Comm 402: Seminar in Quantitative Methods in Communication

Course Description:

This course is an introduction to quantitative research methods in the study of communication and other social sciences. The course will include issues of measurement, data collection, design, and statistical analysis.

Rationale:

A certain accumulation of knowledge and skill is expected of anyone receiving a graduate degree in Communication. While this includes a topic area of expertise, it also includes some more general knowledge of communication research. So while individuals may specialize in interpersonal communication instead of rhetoric, they are expected to have some basic knowledge of those other areas in the field. In the same way, individuals are expected to have a general knowledge of research methods. So while individuals may specialize in qualitative methods of research, they will still be expected to have a basic understanding of quantitative methods. This course is designed to give students that basic understanding of quantitative research methods that is expected of someone with a Ph.D. in Communication. It is also valuable to the Master's degree student who desires an understanding of various research methods.

Some Course Assumptions:

1. Graduate students recognize the importance of attendance and deadlines, and the dangers of plagiarism, etc.
2. Many of the students taking this class are reticent of math in general, and statistics in particular. Others enjoy math and statistics.
3. Students and the professor will understand more about quantitative research at the end of the semester than they did at the beginning of the semester.
4. The class will seem less like a seminar than some courses I teach due to the nature of the material and the lack of familiarity of this information to many students. However, questions are encouraged and discussion will be promoted when it is beneficial.
5. Everyone has the potential to do well in this class.

Course Objectives: Upon completion of this course, the student should be able to:

1. Read, comprehend, and evaluate communication research involving quantitative data collection and analyses.
2. Compute (with a calculator) simple quantitative analyses.
3. With minimal assistance, use a computer program to compute more complex quantitative analyses.
4. Design, collect, and analyze data for a simple quantitative communication study.

Textbooks (3 required):

Morgan, S. E., Reichert, T., & Harrison, T. R. (2002). *From numbers to words: Reporting statistical results for the social sciences.* Boston, MA: Allyn and Bacon.

Pavkov, T. W. (2003). *Ready, set, go! A student guide to SPSS 11.0 for Windows*. Boston, MA: McGraw Hill.

Williams, F., & Monge, P. (2001). *Reasoning with statistics: How to read quantitative research*. Ft. Worth, TX: Harcourt.

Articles Selected as Examples of Statistical Procedures (in order of use):

O'Keefe, D.J., & Figge, M. (1999). Guilt and expected guilt in the door-in-the-face technique. *Communication Monographs, 66*, 312-324. (t-tests)

Rimal, R. N., & Real, K. (2003). Perceived risk and efficacy beliefs as motivators of change; Use of the risk perception attitude (RPA) framework to understand health behaviors. *Human Communication Research, 29,* 370-399. (ANOVA)

Benoit, W.L., & Harthcock, A. (1999). Functions of the great debates: Acclaims, attacks, and defenses in the 1960 presidential debates. *Communication Monographs, 66*, 341-357. (chi-square)

Schrodt, P. (2003). Students' appraisals of instructors as a function of students' perceptions of instructors' aggressive communication. *Communication Education, 52,* 106-121. (correlation)

Eastman, S. T., Newton, G. D., & Bolls, P. D. (2003). How promotional content changes ratings: The impact of appleas, humor, and presentation. *Journal of Applied Communication Research, 31,* 238-259. (regression)

Schrodt, P., Cawyer, C. S., & Sanders, R. (2003). An examination of academic mentoring behaviors and new faculty members' satisfaction with socialization and tenure and promotion processes. *Communication Education, 52,* 17-29. (factor analysis, MANOVA, and chi-square)

Dutta-Bergman, M. J. (2003). Health communication on the web: The roles of web use motivation and information completeness. *Communication Monographs, 70,* 264-274. (factor analysis, ANOVA)

Grading: There are four parts to the course grade, each accounting for @1/4.

1. Homework (total of 1/4): In addition to readings, homework (marked with *) will include conceptual and computational homework initially, but will also include turning in computer printouts to indicate correct use of the computer. These are designed to insure that you understand the ideas conceptually and have the skills to carry out basic quantitative research. Most of these will be based on data that I provide you. If these were due the next class period, then you would be receiving homework back on skills learned two weeks previously, which is not a good teaching strategy. In light of this, **homework is always due by Monday at Noon** (or any time sooner) so that I may grade and return it to you for class at 3:30 on Tuesdays. Exceptions can be discussed for those of you who do not frequent Switzler Hall on Mondays.

2. There will be two examinations (each 1/4). Part of the first exam will include computations. Calculators will be allowed on this portion. You will <u>not</u> have to memorize formulas, but must be able to recognize and use the correct ones. Other portions of the exams will include multiple choice, fill in the blanks, define terms, brief essays, etc. The second exam will be similar with an emphasis on being able to determine the appropriate type of analysis and on being able to read a print out for the correct information.

3. You will design, collect, and analyze data for a simple quantitative communication study and present your findings to the class (1/4). A brief proposal of this research is due no later than Tuesday, February 29 and the final completed project is due no later than Tuesday, May 4. Begin thinking about this already. Individual conferences to discuss you proposal are probably a necessity. You may simply do a replication of some previous study because you are suspicious of the findings perhaps due to how old the study is. You might have some new idea that you are interested in testing through a quantitative method. It is very important to keep this simple. Having a theoretical perspective for your study is advantageous, particularly if you think that you will want to present your paper as a conference paper in the future. We will discuss your need for Institutional Review Board (IRB) approval. You probably want to use students as subjects or some unobtrusive data collection technique.

   On May 11, you will turn in an article-type manuscript including a rationale for doing the study, a brief review of literature, research questions or hypotheses, method, data analysis/results, and findings/discussion. The quality and not the quantity of the paper is the issue. You will also present the findings to the class as an oral report.

Tentative Schedule Topics for Discussion		Reading Assignments	Homework Due Following Monday
1. Tues Jan 20	Introduction to class Scientific Research	No reading	*Quantitative vs. Qualitative
2. Tues Jan 27	Research Designs Operationalizing Variables	W & M Ch 1 & 2 SPSS Ch 1 M, R, & H Ch 1	*Creating a Data File
3. Tues Feb 3	Methods of Measurements Validity and Reliability	W & M Ch 3 SPSS Ch 2 & 3 M, R, & H Ch 3 & 4	*SPSS Introduction
4. Tues Feb 10	Distributions Variance	W & M Ch 4	*SPSS Frequencies/Reliabilities
5. Tues Feb 17	Populations Sampling Probability	W & M Ch 5	
6. Tues Feb 24	Hypothesis Testing Type I & II Errors Review	W & M Ch 6	*Brief Project Proposal Due
7. Tues Mar 2	First Examination	No Readings	
8. Tues Mar 9	T-tests & computations	W & M Ch 7 SPSS Ch 4 & 5 M, R, & H p. 54	*SPSS t-tests
9. Tues Mar 16	Example of T-test article Analysis of Variance (ANOVA) Multi-factor ANOVA	O'Keefe & Figge 1999 W & M Ch 8, 9 SPSS 6 & 7 M, R, & H pp. 55-67	*SPSS ANOVA

Spring Break—March 20-March 28

10. Tues Mar 30	Example of ANOVA article Nonparametric Tests—Chi-square	Rimal & Real, 2003 W & M Ch 10 SPSS Ch 10 M, R, & H Ch 6	*SPSS Chi-square
11. Tues Apr 6	Example of Chi-square article Correlations Partial Correlation	Benoit & Harthcock, 1999 W & M Ch 11 SPSS Ch 8 M, R, & H Ch 5	*SPSS Correlation
12. Tues Apr 13	Example of Correlation article Regression Multiple Regression	Schrodt, 2003 W & M Ch 12 & 13 SPSS 9 M, R, & H pp. 69-76	*SPSS Regression
13. Tues Apr 20	Example of regression article Factor Analysis	Eastman et al., 2003 W & M Ch 14	

14. Tues Apr 27   Article discussions   Schrodt et al., 2003
                         Ethics and Research Boards   Dutta-Bergman, 2003
                         Review and course evaluations M, R, & H Ch 2 & 9

15. Tues May 4   Final Examination

16. Tues May 11 Presentations of Projects (8 minute summaries—need to keep these short or we'll run long)