

# Argosy University

## COURSE SYLLABUS

R7031

*Methods and Analysis of Quantitative Research*

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### Faculty Information

**Faculty Name:** Benjamin F. Baab, Ed.D.

**Campus:** San Francisco Bay Area

**Contact Information:** [bbaab@argosy.edu](mailto:bbaab@argosy.edu); 925-285-1068; IM(MSN/Google Talk):

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**Office Hours:** via phone, e-mail, or chat: Wednesdays 4-5pm or at other times in person by prior arrangement

**Short Faculty Bio:** BA(SFSU) & MA(UCB) in Mathematics; Ed.D. (USF) in Curriculum and Instruction; Research interests include instructional technology, especially math-related; information technology; research methods; statistics; free, open-source software

### Course description:

This is an introductory course that focuses on descriptive and inferential statistical methods across the disciplines of business, education, and behavioral sciences. The material presented will include conceptual understanding and practical application of data entry, analysis, and interpretation. The student will critique descriptive research studies. Computer applications, logistical issues of data collection, and ethical considerations are examined. Upon completion of this course, students will be able to produce a final project that will include application, analysis, and interpretation of a data set. It is recommended that students have a minimum working knowledge of basic Excel or SPSS functions prior to taking this course.

### Course Prerequisite:

**R7001.** It is also recommended that students have a minimum working knowledge of basic Excel or SPSS functions prior to taking this course.

### Required Textbooks:

Steinberg, W. J. (2008). *Statistics Alive!* Sage Publications, Inc.

ISBN-10: 1412956595 or ISBN-13: 978-1412956598

**The text comes as a stand alone (ISBN: 9781412956574) or as a bundle that includes a copy of SPSS Student Version 16.0(listed above). The SPSS student version is a full version of the SPSS Base software but is limited to 50 variables and 1500 cases. The 16.0 release of this software is only available for Windows and will expire 4 years after the software is installed. SPSS add-on modules cannot be added to this package.**

Cronk, B. C. (2008). *How to Use SPSS: A Step-by-Step Guide to Analysis and Interpretation* (5th Ed.)

ISBN 1-884585-79-5

## **SPSS CHOICES**

### **Four Year Licenses:**

#### **Career Starter**

Each SPSS Career Starter comes with a fully functioning copy of the data analysis software, SPSS Base for Windows, and the SPSS Brief Guide. Retail cost is about \$99 a copy and can be sold through the bookstore (MBS), or directly from SPSS with a volume purchase.

#### **Graduate Pack**

Each Graduate Pack is a full version of SPSS Base, Advanced Models, and Regression Models for students to use at home and comes with the SPSS Brief Guide. Retail cost is about \$199 a copy and can be sold through the bookstore (MBS), purchased via [www.journeyed.com](http://www.journeyed.com), or directly from SPSS with a volume purchase.

### **Expiring 6 or 12 month Licenses:**

#### **E-Academy**

Expiring licenses of SPSS Base or SPSS Base, Advanced Models and Regression Models sold through <http://www.e-academy.com>

### **Recommended Readings:**

Huff, D. (1993). *How to Lie With Statistics*. W. W. Norton & Company.  
ISBN-10: 0393310728, ISBN-13: 978-0393310726

George, D. & Mallery, P. (2007). *SPSS for Windows Step-by-Step: A Simple Guide and Reference*, 15.0 Update (8th Edition). Allyn & Bacon.  
ISBN-10: 0205569072, ISBN-13: 978-0205569076

Salkind, N.J. (2007). *Statistics for People Who (Think They) Hate Statistics*. Sage Publications.  
ISBN-10: 1412951496; ISBN-13: 978-1412951494

Vogt, W.P (2005). *Dictionary of Statistics & Methodology: A Nontechnical Guide for the Social Sciences*.  
ISBN-10: 0761988548; ISBN-13: 978-0761988540

Weaver, A. (2005). *Good-Natured Statistics*. Bookman Publishing.  
ISBN-10: 1594536392; ISBN-13: 978-1594536397

#### **Other Reference:**

American Psychological Association. (2001). *Publication manual of the American Psychological Association*. 5<sup>th</sup> ed. Washington, D.C.: Author. ISBN: 1557987912

**Course length:** 7.5 Weeks

**Contact Hours:** 45 Hours

**Credit Value:** 3.0

**Program Outcomes:**

- 1.0 Research and Theory** - Educational Leaders make decisions based on research and supported theory.
- 2.0 Communication and Informational Literacy** - Educational Leaders effectively communicate a vision of educational excellence to the learning community.
- 3.0 Critical Thinking/Problem Solving** - Educational Leaders develop systems to check their own thinking, to reflect on present and past practices in considering the future and to analyze complex issues and to evaluate potential solutions.
- 4.0 Collaboration** - Educational Leaders promote democratic values and social justice by respecting the ideas and gifts of those with whose care they are charged.
- 5.0 Educational Leadership** - Educational Leaders have an evolved leadership style that supports the development of others, is harmonious with democratic principles and best educational practices and focuses on student achievement as the ultimate goal of the learning community.
- 6.0 Ethics/Principles** - Educational Leaders are bold in exhibiting and expecting accountability in integrity, fairness and ethical behavior.
- 7.0 Diversity** - Educational Leaders appreciate the value of every individual and are committed to their success.
- 8.0 Human Growth and Development** - Educational Leaders consider the personal and professional continuum of development of their various constituencies and use this knowledge in all phases of their work from curriculum planning to staff development.

**Additional Research Program Outcomes:**

Students as scholar-practitioners develop skills in inquiry, critical thinking, scholarly writing, and decision making by:

- 1. Analyzing and evaluating professional literature to make evidence-based decisions related to current practices in the field.
- 2. Analyzing, designing, conducting, and defending research in their disciplinary context using appropriate research designs.
- 3. Producing and defending a rigorous and credible dissertation

**Course Objectives:**

- 1. Review the philosophy of quantitative research methodology
- 2. Perform statistical analysis including descriptive statistics, parametric, and non-parametric statistics.
- 3. Interpret results of data analysis based on hypothesis testing.
- 4. Apply statistical techniques to appropriate questions.
- 5. Identify uses and limitations of quantitative research.
- 6. Carry out statistical analysis using SPSS.
- 7. Apply appropriate terminologies of quantitative research methodologies
- 8. Structure and write a results section for a quantitative study

**Assignment Table**

<b>Class</b>	<b>Topics</b>	<b>Readings</b>	<b>Assignments</b>
1	Introduction to Quantitative Research, SPSS, Measurement Levels, Frequency Tables, and Graphs	Steinberg: Mod 1-4 Cronk: Ch 1-2, 4	Levels of measurement Types of graphs

2	Measures of Central Tendency, Measures of Dispersion, Correlation, Regression, Reliability, Validity	Steinberg: Mod 5-6, 34-37 Cronk: Ch 3, 5.1, 5.3, 8	Research Worksheet 1
3	Normal Distribution, z Scores, Transformations	Steinberg: Mod 7-9	Research Worksheet 2 Statistical Report 1
4	Hypothesis Testing, Sampling, Types of Errors, Statistical Significance, Effect Size, Power	Steinberg: Mod 12-14, 32, 33 Cronk: Appendix A	Statistical Report 2
5	Comparing Two Groups	Steinberg: Mod 15-23 Cronk: Ch 6.1-6.4	Research Worksheet 3 Statistical Report 3
6	Comparing Multiple Groups, Inferential Correlation, Simple Regression/Prediction	Steinberg: Mod 24-29, 38 Cronk: Ch 6.4-6.10	Research Worksheet 4 Article Presentations
7	Nonparametric Statistics	Steinberg: Mod 30-31 Cronk: Ch 7	Statistical Report 4 Article Presentations

### Key Course Assessments

Students will compose sample Results sections based on the compilation, organization, analysis, and interpretation of statistical data. Students will demonstrate clarity and precision in reporting numerical results according to APA formatting guidelines.

Students will review, analyze, and critique published statistical reports and quantitative research articles.

Each student will choose a quantitative research article, subject to instructor approval, and present a concise and accurate explanation of the methods and results sections of the article.

### Grading Criteria

#### *Grading Scale*

<b>A</b>	100 – 93
<b>A-</b>	92 – 90
<b>B+</b>	89 – 88
<b>B</b>	87 – 83
<b>B-</b>	82 – 80
<b>C+</b>	79 – 78
<b>C</b>	77 - 73
<b>C-</b>	72 – 70
<b>F</b>	69 and below

#### *Grading requirements*

<i>Attendance/participation</i>	<i>25%</i>
<i>Statistical Reports</i>	<i>40%</i>
<i>Research Worksheets</i>	<i>20%</i>
<i>Research Article Presentation</i>	<i>15%</i>
<i>Total</i>	<i>100%</i>

### Library

*All resources in Argosy University's online collection are available through the Internet. The campus librarian will provide students with links, user IDs, and passwords.*

Library Resources: Argosy University's core online collection features nearly 21,000 full-text journals and 23,000 electronic books and other content covering all academic subject areas including Business &

Economics, Career & General Education, Computers, Engineering & Applied Science, Humanities, Science, Medicine & Allied Health, and Social & Behavior Sciences. Many titles are directly accessible through the Online Public Access Catalog at <http://library.argosyu.edu>. Detailed descriptions of online resources are located at <http://library.argosyu.edu/misc/onlinedblist.html>.

In addition to online resources, Argosy University's onsite collections contain a wealth of subject-specific research materials searchable in the Online Public Access Catalog. Catalog searching is easily limited to individual campus collections. Alternatively, students can search combined collections of all Argosy University Libraries. Students are encouraged to seek research and reference assistance from campus librarians.

Information Literacy: Argosy University's Information Literacy Tutorial was developed to teach students fundamental and transferable research skills. The tutorial consists of five modules where students learn to select sources appropriate for academic-level research, search periodical indexes and search engines, and evaluate and cite information. In the tutorial, students study concepts and practice them through interactions. At the conclusion of each module, they can test their comprehension and receive immediate feedback. Each module takes less than 20 minutes to complete. Please view the tutorial at <http://library.argosyu.edu/infolit/>

### **Academic Policies**

Academic Dishonesty/Plagiarism: In an effort to foster a spirit of honesty and integrity during the learning process, Argosy University requires that the submission of all course assignments represent the original work produced by that student. All sources must be documented through normal scholarly references/citations and all work must be submitted using the *Publication Manual of the American Psychological Association, 5<sup>th</sup> Edition (2001)*. Washington DC: American Psychological Association (APA) format. Please refer to Appendix A in the *Publication Manual of the American Psychological Association, 5<sup>th</sup> Edition* for thesis and paper format. Students are encouraged to purchase this manual (required in some courses) and become familiar with its content as well as consult the Argosy University catalog for further information regarding academic dishonesty and plagiarism.

Scholarly writing: The faculty at Argosy University is dedicated to providing a learning environment that supports scholarly and ethical writing, free from academic dishonesty and plagiarism. This includes the proper and appropriate referencing of all sources. You may be asked to submit your course assignments through "Turnitin," ([www.turnitin.com](http://www.turnitin.com)), an online resource established to help educators develop writing/research skills and detect potential cases of academic dishonesty. Turnitin compares submitted papers to billions of pages of content and provides a comparison report to your instructor. This comparison detects papers that share common information and duplicative language.

### **Americans with Disabilities Act Policy**

It is the policy of Argosy University to make reasonable accommodations for qualified students with disabilities, in accordance with the Americans with Disabilities Act (ADA). If a student with disabilities needs accommodations, the student must notify the Director of Student Services. Procedures for documenting student disability and the development of reasonable accommodations will be provided to the student upon request.

Students will be notified by the Director of Student Services when each request for accommodation is approved or denied in writing via a designated form. To receive accommodation in class, it is the student's responsibility to present the form (at his or her discretion) to the instructor. In an effort to

protect student privacy, the Department of Student Services will not discuss the accommodation needs of any student with instructors. Faculty may not make accommodations for individuals who have not been approved in this manner.

### **The Argosy University Statement Regarding Diversity**

Argosy University prepares students to serve populations with diverse social, ethnic, economic, and educational experiences. Both the academic and training curricula are designed to provide an environment in which students can develop the skills and attitudes essential to working with people from a wide range of backgrounds.