

COCONINO COMMUNITY COLLEGE
COURSE OUTLINE

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General Education Criteria Reviewed by: Kate Kozak
General Education Outcomes reviewed by: Kate Kozak
Revised by: Kathryn Kozak
Revised by: Kathryn Kozak
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December 4, 1991
January 19, 1999
January 19, 1999
April 02, 2001
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A. Course Identification:

1. Subject Area: Math (MAT)
2. Course Number: 160 SUN# MAT 1160
3. Course Title: Introduction to Statistics
4. Credit Hours: 3
5. Course Description: Statistical tools and techniques used in research and general applications. Includes descriptive statistics, probability and probability distributions, point and interval estimates of population parameters, hypothesis testing, and correlation and regression. Prerequisite: MAT 140 or placement beyond prerequisite course. General Education: Mathematics. Three lecture.

B. Course Goals:

To build student mastery and confidence in the use of fundamental principles and concepts of statistical analysis. In addition, students will be encouraged to develop a positive attitude towards statistics by successfully completing course outcomes and problem solving.

C. Course Outcomes: Students will:

1. use statistical methods to collect, organize, analyze and interpret numerical data;
2. create and interpret graphs of data;
3. calculate and use measures of central tendency and variability;
4. calculate probabilities for events or combinations of events;
5. predict the outcomes of an event;
6. explain and use the Central Limit Theorem;
7. estimate population parameters;
8. recognize a variety of probability distributions;
9. interpret confidence intervals;
10. test hypotheses;
11. determine the linear regression equation;
12. and calculate and interpret the correlation coefficient.

D. Course Outcomes Assessment will include: a comprehensive final exam

E. Course Content will include:

1. definitions:
 - a. populations;
 - b. sample;
 - c. random variable;
 - d. parameter;
 - e. statistics;

2. descriptive statistics:
 - a. central tendency: mean, median, mode;
 - b. variability: range, variance, standard deviation;
 - c. graphs: bar, pie, frequency distribution, histogram, ogive;

3. probability:
 - a. event probability;
 - b. conditional probability;
 - c. mutually exclusive;
 - d. independence;
 - e. distributions: binomial, normal;

4. confidence interval estimate
 - a. one population mean;
 - b. the difference of two population means;
 - c. large and small samples;
 - d. proportions;

5. hypothesis testing:
 - a. one population mean;
 - b. two population means;
 - c. chi-squared test for independence;
 - d. large and small samples;
 - e. proportions;

6. regression:
 - a. scatter diagram;
 - b. simple linear regression equation;
 - c. prediction of response variable;

7. correlation:
 - a. correlation co-efficient;
 - b. interpretation of correlation;

8. and applications of a variety of scientific disciplines.