

1. Foun 8330
Nonparametric Statistics
3 Credit Hours
Prerequisite: FOUN 7300 Design and Analysis in Education I

2. Spring Semester 2008
Meeting Time: Wednesdays 4:00 to 6:50
Room: Haley
Instructor: Margaret E. Ross
4018 Haley Center
(334) 844-3084 rossmal@mail.auburn.edu (the first 1 = one)
Office Hours: Tuesday Mornings or by appointment

3. Suggested Resources

Shannon, D. M. & Davenport M. A. (2000). Using SPSS to Solve Statistical Problems: A Self-Instructional Guide. Merrill Prentice Hall, Upper Saddle River, New Jersey.

Publication Manual of the American Psychological Association (any recent edition). Washington D.C., American Psychological Association.

4. Course Description

This course is designed to provide students the understanding of nonparametric statistical methods pertaining to design and analysis in educational research. Parametric statistics will be reviewed and parallel nonparametric statistics will be compared to the characteristics and uses of the parametric statistics. This course emphasizes the conceptual understanding and application as well as calculations of nonparametric statistics.

5. Course Objectives

Students will:

- Gain an understanding of nonparametric statistical procedures.
- Apply knowledge of nonparametric statistics by analyzing research problems and making decisions about the appropriate use of nonparametric procedures.
- Apply knowledge of nonparametric statistics using SPSS and/or hand calculations to determine significance.
- Apply knowledge of inferential statistics by interpreting results of statistical analyses.
- Interpret the results of the analyses in terms of the research hypothesis.

6. Tentative Course Content and Schedule

Class 1 1/9/08

Introduction to the Course/ Overview of Nonparametric Uses
Research interests
Review of Parametric Concepts

Class 2 1/16/08

One sample nonparametric tests for nominal or categorical data
Comparison to parametric procedures
In-class Assignment/Assessment Notebook

Class 3 1/23/08

Quiz
Related two-sample nonparametric tests for nominal or categorical data
Comparison to parametric procedures
In-class Assignment/Assessment Notebook

Class 4 1/30/08

Independent two-sample nonparametric tests for nominal or categorical data
Comparison to parametric procedures
In-class Assignment/Assessment Notebook

Class 5 2/6/08

Related k-sample nonparametric tests for nominal or categorical data
Comparison to parametric procedures
In-class Assignment/Assessment Notebook

No Class 2/20/08 (EERA conference)

Class 6 2/27/08

Quiz
One sample tests for ordinal and interval data
Comparison to parametric procedures
In-class Assignment/Assessment Notebook

Class 7 3/5/08

Related two-sample nonparametric tests for ordinal and interval data
Comparison to parametric procedures
In-class Assignment/Assessment Notebook

Class 8

Independent two-sample nonparametric tests for ordinal and interval data
Comparison to parametric procedures
In-class Assignment/Assessment Notebook

Class 9 3/12/08

Quiz
Proposal discussion (design)
Rubrics for proposal distributed
Discussion of parametric and nonparametric differences in proposals (using APA manual)
Proposal development (in-class)

Spring Break 3 19 08

No Class 3/26/08 (AERA conference)

Class 10 4/2/08

Independent k-sample nonparametric tests for ordinal data

Comparison to parametric procedures

In-class Assignment/Assessment Notebook

Preparation for teaching a non-parametric statistic and presentation of literature in which the statistic was used

Class 11 4/9/08

Measures of Association

Comparison to parametric procedures

In-class Assignment/Assessment Notebook

Preparation for teaching a non-parametric statistic and presentation of literature in which the statistic was used

First Draft of Final Paper due next class

Class 12 4/16/08

Quiz

Presentations

Peer Reviews of Final Papers

Revisions of Final Papers (in-class)

Class 13 4/23/08

Presentations

In-class Assignment/Assessment Notebook

Final Papers Due

Class 14 (to be discussed)

Roundtable Sessions

7. Course Requirements/Evaluation

Learning Methods

Lectures, discussions, readings, class exercises and lab assignments.

You will contract for a grade of A or B. For an A you must earn 90% to 100% of points (see grading scale below), be absent or late no more than two classes, and complete all components listed under the A grading scale. If you earn less than 90% to 100% on assessment components (see below for assessment components) you will earn the grade indicated by the percent earned.

Grading Scale for A

A: 90 – 100% and excellent class attendance (absent or late no more than two classes)

B: 80 – 89% and good class attendance (absent or late no more than three classes)

C: 70 – 79%

D: 60 – 69%

F: below 60%

Student Assessment components for a grade of A

Assignment/Assessment Notebook 15% total, distributed as indicated below:

Hand Calculations from class projects 5%

Article Summaries (hypothesis, variables, analysis, how question answered 5%

Presentation lesson notes or outline 5%

Quizzes 60%

Class Presentation 15%

Research Proposal* 10%

If you choose to contract for a B you will need to complete all components listed below, earn at least 80% of points, be absent or late no more than three classes and complete all components listed under the B grading scale. If you earn less than 80% on assessment components (see below for assessment components) you will earn the grade indicated by the percent earned. The assessment components needed to earn a grade of B does not include a final project and a higher percent is attached to hand calculations and to article summaries completed throughout the class.

Grading Scale for B

- A: 90 – 100% and excellent class attendance (absent or late no more than two classes)
- B: 80 – 89% and good class attendance (absent or late no more than three classes)
- C: 70 – 79%
- D: 60 – 69%
- F: below 60%

Student Assessment components for a grade of B

Assignment/Assessment Notebook 25% total, distributed as indicated below:

Hand Calculations from class projects 10%

Article Summaries (hypothesis, variables, analysis, how question answered 10%

Presentation lesson notes or outline 5%

Quizzes 60%

Class Presentation 15%

Notebook: The notebook will be graded based on completeness. It should contain (1) handouts for all classes, (2) in-class calculations, (3) in-class lab output, and (4) articles with summaries. Summaries are to include the hypothesis/research question addressed, the variables in the analysis, the independent and dependent variables, and why the particular analysis was used (appropriateness for answering the research question).

Sometimes the lab will double as an assignment and must be turned in at the end of the lab session. In this case, you will need to have the output printed. You can work in pairs on lab assignments and turn in one lab assignment per pair if you wish.

Attendance

Points are not attached to attendance directly. However, excellent class attendance is required to earn an A and to earn lab or other in-class points. I will note absences from class. If you need to be absent for school or work-related requirements, illness, or an emergency, you are allowed to make up points for no more than two classes. The student is responsible for initiating arrangements for missed work.

**Proposal and Presentations*

The following is the outline that will be used for this assignment. You will present the research in round table session format and turn in your accompanying paper (5-7 pages).

Introduction (no more than 1 to 1 ½ pages)

- A. Statement of Problem
- B. Significance of problem (based on literature review)
- C. Specific research questions to be answered or hypotheses to be tested.
 - 1. Are they clearly stated?
 - 2. Are they feasible/legitimate?
 - 3. Does it lend itself to t-test or ANOVA procedures?

Methodology

- A. Full description of participants
- B. Measures
- C. Procedures (detailed description of what you did – step by step)
- D. Data processing and analysis (how will you analyze the data and why)?

Results – If you don't have data, make it up.

- A. Are **all** appropriate statistics clearly stated in APA style?
- B. Are tables or graphs appropriately used?

Discussion (no more than 1 page)

- A. Results in words
- B. Limitations discussed

A more detailed rubric will be handed out closer to the time the proposal and presentation are due. The paper is to be written in APA style.

8. Class Policy Statements

Class Attendance (see attendance requirements under section 7 above)

Late Assignments Policy

- Assignments turned in late will receive a 3% reduction in earned points per day. The only exception will be in the case of emergency.
- Except for work requiring calculations, all work must be typed or it will **not** be graded. Late penalty will be applied to work completed in writing and then turned in late in typed format for a grade.

Incompletes and Withdrawals

Grades associated with incomplete course work or withdrawal from class will be assigned in strict conformity to University policy (see Auburn University Bulletin). If you wish to drop this course you may do so by the 10th class day with no grade assignment. From the 10th class day to mid-quarter a W (withdrawn-passing) grade will be recorded in your transcripts. After this period withdrawal from the course will only be granted under unusual circumstances and must be approved by the Dean of the College of Education.

Academic Misconduct

The Department of EFLT recognizes university policy regarding academic misconduct. Violations include, but are not limited to: plagiarism, unauthorized assistance during examinations, submitting another's work product as your own, using another's words as your own without appropriate citation, sharing unauthorized materials with another that contain questions or answers to examinations, altering or attempting to alter assigned grades. In accordance with University policy regarding academic misconduct, students may be subject to several sanctions upon violations of the Student Academic Honesty Code. See the Tiger Cub publication for the current year for specifics regarding academic misconduct as well as student's rights and responsibilities associated with the Code.

Disability Accommodations

Students who need accommodations are asked to arrange a meeting with me as soon as possible. If you have a conflict with my office hours, an alternate time can be arranged. To set up this meeting, please contact me by e-mail. Bring a copy of your Accommodation Memo and an Instructor Verification Form to the meeting. If you do not have an Accommodation Memo but need accommodations, make an appointment with The Program for Students with Disabilities, 1244 Haley Center, 844-2096.