AHE 611
QUANTITATIVE ANALYSIS IN EDUCATIONAL RESEARCH I
Credits: 3 (Community College Leadership Course)
Summer 20XX
Ecampus Online Course

INSTRUCTOR
Lucy Arellano, Ph.D
Assistant Professor
College of Education
e-mail: lucy.arellano@oregonstate.edu
Office Hours: Available anytime by appointment

OVERVIEW

This course is designed to provide students with a foundation to understand the broad methods that are used in quantitative educational research. Each of the units covered corresponds to a major topic of inquiry in quantitative analyses. Students will explore the epistemology associated with research in higher education while working through concepts that are designed to sharpen data analysis skills. The course will assist students to understand the purpose of data analysis, examine alternative statistical procedures, and acquire skills and techniques for using, understanding, and interpreting results appropriately. Students will also develop expertise in analytics using statistical software. This course will prepare students for future coursework that focuses on more advanced quantitative research methods within postsecondary environments. This online course combines approximately 90 hours of instruction, online activities, and assignments throughout the term for 3 credits.

STUDENT LEARNING OUTCOMES

Upon completion of this course, the student will be able to:

1) Comprehend and deal with uncertainty, variability, and statistical information in everyday life;
2) Contribute to and take part in the production, interpretation, and communication of data pertaining to issues encountered in their roles as higher education professionals;
3) Develop an understanding of statistical theories and procedures as a foundation for future studies and educational research;
4) Acquire basic concepts necessary for understanding descriptive and inferential statistics;
5) Apply statistical procedures to educational data in an appropriate manner;
6) Envision, plan, administer, compile, and code a Likert-based survey;
7) Analyze, understand, and interpret statistical techniques and quantitative analyses;
8) Write up quantitative results evidencing statistical reasoning while applying educational and practical interpretation;
9) Explore epistemological issues related to quantitative analysis in higher education and reflect on their own epistemological development and perspectives.
In addition to the required texts identified below, additional resources will also be integrated into the course content. Journal articles, supplemental readings, and multimedia elements will be posted to the class online site. The primary textbooks for the course are:

**Required Text:**

**Strongly Recommended:**


**Statistical Software**
Statistical Package for the Social Sciences (SPSS). The most current version is 22, but anything after version 17 should still be compatible.

Microsoft Excel: any version after 2003 is perfectly fine.

### COURSE OUTLINE & SCHEDULE

<table>
<thead>
<tr>
<th>Week #</th>
<th>Topics</th>
<th>Reading Assignments</th>
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</thead>
<tbody>
<tr>
<td>1 &amp; 2</td>
<td>Introduction to Statistics, Means, Averages, and SPSS Intro Assignment: Create quantitative survey to administer at a community college</td>
<td>• Chapter 1</td>
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<td>• Chapter 2</td>
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<td>• Appendix A (SPSS)</td>
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<td>3</td>
<td>Variability, Standard Deviation, and Illustrating Data Asst: Hypothesis testing from Community College Dataset</td>
<td>• Chapter 3</td>
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<td>• Chapter 4</td>
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<td>4</td>
<td>Correlation, Reliability, and Variability Asst: Finalize and administer survey at a community college</td>
<td>• Chapter 5</td>
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<td>• Chapter 6</td>
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<td>5</td>
<td>Hypotheses, Probability, and Normal Curves Asst: Input survey results into Excel and import into SPSS</td>
<td>• Chapter 7</td>
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<td>• Chapter 8</td>
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<td>6</td>
<td>Significance and One-Sample Z-Test Asst: Discuss epistemology, significant and meaningfulness</td>
<td>• Chapter 9</td>
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<td>• Chapter 10</td>
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<td>7</td>
<td>T-tests for Independent and Dependent Samples Asst: Analyze data for two groups as in/dependent sample</td>
<td>• Chapter 11</td>
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<td>• Chapter 12</td>
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<td>8</td>
<td>ANOVA, Factorial ANOVA, and Interaction Effects Asst: Examine interaction effects within higher education</td>
<td>• Chapter 13</td>
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<td>• Chapter 14</td>
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<td>9</td>
<td>Correlation Coefficients, Prediction, and Linear Regression Asst: Create a predictive model of an educational outcome</td>
<td>• Chapter 15</td>
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<td>• Chapter 16</td>
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<td>10</td>
<td>Non-Normality, Chi-square, and Advanced Statistical Methods Asst: Design your study utilizing 9 advanced stats methods</td>
<td>• Chapter 17</td>
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<td>• Chapter 18</td>
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ASSIGNMENTS

Note: All written assignments should conform to APA 6th edition style guidelines. This includes the following formatting: double-spaced, Times New Roman 12-point font, and one-inch margins.

WEEKLY ASSIGNMENTS & QUIZZES (80%)
Each week an assignment will be uploaded to the online course website for students to complete. It will bring together the concepts from the readings and require students to interact with SPSS in order to complete the assignment. They are due on Saturdays at 11:59pm PST via course website submission. The document should be a Microsoft Word file with all components included in a single file (i.e. graphs, tables, etc.). Each weekly assignment will outline more specific instructions.

ARTICLE CRITIQUE (20%)
An article critique will serve as the final assignment for the class. The paper should be approximately 5 pages (not to exceed 7) of text in length (not including graphs, tables, appendices, or bibliography). This final project will allow demonstration of the mastery of skills developed throughout the course. Students will select a higher education research journal article from a number of sources uploaded to the course website. Further instructions on this assignment will be forthcoming in the latter half of the term.

ONLINE COURSE DISCUSSIONS (EXTRA CREDIT)
Blackboard Discussion Boards will be organized by week throughout the term. Students should use this space to ask questions about course content and assignments to class peers as well as the instructor. Any student who responds to their peer’s question will receive extra credit.

EVALUATION

Student performance will be evaluated based on the timely completion and quality of assignments and online interaction. Late assignments will be penalized accordingly.

GRADES
Grades in this course will be determined by weighting the following evaluation measures as indicated:

<table>
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<tr>
<th>Evaluation Measure</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Weekly Assignments &amp; Quizzes</td>
<td>80%</td>
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<tr>
<td>Article Critique</td>
<td>20%</td>
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<tr>
<td>Online Course Discussions (Extra Credit)</td>
<td>100%</td>
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GRADING

A = 90-100%
B = 80-89%
C = 70-79%
D = 60-69%
F = below 60%
I = Incomplete

“+” and “-” grade designations may be used at the discretion of the instructor.

1 An incomplete (I) grade will be given only in exceptional cases involving serious personal circumstances (e.g. major illness). In the event an “I” grade is requested, the student shall petition the instructor giving appropriate documentation. The petitioner should have discussed the matter with the instructor prior to the last class session and received informal approval. Students with an “I” grade have only one quarter to complete the work.
INFORMATION ON UNIVERSITY-WIDE POLICIES AND RESOURCES

Academic Integrity
You should refer to university policies on behaviors such as plagiarism, course withdrawal, and other such matters. Plagiarism is academic theft and includes the improper use of documentation as well as the more egregious and blatant behavior of copying the work of others or using other people’s ideas as your own. Students should read and be familiar with the University policy on academic integrity.

Students are expected to do their own work without collaboration with others, unless otherwise directed by the instructor (e.g. group projects). Plagiarism in any form is unacceptable and subject to penalty in accordance with University policy. Students are expected to demonstrate the highest standards of academic integrity and honesty consistent with university expectations.

Oregon State University’s Student Conduct Code can be found at: http://oregonstate.edu/studentconduct/offenses-0

Students with Disabilities
Oregon State University is committed to student success; however, we do not require students to use accommodations nor will we provide them unless they are requested by the student. The student, as a legal adult, is responsible to request appropriate accommodations. The student must take the lead in applying to Disability Access Services (DAS) and submit requests for accommodations each term through DAS Online. OSU students apply to DAS and request accommodations at our Getting Started with DAS page: http://ds.oregonstate.edu/gettingstarted

Writing & Stylistics
There is considerable importance attached to what is referred to as style in written work. Appendix A in the APA manual offers some direction on general matters. Additional resources on composition and style include:


For further help on APA style, students may consult the American Psychological Association’s website at: http://www.apastyle.org/learn/index.aspx and Purdue OWL:APA Formatting and Style Guide at: https://owl.english.purdue.edu/owl/resource/560/01

Students can get on campus help with their writing through the Writing Center located at Waldo 123. For hours and additional information, visit: http://writingcenter.oregonstate.edu/writing-center-descrip

The Online Writing Lab offers online appointments. For additional information, visit: http://cwl.oregonstate.edu/owl.php

NOTE: This syllabus serves the student only as a general guideline. The instructor reserves the right to add, delete, or clarify the contents as needed to meet course requirements.