

# Bemidji State University

## PSY 4403: Advanced Statistics and Research Design

### A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: \*.\*

Lab Hours/Week: \*.\*

OJT Hours/Week: \*.\*

Prerequisites: None

Corequisites: None

MnTC Goals: None

Advanced statistics, focusing on factorial analysis of variance and multiple regression using SPSS, as well as associated research designs. Emphasis on logic, applications, and communication. Prerequisites: PSY 3401 and PSY 3402, or consent of instructor.

**B. COURSE EFFECTIVE DATES:** 06/02/2008 - Present

### C. OUTLINE OF MAJOR CONTENT AREAS

1. 1-Sample T-Tests
2. 1-Way Repeated Measures ANOVAs
3. 1-Way Between Ss ANOVAs
4. Between Subjects Factorial ANOVA & ANCOVA
5. Independent Samples T-Tests
6. Integrated Research Applications
7. Logic of Factorial ANOVA
8. Mixed Design Factorial ANOVA
9. Multiple Linear Regression
10. Paired Samples T-Tests
11. Pearson r
12. Repeated Measures Factorial ANOVA
13. Review of Hypo Testing, Power Analysis, Effect Size
14. Screening Data
15. Simple Linear Regression

**D. LEARNING OUTCOMES (General)**

1. know the advantages/disadvantages of various research designs and corresponding statistical tests.
2. gain the ability to follow APA format in the writing of the Results and Discussion sections of a research paper.
3. gain the ability to develop research hypotheses and to critically evaluate and select appropriate research designs.
4. know the appropriate statistical procedure to employ in a research application based on an analysis of the level of measurement.
5. being able to use the statistical computer package SPSS, being able to read and interpret SPSS outputs.
6. evaluate the assumptions for the valid application of different statistical procedures and using alternative nonparametric procedures.
7. understand the logic/mathematics underlying various research designs and corresponding univariate and multivariate statistics.

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

None

**F. LEARNER OUTCOMES ASSESSMENT**

As noted on course syllabus

**G. SPECIAL INFORMATION**

None noted