

# Minnesota State College Southeast

## PSYC 2533: Statistics for the Behavioral Sciences

### A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 3

Lab Hours/Week: 2

OJT Hours/Week: \*.\*

Prerequisites:

This course requires either of these prerequisites

PSYC 1110 - Introduction to Psychology

PSYC 2510 - General Psychology

Corequisites: None

MnTC Goals: Goal 05 - Hist/Soc/Behav Sci

Students will become familiar with the concepts and statistical procedures commonly used in the behavioral sciences, choosing appropriate statistical tests, and interpreting and writing APA-style research results. Use of a statistical software package will be performed as the lab component of the course. (Fulfills MnTC Goal 5) (Prerequisite: PSYC1110 AND completion of Math MnTC requirement, with MATH1230 Introduction to Statistics strongly recommended) (4 credits: 3 lecture/1 lab)

**B. COURSE EFFECTIVE DATES:** 11/01/2016 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Descriptive statistics:
  - Frequency distributions
  - Measures of central tendency and variability
2. Basic inferential statistics:
  - Z-scores
  - Probability
  - Samples and populations
  - Hypothesis testing
3. t-tests with related samples, independent samples
4. Analysis of variance:
  - Independent-measures, repeated-measures
  - Two-way ANOVA
5. Correlations
6. Regression
7. Chi-square tests
8. Choosing the proper statistics
9. Use of appropriate statistical package

#### **D. LEARNING OUTCOMES (General)**

1. Demonstrate understanding of the mathematics and logic in the selection and application of appropriate statistics for various hypotheses, scales of measurement, and research design
2. Discuss and calculate major statistical procedures used in the social sciences, as well as their advantages and disadvantages, including the following:
  - Creating visual displays of data
  - Frequency distributions, measures of central tendency and variability
  - Inferential statistics (e. g., t-tests, ANOVAs, multiple comparison tests, confidence intervals, effect sizes)
  - Correlations
  - Nonparametric tests
3. Demonstrate understanding of statistical conclusions in behavioral science research by interpreting, summarizing, and evaluating the quality of findings
4. Read and interpret graphs and statistical results in terms of statistical significance, confidence intervals, effect sizes, and explain them using APA formatting
5. Use a statistical package to enter data, conduct analyses, and interpret and display results

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

Goal 05 - Hist/Soc/Behav Sci

1. Employ the methods and data that historians and social and behavioral scientists use to investigate the human condition.
2. Use and critique alternative explanatory systems or theories.
3. Develop and communicate alternative explanations or solutions for contemporary social issues.

#### **F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

#### **G. SPECIAL INFORMATION**

None noted