EDGS 5610: Quantitative Research in Education
3 units

Pre-requisite: Classified status, Introduction to Research class
Need to schedule a combination of classroom/computer lab

Course Description
The course prepares students for conducting quantitative research with educational topics. Students learn about appropriate research design methods, perform statistical analyses, and determine appropriate analyses given the research design.

Course Objectives
1. To generate testable hypotheses.
2. To understand how issues of validity and reliability factor into research design.
3. To understand various types of quantitative research methodology, and apply principles of sound research in designing studies.
4. To understand which statistical analyses should be used to test various hypotheses.
5. To utilize statistical analysis software to analyze research findings, and to understand what the statistical data means.
6. To interpret and apply assessment measures in educational settings.

Coursework is structured so that it addresses the College of Education’s Conceptual Framework, which is available at http://www.csustan.edu/AcadProg/CP/COEintro.html.

Required Materials
Text: The required text for the course is Gay, L. R. & Airasian, P. (2003). Educational research: Competencies for analysis and applications. Upper Saddle River, NJ: Merrill Prentice Hall. The bookstore carries the text bundled with SPSS, the software package that we will use for the statistical analysis portion of the class. You can also purchase the book without SPSS from Amazon.com or Barnes & Noble ($84 from both web vendors).

Web Access: All assignments will be submitted through the course website: http://blackboard.csustan.edu. It would be a good idea to set this as a Bookmark/Favorite in your browser. In addition, this site contains other information that is relevant to the class. You will also need web access for accessing research documents. Blackboard will be down for maintenance every Friday from approximately 5pm – 9pm. Plan accordingly.

Storage: You will need storage media for electronic documents. Be sure to save backups in a separate place from the original document.

General Information
• All written work must be word processed and submitted to Blackboard.
• All assignments are due at the beginning of the class indicated on the schedule. A 5% reduction of points per day will be incurred for late work, up to a maximum 50% reduction. Nothing will be accepted after the scheduled class meeting during finals week.
• No incompletes will be given in the course unless extenuating circumstances (as outlined in the CSU Stanislaus handbook) warrant this grade.
• All work must be your own, with appropriate citations included as necessary. The university retains a license to Turnitin.com, a plagiarism detection service; your materials will be submitted for screening. The result of plagiarism will be a failing grade for the assignment or the course, as outlined in the CSU Stanislaus Handbook.
• Please be prompt for class. Tardiness disrupts everyone.
• In-class exams will be taken when scheduled.
• Participation and attendance will not factor specifically into your grade. However, classes are designed to be interactive and learner-oriented. Missing class or choosing not to participate deprives you from learning opportunities.

Grading Procedures

<table>
<thead>
<tr>
<th>Tasks</th>
<th>50 points</th>
<th>Points will be summed. Final grades will be awarded based on the following percentages:</th>
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</thead>
<tbody>
<tr>
<td>Midterm Exam</td>
<td>50 points</td>
<td>A: 93+</td>
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<tr>
<td>Final Exam</td>
<td>50 points</td>
<td>A-: 90-92</td>
</tr>
<tr>
<td>Statistics Exam</td>
<td>50 points</td>
<td>B+: 87-89</td>
</tr>
<tr>
<td>Research Proposal</td>
<td>50 points</td>
<td>B: 83-86</td>
</tr>
<tr>
<td>TOTAL</td>
<td>250 points</td>
<td>C+: 77-79</td>
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<td></td>
<td></td>
<td>C: 73-76</td>
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<td></td>
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<td>C-: 70-72</td>
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<td>D+: 67-69</td>
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<td></td>
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<td>D: 63-66</td>
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Tasks
These are small assignments that either build toward your proposal or are activities involving SPSS. They will be described in detail in class, with a written explanation also posted in Blackboard. Each is worth 5-10 points for satisfactory completion; you will be asked to revise if the result is not satisfactory. Deadlines are flexible for the tasks related to your prospectus, though suggested due dates will be noted so that feedback can be timely.

Midterm Exam
The exam will include 50 multiple choice and short answer items on material covered in the book and in the first six class meetings. The test will be similar in format to the practice questions at the text website. It is a closed-book, closed-note individual exam.

Final Exam
The exam will include 50 multiple choice and short answer items. It will cover material from the book and class after the midterm. The test will be similar in format to the practice questions at the text website. It is a closed-book, closed-note individual exam.

Statistics Exam (Take-Home)
This is an open-book, open-note individual exam. You may not work with other members of the class on the exam. The test will require you to perform statistical analyses using SPSS and write up the results in a word processor.
Research Proposal
The research proposal is an introduction to and overview of a research topic. The length should be approximately 10-15 double-spaced pages, plus references, and the document should be consistent with APA format. The proposal may be a draft of what you may choose to more fully develop, in consultation with your thesis committee chair and members, as your thesis or project topic. That will be your choice. Whether you choose to more fully develop the idea, the proposal will serve to demonstrate your ability to structure a successful and meaningful study.

The proposal should include the following, using headers to denote the sections. A grading rubric is posted in Blackboard.

- Title
- Introduction
- Statement of the Problem
- Significance of the Problem
- Research Question(s) and Hypothesis(es)
- Theory
- Review of Literature
  - Develop a review of the relevant literature related to your topic. The review should give the reader a sense of what has already been studied. It will be more condensed than what you will ultimately include in chapter 2 of a project/thesis. You may incorporate material that you developed in the literature review prepared in the Introduction to Research class, refining and adapting as necessary.
- Research Design
  - Sample
  - Method
  - Data Analysis
- References in APA format
<table>
<thead>
<tr>
<th>Class</th>
<th>Topic(s)</th>
<th>Reading</th>
<th>Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to Course, General Characteristics of Empirical Research</td>
<td>Gay &amp; Airasian: Chapter 4 (p. 101-116)</td>
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<tr>
<td>3</td>
<td>Instruments, Validity and Reliability, Writing the Methodology</td>
<td>Gay &amp; Airasian: Chapter 5 (p. 123-153)</td>
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<tr>
<td>4</td>
<td>Descriptive Research (Method, Statistics, Presenting Findings)</td>
<td>Gay &amp; Airasian: Chapter 14 (p. 409-426)</td>
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<td>5</td>
<td>Survey Research (Method, Presenting Findings)</td>
<td>Gay &amp; Airasian: Chapter 10 (p.277-305); Chapter 15 (p. 445-456; 478-485)</td>
<td>Narins (Web)</td>
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<td>6</td>
<td>Survey Research (Statistics)</td>
<td>Lowry (Web)</td>
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<td>7</td>
<td>Correlational Research (Method, Statistics, Presenting Findings)</td>
<td>Barry (Web)</td>
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<td>8</td>
<td>Correlational Research (Method, Statistics, Presenting Findings)</td>
<td>Gay &amp; Airasian: Chapter 11 (p. 311-331); Chapter 14 (434-439)</td>
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<td>9</td>
<td>Causal-Comparative Research (Methods, Presenting Findings)</td>
<td>Gay &amp; Airasian: Chapter 12 (p.337-349); Chapter 15 (p. 456-467)</td>
<td>Proposal</td>
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<td>10</td>
<td>Causal-Comparative Research (Statistics)</td>
<td>Gay &amp; Airasian: Chapter 13 (p. 355-397); Chapter 15 (p. 467-477)</td>
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<td>11</td>
<td>Causal-Comparative Research (Statistics)</td>
<td>Gay &amp; Airasian: Chapter 16</td>
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<td>12</td>
<td>Program Evaluation</td>
<td>Trochim (Web)</td>
<td>Statistics</td>
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<td>13</td>
<td>Testing and Assessment</td>
<td>Ananda (Web)</td>
<td>Exam</td>
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<tr>
<td>14</td>
<td>FINAL EXAM</td>
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**Reading List**


