Syllabus

Course Number: ERMA 7310

Course Title: Design and Analysis in Education II

Semester: Summer, 2016

Credit Hours: 3 credit hours

Prerequisites: ERMA 7300 Design and Analysis in Education I

Meeting Time: Mondays 4:00~7:50 pm (Haley 3430)

Instructor: Chih-hsuan Wang
4045 Haley
wangchi@auburn.edu

Office Hour: make an appointment

Date Syllabus Prepared: May, 2016

Texts:

Ross, M. E., & Shannon, D. M. (2011). *Applied Quantitative methods in Education (2nd ed.)*. Dubuque, IA: Kendall/Hunt Publishing Company.

Recommended Reading:

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

Gravetter, F. J. & Wallnau, L. B. (2012). *Statistics for the Behavioral Sciences (9th ed.).* Belmont, CA: Wadsworth.

Huck. (2012). *Reading research and Statistics (6th ed.).* Boston, MAS: Pearson Education.

Knapp, H. (2014). *Introductory Statistics Using SPSS*. Thousand Oaks, CA: Sage.

Shannon and Davenport (2001). *Using SPSS to Solve Statistical Problems*. Columbus, OH: Merrill/Prentice Hall.

IMPORTANT:

- **All course materials (syllabus, PPTs, lab assignments and data files, rubrics…etc.) will be available in Canvas. Please check the Canvas before each class. I am not going to provide hard copies.**
- **I will not accept the work completed by hand calculation unless it is the only way to do it.**
- **Required Computer Software:**

  1) SPSS version 23.

     You can purchase/rent SPSS Standard Grad Pack from these distributors:

     http://www-03.ibm.com/software/products/en/spss-stats-gradpack

  2) Microsoft Office Word.

  3) PDF file creator (e.g. Adobe Acrobat).

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.
- use SPSS to analyze data by correlation and regression statistical procedures.
- interpret the results of correlation and regression statistical procedures in terms of the research hypothesis.
- review published research literature to examine the application of measurement, design, and analysis procedures.
- prepare a written summary of data analysis results in APA format

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 (100 pts * 2)	200 pts
Computer Exercises (20 pts * 5)	100 pts
Final Project	75 pts
Presentation	25 pts
Total Possible Points	400 pts

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.

You can check your grade for each assignment you submitted in the Canvas. However, I keep the official grades in an Excel file and will calculate your final grade using Excel or SPSS.

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, in order to explore topics effectively, attendance and class participation are essential. Excellent class attendance is required to earn an A and to earn lab or other in-class points. 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 (100 pts * 2)

  There will be two examinations. These exams will be in class or take home. You can have a cheat sheet for the exams if it is an in class exam. If it is a take-home exam, you can use all resources you can find. However, the work needs to be your own work.

- Computer Exercises (20 pts * 5)

  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 (75 pts)

  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 (25 pts)

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

Class Policy Statements

- ***Email and Communication***
  - All communication through emails needs to be via Auburn Tiger Email system. In other words, you need to use your university email address to send me emails, and I will do the same. Emails will be responded within 48 hours excludes weekends and holidays.
  - All PPTs and announcements will be posted in the Canvas. You are responsible to check the Canvas before you come to the class.
  - All assignments need to be uploaded in the Canvas. I will grade your assignments in the Canvas. You can check your grade for each assignments in

the Canvas as well. However, I keep your official grades in my Excel file.

- If you need individual help, you can reach me during the office hour, email, or make an appointment.

- ***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.

- ***Electronic Device Policy***

  Cell phones should be turned off or to vibrate during class. Cell phone texting and/or reading are not permitted in class. Laptops and tablets in class could only be used for the purpose of the class.

- ***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 or submitted through Canvas.
  - 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.

  - Note that the incomplete grade (IN) policy is in effect. The new policy requires that students complete a form requesting that an IN grade be assigned. If this form in not completed and given to the instructor of the class, a grade will be assigned with a score of zero (0) for work that has not been completed and turned in by the time the instructor reports grades. <u>To be eligible for a grade of IN, the student must have completed and have passed more than half of all class assignments/exams for semester.</u>

- ***Academic Misconduct***

  Academic Honesty

  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.

Plagiarism

For more information, see:

http://www.collegeboard.com/student/plan/college-success/10314.html

http://owl.english.purdue.edu/owl/resource/589/01/

http://www.indiana.edu/~wts/pamphlets/plagiarism.shtml

- ***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. 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. 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, 1228 Haley Center, 844 2096 (V/TT).

Tentative Course Content and Schedule

Week	Date	Reading & Class activities	Assignment Due
1	05/23	Syllabus Introduction Review of Hypothesis Testing Correlation • Review of Least Squares • Variance and Covariance • Calculation of Correlation Coefficient of Determination (r^2)	Lab #1
2	5/30	**Memorial Holiday**	
3	06/06	Simple Linear Regression Part and Partial Correlation	Final Project Research Question Lab #2
4	06/13	Multiple Linear Regression	
5	06/20	Method of Entering Data Checking Assumptions	Lab #3 **Midterm Exam Take Home**
6	06/27	Analysis of Covariance (ANCOVA)	**Midterm Exam Due**
7	07/04	**July 4th**	
8	07/11	Curvilinear Regression	Lab #4
9	07/18	Logistic Regression	Lab #5 **Final Project Due** **Final Exam Take Home**

Week	Date	Reading & Class activities	Assignment Due
10	07/25	Round Table Presentation **(one-page presentation handout due)**	**Final Exam Due**

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