Anoka-Ramsey Community College

PSYC 2280: Statistics for the Behavioral Sciences

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 3

Lab Hours/Week: 1

OJT Hours/Week: *.*

Prerequisites:
This course requires both of these prerequisite categories
  1. One of these two
        PSYC 1110 - General Psychology (Minimum grade: 2.0 GPA Equivalent)
        A score of 3 on test Advanced Placement Psychology
     And
  2. Any one of these nine
        MATH 1110 - Introductory Statistics I
        MATH 1114 - Introduction to Statistics (Minimum grade: 2.0 GPA Equivalent)
        MATH 1200 - College Algebra (Minimum grade: 2.0 GPA Equivalent)
        A score of 60 on test Accuplacer College Level Math
        A score of 265 on test Accuplacer NG Advanced Algebra Functions
        A score of 2.8 on test HS GPA for placement into Math 1201/1210
        A score of 2.8 on test HS GPA for placement into Math 1400
        A score of 3 on test Adv Placement Calculus AB
        A score of 3 on test Adv Placement Calculus BC

Corequisites: None

MnTC Goals: Goal 02 - Critical Thinking, Goal 05 - Hist/Soc/Behav Sci

(MnTC Goals 2 and 5)

Prerequisites: PSYC 1110; MATH 1114 or MATH 1200 with a grade of C or better

Students use basic mathematical and computerized procedures to analyze data in the behavioral sciences. Use statistical software (e.g., SPSS, "R," "PSPP") to conduct descriptive and inferential data analyses. Students choose and apply statistical procedures to help to answer psychological and behavioral scientific research questions. Students read, interpret, and write APA-style results sections for behavioral science research.

B. COURSE EFFECTIVE DATES: 03/10/2017 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Central tendency and variability
2. Basics of inferential statistics: Z scores, the normal curve, sample versus population, and probability
3. Hypothesis testing
4. Making sense of statistical significance: effect size, confidence intervals, and statistical power
5. Choosing appropriate statistics
6. Using SPSS or another appropriate statistical package, R, or other statistics program
7. Reporting results in APA format
8. The t-test: one and two samples (between and within)
9. Introduction to analysis of variance
10. Factorial analysis of variance
11. Correlation
12. Regression
13. 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

Goal 02 - Critical Thinking

1. Gather factual information and apply it to a given problem in a manner that is relevant, clear, comprehensive, and conscious of possible bias in the information selected.
2. Imagine and seek out a variety of possible goals, assumptions, interpretations, or perspectives which can give alternative meanings or solutions to given situations or problems.
3. Analyze the logical connections among the facts, goals, and implicit assumptions relevant to a problem or claim; generate and evaluate implications that follow from them.

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