

Syllabus

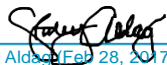
MATH2170 OR BSAD2170

APPLIED STATISTICS

2016

Committee Members:

Patricia Marquis, Central Community College
No Representative, Little Priest Tribal College
Mel Mays, Metropolitan Community College
Lynn Salyer, Mid-Plains Community College
No Representative, Nebraska Indian College
Stacey Aldag, Northeast Community College
Eric Smith, Southeast Community College
Laurie Alkire, Western Nebraska Community College



Stacey Aldag (Feb 28, 2017)

Facilitator

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

Deborah Brennan

Deborah Brennan (Feb 27, 2017)

Chief Academic Officer, Central Community College

adopt

Betty Red Leaf Collett

Betty Red Leaf Collett (Mar 20, 2017)

Chief Academic Officer, Little Priest Tribal College

Decline

Thomas J McDonnell

Thomas J McDonnell (Feb 24, 2017)

Chief Academic Officer, Metropolitan Community College

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Jody Tomanek

Jody Tomanek (Feb 23, 2017)

Chief Academic Officer, Mid-Plains Community College

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Leland Henke

Leland Henke (Feb 23, 2017)

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John Blaylock

John Blaylock (Feb 23, 2017)

Chief Academic Officer, Northeast Community College

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Dennis Headrick

Dennis Headrick (Feb 23, 2017)

Chief Academic Officer, Southeast Community College

Adopt

Kim Kuster Dale

Kim Kuster Dale (Feb 28, 2017)

Chief Academic Officer, Western Nebraska Community College

Adopt

I. CATALOG DESCRIPTION

Course Number: MATH2170 or BSAD2170

Course Title: Applied Statistics

Prerequisite(s): Intermediate Algebra or equivalent test 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 semester or 4.5 quarter

Contact Hours: 45

II. COURSE OBJECTIVES AND COMPETENCIES

Course will:

1. Develop student awareness of various sampling methods.
2. Examine methods of gathering, organizing, and summarizing data.
3. Investigate and illustrate measures of central tendency, dispersion, and position.
4. Demonstrate the application of probability and probability distributions.
5. Introduce and analyze sampling distributions and their application.
6. Examine inferential statistics through confidence intervals and hypothesis testing.
7. Develop analysis and presentation of bivariate data.

III. STUDENT LEARNING OUTCOMES:

Students will:

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

IV. COURSE CONTENT / TOPICAL OUTLINE

1. Sampling methods.
2. Gather, organize, and summarize data.
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.

V. INSTRUCTIONAL MATERIALS

A. Required Text(s) Suggested

1. Triola, M., *Essentials of Statistics*, 5th edition (or later), Pearson, 2014
2. Triola, M., *Elementary Statistics*, 12th edition (or later), Pearson, 2012
3. Larson and Farber, *Elementary Statistics – Picturing the World*, 6th edition (or later), Pearson, 2014
4. De Veaux, Velleman, and Bock, *Intro Stats*, 4th edition (or later), Pearson, 2014
5. Dana Center, University of Texas-Austin, *Statistical Reasoning*, 1st edition (or later), Pearson, 2015

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

To be used at the discretion of each community college as deemed necessary