COCONINO COMMUNITY COLLEGE
COURSE OUTLINE

Revised by: James Rhodes January 22, 2018
Status: Permanent
Effect Term: Fall 2018

A. Identification:
1. Subject Area: Psychology (PSY)
2. Course Number: 230
3. Course Title: Introduction to Statistics
4. Credit Hours: 4
5. Course Description: Basic concepts in descriptive and inferential statistics, emphasizing application to behavioral sciences. Includes methods of data collection, sampling techniques, central tendency, standard scores, correlation and regression, and hypothesis testing, tests for significance, and decision-making. Prerequisite: MAT 140 or higher. General Education: Options. Three lecture. Three lab.

B. Course Goals: The purpose of this course is to introduce the student to the basic concepts used in both descriptive and inferential statistics. Upon completion of this course, the student will have a broad understanding of statistics and how statistics can be applied to various research problems. Students will learn to utilize statistical software in the summarization and analysis of data and be able to interpret statistical outcomes using this software.

C. Course Outcomes:
Upon successful completion of this course, students will be able to:
1. distinguish between descriptive, correlational, and experimental research methods;
2. select, prepare and interpret appropriate tables and graphs;
3. compute and interpret measures of central tendency (mean, median, and mode) and measures of variability (variance, standard deviation, and range);
4. calculate and interpret standard scores;
5. compute, calculate, and interpret the significance of Pearson and other correlation coefficients;
6. understand and apply the steps and logic of hypothesis testing for the t-statistic, analysis of variance, and correlation;
7. explain the concept of sampling distributions and the Central Limit Theorem;
8. compute and interpret the significance of the t-test (single, matched/correlated and independent groups t tests);
9. compute and interpret **the** chi-square statistic and other non-parametric analyses;
10. compute and interpret multiple groups design (one-way and two-way ANOVA) and their applications;
11. choose the correct statistical technique for different research situations;
12. and use statistical software.

D. Course Outcomes Assessment will include written exams, graded homework assignments, and writing assignments.

E. Course Content will include:
1. methods of measurement;
2. multiple groups design;
3. graphs, distributions, and plots;
4. measure of central tendency and variability;
5. the normal curve and standard scores;
6. correlation and regression;

7. random sampling and probability;
8. hypothesis testing and decision making;
9. sampling distributions;
10. student's *t* test;
11. chi square and other nonparametric analysis;
12. analysis of variance;
13. multiple groups design.