1. **Course Number and Title:** ERMA 8330 Nonparametric Data Analysis in Educational Research

   **Credit:** 3 Semester Hours (Lecture 3)

   **Prerequisites:** None

2. **Date:** May, 2014

3. **Required Textbook:** TBA

   **Recommended:** (a) Calculator with basic algebraic functions and (b) mechanical pencil that takes 0.9mm or 0.7mm size lead. Black color lead and HB or B hardness.

4. **Course Description:**

   The focus of this course is on the knowledge, concepts, applications, interpretations, and reporting of basic and practical nonparametric statistical procedures related to problems in the social and behavior sciences. Specifically, the course covers applications of nonparametric statistics for the single-sample case, paired replicates, independent samples, and measures of association. Statistical procedures may be conducted via hand calculations; PASW will be used for all computer applications. In addition, the course is designed to assist students in applying theory and applications to practical situations, so that they may begin to develop and apply their own critical thinking and decision-making skills as future professional educators.
5. **Course Objectives:**

The following objectives are designed to develop students’ competence in knowledge, applications, and interpretations of basic nonparametric statistical procedures used in educational research.

A. Use research and statistical terminology appropriately and accurately

B. Demonstrate knowledge of the following subject matter:

1. Differences between parametric and nonparametric statistics
2. Assumptions of nonparametric statistics
3. Data requirements for nonparametric statistics
4. Hypothesis testing, decision rule, alpha level
5. Type I and Type II error
6. Region of rejection
7. Power
8. Choice of statistical test
9. Research and Procedures for
   (a) Single-sample designs
   (b) Paired replicates designs
   (c) K related samples
   (d) Two independent samples designs
   (e) K independent samples
   (f) Measures of association

C. Use statistical software (PASW) to perform nonparametric procedures.

D. Evaluate educational problems in terms of the appropriate analysis to perform and conduct the procedures.

E. Interpret results of nonparametric statistical analyses.

6. **Course Content:**

The following content will be covered to the extent that time allows.

A. Course Overview
B. Introduction to nonparametric statistics
C. Use of statistical tests in research
D. Choosing an appropriate statistical test
E. Research and Procedures for
   (a) Single-sample designs
   (b) Paired replicates designs
   (c) K related samples
(d) Two independent samples designs  
(e) K independent samples  
(f) Measures of association

7. **Course Requirements/Evaluation:**

A. Read all assigned materials prior to class and be prepared to respond to questions in class.

B. Complete all homework assignments.

C. Complete the all tests and the final examination.

Final grades will be based on the following:

1. Homework Assignments  90 points  
2. Mid-term examination  50 points  
3. Final examination  100 points  
Total  240 points

The following grading scale will be used.  
91% - 100% = A (Superior; very high performance)  
81% - 90% = B (Above average performance)  
71% - 80% = C (Average to above average performance)  
60% - 70% = D (Unacceptable performance)  
Below 60% = F (Failing)

8. **Class Policy Statements:**

The following guidelines should help students to know the course expectations that will help them to complete the course requirements successfully.

A. There will be no unannounced quizzes in this class. Each student’s grade in this course is based on his/her own performance and not in comparison to the performance of others.

B. Please ask for help if needed at least 2 work days before homework is due. Email almost anytime works well if you have a quick question. **No late homework will be graded.** Homework handed in after class begins is considered late and will not be accepted. Plenty of lead time will be provided for students in case they have a planned or unplanned absence. The professor will provide due dates for assignments at the time assignments are made or earlier. Some (or all) assignments will be done in class. These cannot be made up. Only hard copies of homework will be accepted. All assignments should be typed, double-spaced on one side of the paper, using 12-point font and dark, sharp print. Assignments should be clean and
neat. Unstapled pages will not be graded. For example, assignments held together with paper clips, folders, rubber bands, three-ring binders etc., will not be accepted. The first page should identify the student by full name, the assignment, and the date. The entire assignment must be turned in at the same time. Partial assignments will not be graded.

C. Academic dishonesty is an offense that will be reported to the Academic Honesty Committee. (See related pages in the Tiger Cub.)

D. Attendance/Absences: I do not grade based on attendance; only your performance is calculated for your grade in this course. However, attendance is required at each class meeting. It is the student’s responsibility to arrange for a classmate to take notes for him/her and to get a copy of all handouts for him/her in the event of an absence, planned or unplanned.

E. Accommodations: Students who need accommodations are asked to arrange a meeting during office hours the first week of classes, or as soon as possible if accommodations are needed immediately. If you have a conflict with my office hours, an alternative 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 at 1244 Haley Center, 844-2096 (V/TT).

F. Honesty Code: The University Academic Honesty Code and the Tiger Cub Rules and Regulations pertaining to Cheating will apply to this class.

G. Professionalism: As faculty, staff, and students interact in professional settings, they are expected to demonstrate professional behaviors as defined in the College’s conceptual framework. These professional commitments or dispositions are listed below:

--Engage in responsible and ethical professional practices

--Contribute to collaborative learning communities

--Demonstrate a commitment to diversity

--Model and nurture intellectual vitality

9. **Justification for Graduate Credit**

Graduate courses “should be progressively more advanced in academic content than undergraduate programs” and should “foster independent learning” (SACS guidelines 3.6.1 and 3.6.2). Further, the guidelines presented in the Statement of Clarification of the Definition and Use of 6000-level courses as approved by the Graduate Council, May 21, 1997 apply:

Factors to consider in evaluating a course for graduate credit include but are not limited to the following:
--use of specific requisites

--content of sufficient depth to justify graduate credit (materials beyond the introductory level)

--content should develop the critical and analytical skills of students including their application of the relevant literature

--rigorous standards for student evaluation (all students in a 6000-level course must be evaluated using the same standards)
--course instructor must hold graduate faculty status or be approved by the Dean of the Graduate School

10. **Methodologies and Course Evaluation:**

A variety of teaching techniques and strategies will be used in the instruction of this course. The principal methods of instruction include lectures and demonstrations. Students will evaluate the course using a checklist of criteria.

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NOTE: Please check your email before each class meeting for any announcements. Thanks.