BAKER COLLEGE
STUDENT LEARNING OUTCOMES

PSY5410 Statistics and Data
3 Semester Credit Hours

Student Learning Outcomes and Enabling Objectives

1. Assess foundational statistical terms used to interpret and analyze data.
    a. Examine the four levels of measurement.
    b. Examine parametric and nonparametric statistics.
    c. Distinguish between descriptive and inferential statistical methods and their applications.
    d. Compare sample and population.
    e. Examine the process of determining statistical significance to include use of alpha, effect size, and power.
    f. Describe measures of central tendency.
    g. Distinguish between correlations and tests of significance.
    h. Explore sampling and probability.

2. Assess the role of statistical data analysis in psychological research.
    a. Determine the use of common statistical tests including t-test, ANOVA, correlation, regression, chi-square tests.
    b. Evaluate results sections and conclusions of published psychological research.

3. Apply statistical concepts and methods to interpret data sets and statistical reports.
    a. Calculate descriptive statistics: measures of central tendency and variability.
    b. Construct graphs, tables, and figures to display data.
    c. Analyze data and report results of statistical tests associated with hypothesis testing, including:
        i. t-tests
        ii. ANOVA
        iii. Correlation
        iv. Chi-Square tests
        v. regression

4. Analyze ethical considerations related to statistics and research.
    a. Describe how unintentional bias can influence data collection and analysis.
    b. Discuss the assumptions and limitations underlying statistical methods.
    c. Describe the uses and misuses of statistical data and analysis procedures.
    d. Examine how global and cultural demographics can affect the interpretation of results.

5. Communicate effectively using the professional standards of the discipline.
    a. Apply APA formatting guidelines to paper format, body of paper in-text citations, and references.
    b. Apply knowledge of writing mechanics (sentence structure, spelling, punctuation, etc.) to enhance professionalism and readability of writing.
    c. Write and speak in a coherent and clear manner consistent with professional and academic settings.

Big Ideas and Essential Questions

Big Ideas

- Foundational knowledge
- Statistical analysis
- Data interpretation
- Ethics
- Effective Communication

Essential Questions

1. Why is it important to have an understanding of the foundational terminology in statistics?
2. How do psychologists use statistical analysis?
3. How do people make decisions based on the interpretation of data?
4. How does ethics apply to statistics?
5. Why is professional communication important in the I/O field?

These SLOs are not approved for experiential credit.

Effective: Fall 2023