The College of Education CAREs

The College of Education is dedicated to the ideals of Collaboration, Academic Excellence, Research, and Ethical Practice. These are key tenets in the Conceptual Framework of the College of Education. Competence in these ideals will provide candidates in educator preparation programs with skills, knowledge, and dispositions to be successful in the schools of today and tomorrow. For more information on the Conceptual Framework, visit:
www.coedu.usf.edu/main/qualityassurance/ncate_visit_info_materials.html

Course Prefix and Number: EDF 7407
Credit Hours: 4
Course Title: Statistical Analysis for Educational Research II
Course Prerequisites: None
Class Time: Mondays & Wednesdays 12:00 – 1:50 pm
Location: EDU 316
Office Hours: Thursdays 2:00 p.m. – 5:00 p.m.
Other times by appointment

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SKYPE Account: chenspring08

Department Secretary: Lisa Adkins
Office: EDU 360
Telephone: (813) 974-3220
Required Texts


Additional required readings


Course Purpose

The primary purpose of this course is to help students gain an understanding of the logic, concepts, methods, applications, and limitations of categorical dependent variable analysis (Chi-square tests), analysis of variance (ANOVA), analysis of covariance (ANCOVA), and multiple regression. The course emphasis is on the application of these procedures in the context of research in education. Computer applications of the procedures will be integrated into the course.

The successful completion of the course requirements is expected to result in increased ability to (a) intelligently read and evaluate research literature, (b) recognize the strengths and limitations of statistical analysis in the conduct of disciplined inquiry, (c) design research studies requiring the use of Chi-square tests, ANOVA, ANCOVA, or multiple regression, and (d) communicate with peers and other professionals on research issues.
Course Objectives

The student should, upon completion of the course, be able to do each of the following:

a. Select, apply, and interpret the results of appropriate categorical dependent variable analysis procedures for given data situations
b. Select, apply, and interpret the results of appropriate ANOVA models for given data situations
c. Select, apply, and interpret the results of appropriate follow-up analysis procedures subsequent to ANOVA
d. Apply and interpret the results of ANCOVA models in appropriate data situations
e. Select, apply, and interpret the results of appropriate multiple regression models in given data situations
f. Use a packaged statistical program to calculate Chi-square, ANOVA, ANCOVA, and multiple regression models

Course Activities

Each student is expected to complete the reading assignments in the texts and the supplementary readings prior to the class session. Basic familiarity with the material will increase learning in the classroom. In addition, each student is encouraged to complete homework exercises whether or not the homework is collected and graded. The best way to learn the logic of many statistical procedures is through practice with the formulas.

As a class we will work through different case studies. In each case we will plan an analysis, conduct the analysis using hand-computation and statistical software, discuss the findings, write up the results, and discuss the statistical issues that arise. This will involve a variety of types of participation individually, in small groups, and in a large group. For evaluation purposes, the students will conduct two take-home analysis assignments, one research project and take two exams.

Class Materials

A Course WebSite - https://my.usf.edu, which contains class notes, data sets, and practice activities.

SAS and SPSS- accessible in EDU 248 and other campus computer labs; can be purchased from the bookstore for one academic year to use on home computer.
Criteria for Evaluation

Your grade in the course will be based on your attendance and participation, one research project, the midterm exam, two take-home assignments, and the final exam. The weights of the course elements and grading criteria are as follows:

Weights for Assignments
- Attendance and participation: 5%
- Take-home assignment I: 7.5%
- Midterm exam: 30%
- Take-home assignment II: 7.5%
- Final exam: 30%
- Research project: 20%

Criteria for Grades
- 90 - 100% = A
- 80 - 89% = B
- 70 - 79% = C
- 69% or below = F

Attendance and Participation
Attendance and participation will contribute 5% to your final grade. Students are required to attend every meeting this semester. There are many learning activities in class and after class. Students are also encouraged to actively take part in these learning activities. These activities include in-class discussions, in-class practices, take-home analyses, online testing practices, and/or group project participation. Peer evaluation of your participation in your group project will be conducted at the end of the semester.

Assignments
Two take-home assignments (either paper-and-pencil or computer assignments) will be collected and graded during the semester. One will be distributed before the midterm and the other will be distributed between the midterm and the final. These assignments will contribute 15% of the final grade.

Exams (Midterm and Final)
The examinations will each contribute 30% of the final grade. The midterm and final exams will be held on Wednesdays, February 27th and April 30th, respectively. These two exams will take place on campus so students should come to campus to take exams in person. The midterm exam covers materials from the first half of the course and the final exam covers only materials from the second half of the semester. Each
exam consists of the take-home analyses and approximately 50 in-class multiple-choice items.

Research Project
For the final 20% of the course grade, students will complete a small, empirical research project, including the calculation of relevant statistics and an interpretation of the results. The purpose of this project is to allow you to apply the statistical methods we have examined to data of interest to you. The project may be completed individually or in small, self-selected groups (no more than three to a group). Students are encouraged to use their own data, but data will also be available from the instructor.

The project requirements are to

1. Rationale and brief literature review,
2. research purpose and/or specific research question(s),
3. propose a method to answer the research question(s), including sampling, instrumentation, procedures, and statistical analysis (methods),
4. gather data and conduct relevant statistical analyses using SAS or SPSS
5. interpret descriptive statistics and inferential statistics (results)
6. Discuss your findings with relevant literature,
7. Suggestion and limitations.

The final report should be written using APA style and should contain Figures and/or Tables as needed (do not refer the reader to your output). Presentations of the proposed projects are scheduled for February 18th, 2008. The final written report is required on the day of the final examination. If time permits, oral presentations of the projects’ results will be made at the end of the semester (the week before the final examination).

Accommodation for a disability
Please notify the instructor within the first week if a reasonable accommodation for a disability is needed for the course. A letter from the Student Disability Services Office must accompany the request. Additional resource information is available through the College of Education Graduate Student Handbook.

USF Policy on Religious Observances
All students have a right to expect that the University will reasonably accommodate their religious observances, practices and beliefs. Students are expected to notify the instructor in writing by the second class if they intend to be absent for a class or announced examination, in accordance with this policy.
**USF NetID Account**

An official USF e-mail account is given to each USF student when enrolled. Every official USF correspondence to students will be sent to your USF e-mail account. To sign up for the USF NetID account and to access your account, go to [https://my.usf.edu](https://my.usf.edu)

**Academic Dishonesty**

Plagiarism is defined as “literary theft” and consists of the unattributed quotation of the exact words of a published text, or the unattributed borrowing of original ideas by paraphrase from a published text. On written papers for which the student employs information gathered from books, articles, or oral sources, each direct quotation, as well as ideas and facts that are not generally known to the public at large must be attributed to its author by means of the appropriate citation procedure. Citations may be made in footnotes or within the body of the text. Plagiarism also consists of passing off as one’s own, segments or the total of another person’s work.

Punishment for Academic Dishonesty will depend on the seriousness of the offense and may include receipt of an “F” with a numerical value of zero on the item submitted, and the “F” shall be used to determine the final course grade. It is the option of the instructor to assign the student a grade of F or FF (the latter indicating dishonesty) in the course.

**Detection of Plagiarism**

The University of South Florida has an account with an automated plagiarism detection service which allows instructors to submit student assignments to be checked for plagiarism. I reserve the right to 1) request that assignments be submitted to me as electronic files and 2) electronically submit assignments to Turnitin.com. Assignments are compared automatically with a huge database of journal articles, web articles, and previously submitted papers. The instructor receives a report showing exactly how a student’s paper was plagiarized. For more information, go to [www.turnitin.com](http://www.turnitin.com) and [http://www.ugs.usf.edu/catalogs/0304/adadap.htm#plagiarism](http://www.ugs.usf.edu/catalogs/0304/adadap.htm#plagiarism).
## Tentative Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic(s)</th>
<th>Readings &amp; Assignments</th>
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<tbody>
<tr>
<td></td>
<td><strong>PART I: Analysis of Variance</strong></td>
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<tr>
<td>Jan/07 &amp; 09</td>
<td>Course overview</td>
<td>Syllabus</td>
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<td>Introduction to SAS &amp; SPSS</td>
<td>Shavelson: Chapter 19</td>
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<td>C&amp;S (SAS): Chapter 3</td>
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<td>Chi-square tests</td>
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<td>Jan/14 &amp; 16</td>
<td>z and t tests review</td>
<td>Stevens: Chapters 1, 2 (p. 63-86), &amp; 3; C&amp;S: Ch 7</td>
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<td>Kennedy &amp; Bush</td>
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<td>One-factor ANOVA with post hoc procedures</td>
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<tr>
<td>Jan/21 &amp; 23</td>
<td>No class (Martin Luther King)</td>
<td>Stevens: Chapters 1, 2 (p. 63-86), &amp; 3; C&amp;S: Ch 7</td>
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<td>Kennedy &amp; Bush</td>
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<td>One-factor ANOVA with post hoc procedures</td>
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<tr>
<td>Jan/28 &amp; 30</td>
<td>Multiple comparisons</td>
<td>Stevens: Chapter 2 (p. 86-119); Kromrey &amp; LaRocca</td>
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<td>Feb/4 &amp; 6</td>
<td>Factorial ANOVA</td>
<td>Stevens: Chapter 4; C&amp;S Chapter 7</td>
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<td>Feb/11 &amp; 13</td>
<td>Repeated-measures ANOVA</td>
<td>Stevens: Chapter 5; C&amp;S Ch 8, Rosnow &amp; Rosenthal</td>
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<td>Project proposal presentations</td>
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<td>Midterm exam review</td>
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<td>Preparation day (No class)</td>
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<td>Midterm</td>
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<td><strong>PART II: Multiple Regression</strong></td>
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<td>Mar/03 &amp; 05</td>
<td>Correlation &amp; simple regression</td>
<td>P: Ch 1 &amp; 2; C&amp;S Ch 5</td>
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<tr>
<td>Mar/10 &amp; 15</td>
<td>Spring break (No class)</td>
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<tr>
<td>Mar/17 &amp; 19</td>
<td>Multiple Regression; Matrix Algebra?</td>
<td>P: Ch 5 &amp; 6, Appendix A; C&amp;S: Ch 9</td>
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<td>Mar/24 &amp; 26</td>
<td>AERA conference in New York (No class)</td>
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<td>Mar/31 Apr/02</td>
<td>Partial and semi-partial correlation</td>
<td>P: Ch 7</td>
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<tr>
<td>Apr/07 &amp; 09</td>
<td>Prediction with regression</td>
<td>P: Ch 8</td>
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<tr>
<td>Apr/14 &amp; 16</td>
<td>Explanation with regression</td>
<td>P: Ch 3, 9, 10, 18; Bollen &amp; Jackman; Games; Thompson</td>
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<td>Project presentations</td>
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<td>Final exam review</td>
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<td>Apr/21</td>
<td>Final preparation day (No class)</td>
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<td>Apr/28</td>
<td>Final exam and research project is due</td>
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