Syllabus

Course Number: ERMA 7310

Course Title: Design and Analysis in Education II

Semester: Spring, 2011

Credit Hours: 3 credit hours

Prerequisites: ERMA 7300 Design and Analysis in Education I

Meeting Time: Monday 11:00~1:50 pm (Haley 3442)

Instructor: Chih-hsuan Wang
4098 Haley
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Office Hour: Tuesday 9:30~11:30
Thursday 9:30~11:30 or make an appointment

Date Syllabus Prepared: December, 2010

Texts:

Ross, M. E. & Shannon, D. M. (2008). *Applied Quantitative methods in Education*. Dubuque, IA: Kendall/Hunt Publishing Company.

Recommended Reading:

Gravetter and Wallnau. (2005). *Statistics for the Behavioral Sciences (6th ed.).* Belmont, CA: Wadsworth. ISBN# 0-534-60246-0

Shannon and Davenport (2001). *Using SPSS to Solve Statistical Problems*. Columbus, OH: Merrill/Prentice Hall. ISBN# 0-13-267576-5

Huck. (2004). *Reading research and Statistics (4th ed.).* Boston, MAS: Pearson Education. ISBN # 0-205-38081-6

American Psychology Association (2009). *Publication Manual of the American Psychological Association (6th ed.)*. Washington D.C., American Psychological Association.

Course Description:

This course is designed to provide students the understanding of statistical methods pertaining to the design and analysis educational research. Descriptive statistics will be reviewed and analyses that assess the strength of relationships between or among variables as well as analyses to predict will be studied. This course emphasizes the conceptual application of statistics with some emphasis placed on the mathematical derivation of the formulas to facilitate understanding of the statistics. A part of the course will be learning SPSS as it pertains to correlation and regression and learning to interpret output.

Course Objectives:

- Upon completion of this course, the student will be able to:
- Gain an understanding of correlation and regression procedures.
- Apply knowledge of correlation and regression procedures by analyzing research problems and making decisions about the appropriate use of these procedures.
- Apply knowledge of correlation and regression statistics using SPSS. (Technology)
- Apply knowledge of correlation and regression procedures by interpreting results of statistical analyses.
- Interpret the results of the analyses in terms of the research hypothesis.

Tentative Course Content and Schedule

Week	Date	Reading & Class activities
1	01/10	Syllabus Introduction Review of Hypothesis Testing
2	01/17	M. L. King Day (Holiday)
3	01/24	Correlation • Review of Least Squares • Variance and Covariance • Calculation of Correlation • Coefficient of Determination (r^2)
4	01/31	Simple Linear Regression **Assignment Due:** Final Project Research Question
5	02/07	Part and Partial Correlation Test Preparation
6	02/14	Test 1
7	02/21	Multiple Linear Regression
8	02/28	Method of Entering Data Checking Assumptions
9	03/07	Test Preparation
10	03/14	Spring Break
11	03/21	Test 2

Week	Date	Reading & Class activities
12	03/28	Analysis of Covariance (ANCOVA)
13	04/04	Curvilinear Regression **Assignment Due:** Final Project
14	04/11	Logistic Regression
15	04/18	Test 3
16	04/25	Round Table Presentation

Course Requirements:

- Attend all class sessions and participate in class discussions and activities
- Complete all examinations
- Complete all computer exercises
- Complete a final project.

Grading and Evaluation Procedures:

Examinations	60% (18%, 25%, 17%)
Computer Exercises	15%
Final Project	20%
Presentation	5%

Any assignment presented or turned in late will be penalized 5% for each day past the assignment deadline. Assignments more than 2 weeks overdue will not be accepted.

Grading Scale:

Grade	Percentage
A	***90-100% of possible points and excellent attendance and participation***
B	***80-89% of possible points and at least good attendance and participation***
C	**70~79%**
D	**60~69%**
F	**<60%**

- Class 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 not absences. 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. Students are responsible for initiating arrangements for missed work.

- Examinations (60%)

  There will be three examinations. These exams will be in class exams. You can have a cheat sheet for the exams.

- Computer Exercises (15%)

  Computer exercises are designed to introduce you to the use of SPSS to complete analyses taught in class. Due to time restraints, it is NOT intended to provide you with enough practice to memorize procedures. You should have reference books to help you complete analyses via SPSS when you do are completing analyses on your own. Sometimes the computer exercises will double as an assignment and must be turned in at the end of the class 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

- Final Project (20%)

  The following is the outline that will be used for this assignment. You will turn in your paper (4 to 6 pages double spaced excluding cover page and references) and present the research in round table session format. You must use a correlation / regression design taught in this class. If you do not use a correlation / regression design, I will not accept the paper. The paper is to be written in APA style

Use the following major sections:

Introduction Section of 1 to 1 ½ pages (use title at top of page and DO NOT use "introduction" as a heading, the following information should be included in this major section)

- Argument of worth or purpose of the study
- Literature - Integrated by themes/points made
- Hypothesis or research question - written first but presented at the end of the literature section

Methodology Section (Methodology is the major heading and participants, measures, and procedures are all subheadings - information to include is in parentheses)

- Participants (descriptive statistics)
- Measures (Validity and Reliability important here! - describe scale(s), composite scores, how scores are used in the study)
- Procedures (detailed description of what you did step by step, data processing and analysis - how will you analyze the data and why)?

Results Section (Results is the major heading and no subheadings are needed, the following information should be included in this major section)– If you don't have data, make it up.

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

Discussion Section (Discussion is the major heading, the following information should be included in this major section)

- State results in words
- Discuss Limitations, including statistical assumptions

- Presentation (5%)

  You have to prepare a one page handout for your presentation.

Class Policy Statements

- *Class Attendance*

  Points are not attached to attendance directly. However, excellent class attendance is expected. 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. Students are responsible for initiating arrangements for missed work.

- *Assignment Policy*
  - Due to the potential incompatibility of word processing programs and formats, and the potential for the transmission of viruses, absolutely no work for the course will be accepted as an E-mail and/or as an E-mail attachment, or on a disk etc. All graded work must be printed off by you and delivered to me in hard copy format.
  - All work submitted for the course must be typed.
- *Late Assignments Policy*
  - Assignments turned in late will receive a 5% 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 special accommodations in class, as provided for by the American Disabilities Act, should arrange a confidential meeting with the instructor during office hours the first week of classes - or as soon as possible if accommodations are needed immediately. You must bring a copy of your

Accommodation Memo and an Instructor Verification Form to the meeting. If you do not have these forms but need accommodations, make an appointment with the Program for Students with Disabilities, 1244 Haley Center, 844-2096.

NOTE: This is a tentative syllabus. Any changes will be announced in class. Students are responsible for being aware of the changes made.