

PSY 713A COURSE SYLLABUS
Statistics & Computer Applications to Research
Fall Semester, 2003

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Office hours: Mondays: 10:00 am – noon; Tuesdays: 1:00 pm – 4:30 pm;
Wednesdays: noon – 2:00 pm; Thursdays: 1:00 pm – 4:30 pm

Catalog Description:

713A is the first course in the doctoral Advanced Research Core sequence. Complex data analysis and interpretation of multivariate topics with the use of statistical analysis packages (e.g., SPSS for Windows) and computer application to research and educational problems in order to facilitate research development and production in addition to consumerism. Course will include extra class requirements entailing time in the computer lab to complete assignments. Prerequisite: admission to the doctoral program and successful completion of masters' level statistics course

Expanded Description:

Psychology 713A focuses on quantitative and qualitative research. Students work with data collection in the field as well as with archival data. The course emphasizes the logic of research and the relationship between research problem/hypothesis, design and data analysis. It is expected that students will have completed the master's core research series prior to enrolling in the course.

Relationship to Knowledge Base Model:

This course provides a methodology necessary to evaluate research data and generate research in psychology and education. Students will expand upon the data analysis and multivariate topics covered in the masters' core research series and add additional multivariate techniques to their repertoire. The course provides students an opportunity to design and fully execute a small-scale research study, which may become a basis for later dissertation work or professional research. Students will be expected to demonstrate innovation and accuracy in building a research initiative. A multicultural perspective, as it relates to the scientific evaluation of data through statistics, involves consideration of gender, class, and race/ethnicity.

Relationship to Programs:

This course is the first in a series of four doctoral Advanced Research and Statistical Analysis courses. The course is designed to assist students in beginning a research program, which entails the use of advanced statistical skills and ability to read and incorporate psychological literature into an organized research proposal. The student should be able to use the skills for advancement to more complex research/statistical procedures and as a basis for building a dissertation proposal. Also, the course will help prepare students for the doctoral Qualifying Examinations in Research and Statistical Tools.

Overall Objectives/Learning Outcomes/Learning Competencies:

1. To demonstrate an understanding of the relationship of statistical principles to research methodology in psychology and education'
2. To further develop students' skills in the preparation of research proposals and reports utilizing psychological literature and advanced statistical procedures;
3. To further develop students' skills in selecting and utilizing appropriate statistical techniques to answer research questions;
4. To demonstrate a more advanced knowledge of major concepts of inferential statistical techniques: Sampling distributions, Type I and II errors, statistical power, sample size, effect size and magnitude.
5. To demonstrate skill in computation and interpretation of the major inferential statistical techniques used in contemporary research in psychology and education; ANOVA (simple and complex), correlation (simple and multiple), MANCOVA, ANCOVA, nonparametric, and post-hoc tests.
6. To become familiar with and start the use of computer software for research and statistical purposes.

Course Audience: students enrolled in the doctoral level psychology programs.

TEXTS/Learning Resources:

American Psychiatric Association (2001). *Diagnostic and Statistical Manual of Mental Disorders - TR* (4th ed.). Washington, DC: Author.

Green, S. & Salkind, N. (2003). *Using SPSS for Windows and Macintosh*. New Jersey: Prentice Hall.

SPSS Graduate Pack. (2002). *Base 11.0 and advanced models*. (Applications guide and advanced models). Chicago, IL: SPSS Inc.

Articles/Chapters as assigned.

Methods of Instruction:

The course will utilize many methods of instruction including lectures, discussions, handouts, paper assignments, media reviews, and practicing clinical skills in pairs (incoming-advanced students).

Academic Honesty:

Academic honesty is fundamental to the activities and principles of any university. All members of the academic community must be confident that each person's work has been responsibly and honestly acquired, developed, and presented. Any effort to gain an advantage not given to all students is dishonest, whether or not the effort was successful. The academic community regards academic dishonesty as an extremely serious matter, with serious

consequences that range from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting, or collaboration, please consult the course instructor or your advisor.

Americans with Disabilities Act:

Students with disabilities should contact the Office for Students with Disabilities to self-identify their needs in order to facilitate their rights under the American with Disabilities Act. The Office for Students with Disabilities is located in Room 17, Campus Center.

Student Requirements/Evaluation:

Attendance and participation is required. Please make every attempt to attend all class meetings on time. These provide the "instruction" for you to develop more as a psychologist/researcher. Tardiness or absence during class meetings: You are expected to arrive on time and remain in class.

The purchase of assigned texts/applications is mandatory. The computer program is fundamental for many assignments and the texts provide coding and other relevant information for completing assignments. Papers shall use APA publication manual style – no other format is acceptable.

Course grades:	Mid-term Exam	100 points
	Assignments	100 points
	Class presentation	100 points
	Final Exam	100 points

Grade Criteria:	A = 360-400 points
	B = 320-359 points
	C = 280-329 points
	D = 240-279 points
	F = Below 240

The midterm and final exams will consist of multiple choice, short essays, and questions requiring calculations drawing upon material from the texts, readings, as well as class lectures and presentations.

The class presentation will be a 10-15 minute presentation of your research project.

Tentative Class Schedule

Date	Topic/Assignment
8/21	Introduction to the course; Review of syllabus; Discussion of students' research projects and ideas.
8/28	Review of research basics
9/4	Types of design, complex designs
9/11	Correlation, generalization
9/18	Introduction to SPSS; Lab. Exercises (SPSS Manual)
9/25	Research Strategies; Assembling data; Exercises (SPSS Manual)
10/2	Research Strategies
10/9	MID-TERM EXAM; course processing
10/16	FALL BREAK – NO CLASS
10/23	Interpretation of research; Ethics in research
10/30	Program Evaluation; planning the research project
11/6	Integrative literature reviewing and writing; Developing a proposal
11/13	Developing a proposal (continued)
11/20	Writing reports
11/27	THANKSGIVING BREAK – no class
12/4	Presentation of written proposals
12/11	Presentations & FINAL EXAMINATION

A Bibliography on Dissertating

- Bolker, Joan. (1998). *Writing your dissertation in fifteen minutes a day: A guide to starting, revising, and finishing your doctoral thesis*. New York, NY: Owl Books.
- Cone, John D. & Foster, Sharon L. (1993). *Dissertations and Theses from Start to Finish: Psychology and related fields*. Washington, D.C.: American Psychological Association.
- Davis, Gordon B. & Parker, Clyde A. (1997). *Writing the doctoral dissertation: A systematic approach* (2nd ed.). Hauppauge, NY: Barrons Educational Series.
- Glatthorn, Allan A. (1998). *Writing the winning dissertation: A step-by-step approach*. Thousand Oaks, CA: Corwin Press.
- Krieshok, Thomas S., Lopez, Shane J., Somberg, Daniel R., & Cantrell, Peggy J. (2000). Dissertation while on Internship: Obstacles and predictors of progress. *Professional Psychology: Research and practice*, 31(3), 327-331.
- Locke, Lawrence F., Spirduso, Waneen Wyrick, & Silverman, Stephen J. (1994). *Proposals that work: A guide for planning dissertations and grant proposals* (4th edition). Thousand Oaks, CA: Sage.
- Madsen, David (1991). *Successful dissertations and theses: A guide to graduate student research from proposal to completion*. (2nd ed.). San Francisco, CA: Jossey-Bass.
- Meloy, Judith M. (2002). *Writing the Qualitative Dissertation: Understanding by doing* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.
- Newman, Isadore, Benz, Carolyn R., Weis, David, & McNeil, Keith. (1997). *Theses and dissertations*. Lanham, MD: University Press of America.
- Rudestam, Kjell Erik & Newton, Rae R. (2001). *Surviving your dissertation: A comprehensive guide to content and process* (2nd ed.). Thousand Oaks, CA: Sage.
- Sternberg, David. (1981). *How to complete and survive a doctoral dissertation*. New York, NY: St. Martin's Press.