contents in this syllabus including course prefix, number, course description and other contents of this syllabus.

	11/26/2024	Adopt
Chief Academic Officer, Central Community College		
Theresa Billiot	11/13/2024	Adopt
Chief Academic Officer, Little Priest Tribal College		
Tom McDonnell	11/13/2024	Decline
Chief Academic Officer, Metropolitan Community College		
Jody Tomanek	11/12/2024	Adopt
Chief Academic Officer, Mid-Plains Community College		
Kristine Sibbitt	11/26/2024	Adopt
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Charlene Widener	11/15/2024	Adopt
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Joel Michaelis	11/13/2024	Adopt
Chief Academic Officer, Southeast Community College		
Grant Wilson	11/12/2024	Adopt
Chief Academic Officer, Western Nebraska Community College		

I. CATALOG DESCRIPTION

Course Number: MATH2170 or BSAD2170
Course Title: Applied Statistics
Prerequisite(s): Intermediate Algebra or Institutional Placement Protocol

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 semester or 4.5 quarter
Contact Hours: 45

II. COURSE OBJECTIVES / COMPETENCIES

Course will:

1. Utilize statistical terminology and notation.
2. Examine methods of sampling, organizing, and summarizing data.
3. Investigate measures of central tendency, dispersion, and position.
4. Demonstrate the application of probability and probability distributions.
5. Analyze sampling distributions and their application.
6. Examine inferential statistics through confidence intervals and hypothesis testing.
7. Explore concepts of bivariate data.

III. STUDENT LEARNING OUTCOMES

Students will be able to:

1. Perform statistical calculations and create graphical displays of data.
2. Differentiate between appropriate and inappropriate statistical methods.
3. Classify data using appropriate statistical terminology.
4. Interpret measures of central tendency, dispersion, and position.
5. Determine probabilities using various probability distributions.
6. Apply the concepts of the Central Limit Theorem.
7. Use sample data to estimate parameters by calculating and interpreting confidence intervals.
8. Use sample data to test statistical hypotheses about parameters.
9. Construct inferences and predictions using linear regression.

IV. COURSE CONTENT / TOPICAL OUTLINE

1. Sampling methods.
2. Data exploration.
3. Measures of central tendency, dispersion, and position.
4. Probability and probability distributions.
5. Sampling distributions.

6. Confidence intervals and hypothesis testing.
7. Bivariate data.
8. Technology applications.

V. INSTRUCTIONAL MATERIALS

A. Required Text(s) Suggested

1. Triola, M., Essentials of Statistics, 7th edition (or later), Pearson, 2022
2. Triola, M., Elementary Statistics, 13th edition (or later), Pearson, 2018
3. Larson and Farber, Elementary Statistics – Picturing the World, 7th edition (or later), Pearson, 2018
4. De Veaux, Velleman, and Bock, Intro Stats, 6th edition (or later), Pearson, 2022
5. Dana Center, University of Texas-Austin, Statistical Reasoning, 2nd edition (or later), Lumen, 2022
6. Bluman, Allan, Elementary Statistics – A Step By Step Approach, 8th edition (or later), McGraw Hill, 2019
7. Introductory Statistics – OpenStax
8. Warren, Denley, & Atchley, Beginning Statistics, 3rd edition (or later), Hawkes Learning Systems, 2021
9. Weiss, Introductory Statistics, 10th edition (or later), Pearson, 2020

B. Suggested Technology Applications

1. TI-84 Calculator
2. Excel
3. Pearson StatCrunch
4. Rossman-Chance Applets
5. Dana Center Data Analysis Tools

VI. METHOD OF PRESENTATION / INSTRUCTION

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

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.

VIII. INSTITUTIONAL DEFINED SECTION