

**Mylan School of Pharmacy
Duquesne University**

Course Syllabus

**Division of
Clinical, Social, and Administrative Sciences**

**GPHSC 589
Research Methods in Pharmacy Administration**

Fall 2003

**I. Course Name:
Research Methods in Pharmacy Administration**

**II. Course Number:
GPHSC 589**

III. Credits: 3.0

IV. Course Faculty:

Course Master:

Shane Desselle, Ph.D.

**Office: Bayer 308
Office Telephone Number: (412) 396-6363
Office Fax Number: (412) 396-5130
Email: desselle@duq.edu**

Other Course Faculty:

Vincent Giannetti, Ph.D.

**Office: Bayer 310
Office Telephone Number: (412) 396-6379
Office Fax Number: (412) 396-5130
Email: giannett@duq.edu**

Michael Miller, M.S.

**Office: Bayer 322
Office Telephone Number: (412) 647-5702
Office Fax Number: (412) 396-5130
Email: mjmst134+@pitt.edu**

David Tipton, Ph.D.

**Office: Bayer 309
Office Telephone Number: (412) 396-6370
Office Fax Number: (412) 396-5130
Email: tipton@duq.edu**

V. Objectives

This course examines the issues and problems involved in evaluative research and seeks to develop guidelines for designing studies that reconcile the often conflicting expectations of methodological purity and real world constraints. The course will focus on the various design alternatives currently available to the evaluative researcher and the common methodological and practical problems encountered while working with health care programs. The course will explore both general problems and illustrative research experiences of evaluators. An effort will be made to develop guidelines for anticipating problems and overcoming them. The rapidly expanding literature on evaluative research will supplement class discussions. Assignments will give students an opportunity to apply concepts and ideas developed in class and in readings.

VI. **Course Time Commitments:**

Class will meet for fourteen, three-hour time periods, once per week, primarily from 5pm to 8pm on Thursdays, though these times are subject to change based upon the convenience of the students and the instructors. Students can expect a very serious time commitment to reading books and peer-reviewed literature in addition to developing project proposals and actually conducting research projects. Students should expect to spend a minimum of nine to twelve hours per week preparing for class, but can likely expect an even greater time commitment.

VII. **Prerequisite Courses:** Advanced standing in the Master's degree program in Pharmacy Administration or by approval of the Coursemaster.

VIII. **Prerequisite Knowledge:**

Knowledge of basic principles of statistical analysis is very helpful.

IX. **Attendance Policy:**

Attendance at class periods is mandatory!

X. **Required Texts/Other Resources:**

1. Kerlinger, Fred N., and Lee, Howard, B. Foundations of Behavioral Research, 4th, ed. (2000). Orlando, FL: Harcourt College Publishers.

2. Journal articles will be distributed in class. The student is responsible for all materials.

XI. **Recommended:**

1. Babbie, Earl. The Practice of Social Research, 7th ed. (1995). Belmont, CA: Wadsworth Publishing.

2. Fink, Arlene, Ed. Test Survey Kit, Volumes 1-9. (1995). Thousand Oaks, CA: Sage.

XII. **Additional Suggested Readings:**

Maintain active reading habits of several peer-reviewed journals, including, but not limited to, *Journal of the American Pharmaceutical Association*, *American Journal of Health-Systems Pharmacy*, *Journal of Managed Care Pharmacy*, *Journal of Social and Administrative Pharmacy*, *Journal of Pharmaceutical Marketing and Management*, *Journal of Pharmaceutical Economics Policy & Finance*, *American Journal of Pharmaceutical Education*, *Health Marketing Quarterly*, *Journal of Health and Social Policy*, *Medical Care*, and *Drug Information Journal*.

XIII. Learning/Behavioral Objectives:

Upon successful completion of all course components, including attending lectures, reading assignments, passing examinations, and completing all required projects, the student should be able to:

1. Describe what the term “science” actually means. Describe the aims of science. Distinguish between knowledge gained through empiricism versus knowledge assumed by the layman.
2. Define “theory” and how it relates to science. Identify and describe the steps of the scientific approach. Formulate valid, credible, and testable research hypotheses given a question or other previously unexplained phenomena.
3. Distinguish between “constructs,” “concepts,” and “variables,” and “operational definitions.” Classify the types of variables used in a study. Describe the significance to which we place upon accurate measurement of phenomena. Identify “levels” of data.
4. Discuss the implications of validity and reliability in measurement. Describe different types of validity and reliability, their contribution toward adequate measurement, and methods by which to assess them.
5. Discuss the concept of “variance” and its implications on empirical testing. Identify types of variance and the sources from which they derive. Discuss the significance of minimizing error variance when conducting a study.
6. Consider the logistical and ethical aspects of any project. Evaluate a project’s feasibility and its value as a potential contribution to the current body of knowledge. Identify and deliberate ethical considerations when deciding on whether to conduct a study, and if so, how may it be properly conducted.
7. Identify and describe various types and levels of research and research objectives. Select the appropriate level and goals for a research project.
8. Identify various pre-experimental, quasi-experimental, and experimental designs. Identify threats to internal and external validity of each type of

design.

9. Discuss the nature of sampling as an intrinsic component to experimental design. Identify sampling techniques and procedures that pose threats to or strengthen the generalizability of a study's results. Discuss the significance of "power" and calculate it for a given sample.
10. Discuss the critical importance of a thorough literature review in identifying a research question, formulating hypotheses, selecting a design and methodology, developing mechanisms of measurement and operational definitions, and reporting the results of a study. Conduct a thorough literature review.
11. For each of the following methodologies commonly employed in the social and administrative pharmaceutical sciences, describe the methodology, discuss its strengths and potential pitfalls and threats to validity and reliability, and describe how you might conduct a project utilizing them:
 - a. Unobtrusive observation
 - b. Face-to-face interview
 - c. Telephone interview
 - d. Self-administered survey questionnaire
 - e. Content analysis
 - f. Secondary database analysis
12. Discuss the use of survey instrumentation as a primary means for the social scientist to gather data. Design a survey as a method by which to develop and/or measure a construct.
13. Identify and describe critical "do's" and "don'ts" with respect to survey questionnaire construction. Identify methods and sources from which to generate items in a survey. Employ the concepts of mutual exclusivity and exhaustiveness. Discuss the significance of internal consistency of items comprising a scaled construct and how to assess and improve upon it.
14. Describe different types of scaling methodologies, such as Likert, semantic differential, and Guttman scales and describe strengths and weaknesses of each.
15. Describe the advantages of interval-level scaling procedures. Identify methods to construct interval-level scales. Propose a method to construct an interval-level scale and test it for internal consistency among its judges.
16. Describe the use of higher order statistical procedures in the behavioral sciences. Conduct one or more of these tests given a set of data on SPSS and

interpret the results.

17. Differentiate scientific writing from other types of writing. Describe how to present the results of a study in writing. Identify some basics with respect to writing manuscripts for submission into peer-reviewed journals and for writing grant proposals.
18. Develop a proposal and design an instrument to collect data. Collect data relevant to one or more research hypotheses. Enter the data into an appropriate statistics package. Analyze the data and report it to the course instructors.

XIV. Course Assessment:

- A. Research Proposal**—The student will individually generate a research proposal employing a methodology OTHER than a questionnaire survey. The proposal will include an appropriate review of the literature, the study design, sampling, methodology, and analysis procedures. The proposal must be typed. Additionally, the student must provide an oral defense for the proposal.
- B. Research Project**—As a group, students will complete a research project employing a questionnaire survey methodology. This includes an informal proposal approved by the course instructor(s), design of the questionnaire, data collection, data entry into an appropriate statistics package, and analysis.
- C. Examination**—There will be one examination for the course. It shall be a cumulative final utilizing a variety of testing formats, including essay questions.

Research proposal		150 points
--------------------------	--	-------------------

Written component	100 points	
-------------------	------------	--

Oral defense	50 points	
--------------	-----------	--

Research Project		150 points
-------------------------	--	-------------------

Proposal/design/sampling	30 points	
--------------------------	-----------	--

Instrumentation/validity/ reliability	80 points	
--	-----------	--

Analysis and interpretation	40 points	
-----------------------------	-----------	--

Examination		100 points
--------------------	--	-------------------

Weekly class participation		50 points
-----------------------------------	--	------------------

TOTAL		450 points
--------------	--	-------------------

XVIII.

Grading Policy:

The following grading scheme will be used:

A ≥ 89.5%

- B 79.5 - 89.4%
- C 69.5 - 79.4%
- I Failure to complete all assignments in a manner justifying the student's readiness to begin thesis-level work.

- Aug. 28 THE LOGIC OF ANALYSIS—Dr. Desselle
Read Kerlinger & Lee's Ch.s 1-3
1. Introduction
 2. The purpose and aims of science
 3. Relationship of theory and research
 4. Testing hypotheses
- Sept. 04 SELECTION AND FORMULATION OF A RESEARCH PROBLEM—Dr. Giannetti
1. Selecting a topic for research
 2. Formulating a specific problem
 3. Defining concepts and deciding on operations to represent them
 4. Relating the study to other knowledge
 5. Determining the feasibility of the project
 6. Ethical considerations of scientific inquiry
- Sept. 11 RESEARCH DESIGN I: AN INTRODUCTION TO SAMPLING AND QUALITATIVE AND DESCRIPTIVE STUDIES—Mr. Miller
1. Types of sampling—nonprobability versus probability sampling
 2. The significance of sampling within the context of design
 3. Power and sampling
 4. Qualitative research: data collection and analysis
 5. Descriptive and correlational research
 6. Pre-experimental designs
- Sept. 18 RESEARCH DESIGN II: QUASI-EXPERIMENTAL AND EXPERIMENTAL STUDIES—Mr. Miller
1. Threats to internal and external validity
 2. Pre-experimental designs
 3. Quasi-experimental designs
 4. Experimental designs
- Sept. 25 GENERAL PROBLEMS OF MEASUREMENT—Dr. Desselle
Read Kerlinger & Lee's Ch.s 6,13,14,26,27,28
1. Levels/types of data
 2. Operational definitions
 3. Variation and covariation
 4. The validity and reliability of measurements
- Oct. 02 DATA COLLECTION I: MINING EXISTING DATA—Mr. Miller
1. The significance of the review with respect to project feasibility, need, design, methods, and presentation
 2. Relevant search engines/searching methods and use of key terms
 3. Content analysis
 4. Secondary database analysis

5. Meta-analysis
- Oct 09 DATA COLLECTION II : OBSERVATIONAL METHODS & INTERVIEWS—
Dr. Giannetti
1. A definition of observational methods
 2. The purpose of using observational methods
 3. Users of observational methods
 4. The relationship of the observer to the observed
 5. Methods of observation
 6. Comparison of the interview and the questionnaire
 7. That nature of the interview/removing the effects of the interviewer
 8. Types of interviews/telephone surveys
- Oct. 16 DATA COLLECTION III—SURVEY QUESTIONNAIRE CONSTRUCTION—
Dr. Desselle
Read Kerlinger and Lee's Ch.s 25,29,30,31
1. How to ask survey questions
 2. Validity/reliability of items
 3. Mutual exclusivity and exhaustiveness
 4. Open-ended versus closed questions
 5. Ensuring adequate response rate/follow-up techniques
- Oct. 23 ORAL DEFENSE OF PROPOSAL
1. Written proposal due on Oct. 20 at 12pm
 2. Oral defenses during regularly scheduled class time on Oct 23.
- Oct. 30 DATA COLLECTION IV—SURVEY QUESTION CONSTRUCTION II—
OTHER TYPES OF SCALES AND USE OF INTERVAL LEVEL
PROCEDURES—Dr. Desselle
1. Likert and semantic differential scales
 2. Dimensionality
 3. Interval-level data—getting at a true “attitude”
 4. The method of pairwise comparisons
 5. The method of equal-appearing intervals
- Nov. 06 ADVANCED STATISTICS FOR THE SOCIAL SCIENCES—Dr. Tipton
1. Factor Analysis
 2. Discriminant function analysis
 3. Cluster analysis
 4. Multivariate analysis of variance
 5. Use of SPSS software
- Nov. 13 REPORTING THE DATA—Dr. Desselle/Mr. Miller

1. Properly interpreting the data/extrapolation
2. Scientific writing
3. Writing articles for publication into refereed journals

Nov. 20 FINAL EXAMINATION DUE

Dec. 11 RESEARCH PROJECT DUE