PSYC 2330: Statistics for Behavioral Sciences

A. COURSE DESCRIPTION

Credits: 4
Lecture Hours/Week: 3
Lab Hours/Week: 2
OJT Hours/Week: 0

Prerequisites:
This course requires either of these prerequisite categories
1. Both of these
   PSYC 1445 - General Psychology
   MATH 1420 - College Algebra
   Or
2. MATH 1445 - Introduction to Statistics

Corequisites: None

MnTC Goals: None

This course introduces basic statistical terminology and utilizes basic mathematical and computerized procedures to analyze data in the behavioral sciences. Emphasis will be placed on appropriate application and interpretation of statistical measures. Students choose and apply statistical procedures to help answer psychological and behavioral scientific research questions. Students use statistical software SPSS to conduct descriptive and inferential data analyses.

B. COURSE EFFECTIVE DATES: 12/21/2018 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Calculate measures of central tendency and variability
2. Describe the basics of Inferential statistics: Z scores, the normal curve, sample versus population, and probability
3. Apply hypothesis testing
4. Understand the importance of statistical significance: Effect size, confidence intervals, and statistical power
5. Chose appropriate statistics
6. Utilize SPSS or another appropriate statistical software programs
7. Utilize APA format to report statistical results
8. Utilize a t-test: One and two Samples (between and within)
9. Describe Introduction to analysis of variance
10. Understand factorial analysis of variance
11. Calculate correlation
12. Calculate regression
13. Complete Chi-square tests
D. LEARNING OUTCOMES (General)

1. Demonstrate an understanding of the mathematics and logic behind selecting and applying statistical procedures appropriate for a given hypothesis, scale of measurement, and experimental design.

2. Perform and describe the statistical procedures commonly used by social scientists including their respective advantages and disadvantages. These include:
   a) Creating a visual display of data (e.g., bar chart, histogram)
   b) Measures of central tendency, variability, and frequency distributions.
   c) Correlational and regression analyses.
   d) Inferential statistical procedures, including t-tests, ANOVAs, multiple comparison tests, confidence intervals, and effect sizes.
   e) Nonparametric tests (e.g., chi-square).

3. Read, interpret, and summarize basic statistical conclusions from psychological and behavioral science sources. Accurately and critically, evaluate the statistical presentations of others.

4. Interpret statistical findings and graphs in the context of their level of statistical significance, confidence intervals, effect sizes, and underlying assumptions; and explain these findings using common language and conventions of the American Psychological Association.

5. Use SPSS or another statistical package to build data sets, run univariate analyses, and interpret and display results.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

   None

F. LEARNER OUTCOMES ASSESSMENT

   As noted on course syllabus

G. SPECIAL INFORMATION

   None noted