COCONINO COMMUNITY COLLEGE
COURSE OUTLINE

Revised by: Kathryn Kozak   January 5, 2018
Status: Permanent
Effective: Fall 2018

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: Introduction to Statistics involves statistical tools and techniques used in
        applications. Includes collection of data, graphical and descriptive statistics, probability and probability
        distributions, point and interval estimates of population parameters, hypothesis testing, and correlation and
        regression. Prerequisite: *Any college level math or placement. General Education:Mathematics. Three
        lecture. Fall, Spring.

B. Course Goals:
    To build student proficiency and confidence in the use of fundamental principles and concepts of statistical
    analysis. To develop problem solving skills that help students develop a positive attitude toward the use of statistics.

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 for one and two populations;
    8. recognize a variety of probability distributions;
    9. interpret confidence intervals;
    10. test hypotheses;
    11. determine and interpret linear regression and correlation;
    12. solve application situations using a variety of statistical methods
    13. and use technology to solve a variety of statistical applications

D. Course Outcomes Assessment will include:
1. Instructor assigned homework from the homework problems in the book;
2. Tests based on course content;
3. Project over hypothesis testing and confidence intervals;
4. comprehensive final exam

E. Course Content will include:
    1. Introduction:
        a. populations;
        b. sample;
        c. random variable;
        d. parameter;
        e. statistics;
        f. Data collection methods

2. descriptive statistics:
    a. central tendency: mean, median, mode;
    b. variability: range, variance, standard deviation;
    c. graphs: bar, pie, 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;
the difference of two population means;
    b. proportions;

5. hypothesis testing:
    a. one population mean;
    b. two population means;
chi-squared test for independence;
    c. 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;
    c. Test of correlation coefficient

8. and applications