Brigham Young University

COMD 600  Research Design  (3 cr)

Fall 2014

Instructor: Richard W.Harris, Ph.D.; 131 TLRB
Email: richard_harris@byu.edu
Office Hours: 11-12 MWF or by appointment
Class time: 8-9:15 MW, 125 TLRB

Syllabus Word File

And inasmuch as they sought wisdom they might be instructed.
Doctrine & Covenants 1:26

Thesis forms, templates and examples
Thesis Template MS Word 2007
Graduate Studies Web Page
Grad School Forms Web Page

Course Description
This course is designed to make clear the philosophical and logical foundations of scientific reasoning based on the principles of empiricism, operationism, causality, and probability theory. Students will learn about the principles underlying quantitative and qualitative research designs and the types of statistical methods appropriate for the analysis of different kinds of data. Projects are incorporated that facilitate skillful reading and comprehension of scientific literature and the ability to formulate a well-founded research proposal.

Course Philosophy
In this course, we will survey the fundamental methods of clinical research and statistical measurement as well as the scientific principles upon which such methods are based. Central to the organization of the course is the instructor’s belief that the term “science,” especially in the clinical realm, is best conceived as a verb that signifies a set of specified operations used for problem solving, decision making, and communicating knowledge in a manner that can be objectively evaluated by others. As a noun, the concept of “science” can be intimidating, if not shrouded in mystery. As a verb, it is understood to be merely a set of systematic mental observations and relevant tools for their expression that culminate in an evolving body of facts.

Course Texts

Other Learning Materials
The course will involve additional readings, Internet-based tutorials, creation of figures and tables and other exercises.


Course Web site: 600.htm

Reference Books. The library contains many texts and reference works on statistics and research design which discuss concepts to be covered in this course. You may feel a need for additional information, or you might want alternate descriptions to those given in the assigned texts or in lecture. The HBLL first floor's BF section has psych research methods texts and the 2nd floor's QA section covers statistics and computer science.

Other Resources
You will be required to submit your sample prospectus for this class in printed and electronic for. This is designed to help you prepare your thesis for Electronic Submission to the Graduate School at the completion of your graduate studies. Please refer to the Electronic Thesis and Dissertation web pages on the following web site:
http://etd.byu.edu/

Purdue University Online Writing Lab (OWL) APA Formatting and Style Guide:
http://owl.english.purdue.edu/owl/resource/560/01/

The Statistical Consulting Center provides free consulting to students, provided they are accompanied by their major professor (more details will be provided in class). The English Department faculty may read your thesis to help identify grammar and punctuation errors for a small fee (approximately $10) (more details will be provided in class). The Writing Center, 1010 JKHB x8-4306
http://www.lib.byu.edu/hbll/
http://www.comdisdome.com/dome/index.jsp
http://www.comdisdome.com/dome/tutorial.jsp?_dm=comdis&_sk=

Course Goals
Students in audiology and speech language pathology need to know how to measure and describe behavior, avoiding pitfalls invalidating measurement. Second, they need to know how to objectively read the literature to access new knowledge throughout their professional careers. Both of these needs are critical to successful research (and successful clinical practice).

In this class we address these needs by studying research methods. Students will learn principles of research design and how to apply the scientific method to clinical assessment and intervention. We will take a “practical” approach to do this, focusing heavily on the thesis that each of you must complete for your master’s degree.

Prerequisites to this Course
The prerequisites to this course are Math 110 and Stat 222. Although we will review some of the material covered in these courses, a basic understanding of statistics will be assumed.
Concepts to be Studied in this Course
The nature of graduate study; characteristics of a strong graduate program
Planning feasible research studies
Reviewing the literature
Components of research articles and theses: overview
  Introduction section
  Review of literature section (appendix to thesis)
  Method section
  Results section
  Discussion section
Selecting a research question
Scientific method, types of research
Terms, concepts, and research methods
Research design, group and single subject
The editorial review & publication process
Ethics in research
APA style
Statistics: basic notions
  statistical methods commonly used in ASLP research
  looking for differences
  looking for relationships
  non-parametric statistics in ASLP research & clinical work
  other statistical methods in ASLP research
  characteristics of good data analysis

Examinations
The midterm and final take home examinations. The exams will consist of questions on reading assignments from the class text, from the APA Style Manual, Grad Handbook and Graduate School guidelines, statistical assignments, tables, and figures etc. You will have 1 week to complete each exam. More details to be provided in class.

Quizzes
There will be 4 unannounced quizzes on reading assignments. Each quiz will be worth 25 points.

Chapter Reading Assignments
At the end of each chapter (1-7) in the textbook there are supplemental readings and study questions. You need to select one (1) of the study questions for detailed answer from each chapter in the textbook. Read the assigned reading and then prepare a well written answer to the study question. These will be due the first day we discuss the specified book Chapter as outlined in the syllabus schedule below. Each study question is to be typed using APA Style and submitted in printed or electronic format. If you submit electronically I will email to acknowledge receipt. If you do not get an email acknowledgment from me I did not receive your email and you should plan to submit a printed version. Each study question answer is worth 30 points (15 for answer to question and 15 for APA format).
Late Work
Unless you have permission from the instructor for late submission (due to illness or other emergency situations) you will be penalized for a late written assignment by subtracting 5 percentage points from its score for each day late. Unexcused late examinations are not allowed and will be given a score of 0.

Class Participation
I expect attendance and class participation. Much of what we'll do in class involves discussion of the readings, ideas, etc., and you will need to be present and prepared to contribute to the class. If you have more than one unexcused absence during the semester you will lose 5 points per missed class period. If you are significantly late you may also lose points. If you have unusual circumstances that make it difficult to attend class you should let me know (e.g., serious illness, etc.). The university is concerned about contagious illness this upcoming year and has requested that anyone who is ill should NOT come to class until they are over their illness. I will work with you should you become ill.

If you are having difficulty in the course, you should meet with me immediately to go over your class and reading notes and to get direction for supplemental readings.

Grading Procedure
<table>
<thead>
<tr>
<th></th>
<th>Points</th>
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<tbody>
<tr>
<td>Midterm take home examination</td>
<td>200</td>
</tr>
<tr>
<td>Final take home examination</td>
<td>200</td>
</tr>
<tr>
<td>Statistics assignments</td>
<td>50</td>
</tr>
<tr>
<td>Table and Figure assignments</td>
<td>50</td>
</tr>
<tr>
<td>Four Quizzes</td>
<td>100</td>
</tr>
<tr>
<td>End of chapter study questions</td>
<td>210</td>
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<tr>
<td>IRB Tutorial</td>
<td>25</td>
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</tbody>
</table>

There are a total of 835 points available. I will calculate your final percentage using 835 as the highest possible score. The grading scale I will use at the end of the semester is listed below. No extra credit is possible.

A  94-100
A- 90-93.9
B+ 87-89.9
B  84-86.9
B- 80-83.9
C+ 77-79.9
C  74-76.9
C- 70-73.9
D+ 67-69.9
D  64-66.9
D- 60-63.9
Incomplete grades will only be given when serious circumstances (health, family tragedy, etc.) arise after the final drop deadline and persist through the final exam date. You should come and talk to me immediately if you need to take an incomplete. Work schedule, child-care problems, or commuting difficulties are not acceptable reasons for missing exams/classes or receiving an Incomplete.
## COURSE SCHEDULE (OVERVIEW)

***Schedule subject to revision***

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Topic</th>
<th>Readings</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Sep 3</td>
<td>Course Introduction/Microsoft Word</td>
<td>Problem Statement Article</td>
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<tr>
<td>2</td>
<td>8/10</td>
<td>Microsoft Word/APA</td>
<td>APA Manual</td>
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<td><strong>IRB Tutorial Assignment due Sep 15</strong></td>
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<tr>
<td>3</td>
<td>15/17</td>
<td>Microsoft Word/APA</td>
<td>APA Manual</td>
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<tr>
<td></td>
<td></td>
<td><strong>IRB Tutorial due Sep 15</strong></td>
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<tr>
<td>4</td>
<td>22/24</td>
<td>Research &amp; Practice in Comm. Dis.</td>
<td>Chapter 1</td>
</tr>
<tr>
<td>5</td>
<td>Sep 29/Oct 1</td>
<td>The Introduction Section</td>
<td>Chapter 2</td>
</tr>
<tr>
<td>6</td>
<td>6/8</td>
<td>Research Strategies in Comm. Dis.</td>
<td>Chapter 3</td>
</tr>
<tr>
<td>7</td>
<td>13/15</td>
<td>Research Design in Comm. Dis.</td>
<td>Chapter 4</td>
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<tr>
<td>8</td>
<td>20/22</td>
<td>The Method Section</td>
<td>Chapter 5</td>
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<td><strong>Midterm delivered Oct 20, due Oct 27</strong></td>
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<tr>
<td>9</td>
<td>27/29</td>
<td>The Method Section</td>
<td>Chapter 5</td>
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<td><strong>Take home Midterm due Oct 27</strong></td>
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<tr>
<td>10</td>
<td>Nov 3/5</td>
<td>The Results Section</td>
<td>Chapter 6</td>
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<td></td>
<td>Excel/Statistics</td>
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<tr>
<td>11</td>
<td>10/12</td>
<td>The Results Section</td>
<td>Chapter 6</td>
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<td>Excel/Statistics</td>
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<tr>
<td>12</td>
<td>17/19</td>
<td>The Results Section</td>
<td>Chapter 6</td>
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<td>Excel/Statistics</td>
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<tr>
<td>13</td>
<td>24</td>
<td>The Results Section</td>
<td>Chapter 6</td>
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<td></td>
<td></td>
<td>Excel/Statistics</td>
<td></td>
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<tr>
<td>14</td>
<td>Dec 1/3</td>
<td>The Discussion &amp; Conclusions</td>
<td>Chapter 7</td>
</tr>
<tr>
<td>15</td>
<td>8/10</td>
<td>The Discussion &amp; Conclusions</td>
<td>Chapter 7</td>
</tr>
<tr>
<td>19</td>
<td></td>
<td>Final Examination Due by 3 pm</td>
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## Objective Assessment Feedback ASHA CAA Standard* DOMSE Conceptual Framework*

<table>
<thead>
<tr>
<th>Objective</th>
<th>Assessment</th>
<th>Feedback</th>
<th>ASHA CAA Standard*</th>
<th>DOMSE Conceptual Framework*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The student will be able to write a research proposal</td>
<td>1a. Topic approval. 1b. Outline approval. 1c. Reference approval. 1d. Writing Center review. 1e. Draft 1 peer review. 1f. Draft 2 review. 1g. Final paper grade.</td>
<td>Written comments on items 1a through 1f and a final grade on 1g.</td>
<td>III-F III-G IV-B</td>
<td>CF-1 CF-2</td>
</tr>
<tr>
<td>2. The student will understand the theory and foundations of research methodology</td>
<td>2a. On-line quizzes. 2b. Interim written exams. 2c. Final examination.</td>
<td>Class review of items 2a and 2b. Return of item 2c with comment and instructor meeting with student.</td>
<td>III-E III-F</td>
<td>CF-1 CF-2</td>
</tr>
</tbody>
</table>

*More detail is available regarding these standards at: [http://education.byu.edu/comd/](http://education.byu.edu/comd/)

David O. McKay School of Education (DOMSE) Conceptual Framework (required by the DOMSE):

**CF-1**
- Embrace and apply the moral dimensions of teaching.
- Practicing nurturing pedagogy
- Providing access to knowledge
- Enculturating for democracy
- Ensuring responsible stewardship of the schools

**CF-2**
- Demonstrate academic excellence.

**CF-3**
- Model Collaboration.

**CF-4**
- Act with Social Competence.

Council on Academic Accreditation Standard (CAA):

**Standard III-B**
The applicant must demonstrate knowledge of the nature of basic human communication and swallowing process, including their biological, neurological, acoustic, psychological, developmental, linguistic and cultural bases

**Standard III-C**
The applicant must demonstrate knowledge of the nature of speech, language, hearing, and communication disorders and differences and swallowing disorders, including the etiologies, characteristics, anatomical/physiological, acoustic, psychological, developmental, and linguistic and cultural correlates.

**Standard III-D**
The applicant must possess knowledge of the principles and methods of prevention, assessment, and intervention for people with communication and swallowing disorders, including consideration of anatomical/physiological, psychological, developmental, and linguistic and cultural correlates of the disorders.

**Standard III-E**
The applicant must demonstrate knowledge of standards of ethical conduct.

**Standard III-F**
The applicant must demonstrate knowledge of processes used in research and the integration of research principles into evidence-based clinical practice.

**Standard III-G**
The applicant must demonstrate knowledge of contemporary professional issues.

**Standard IV-A**
The applicant must complete a curriculum of academic and clinical education that follows an appropriate sequence of learning sufficient to achieve the skills outcomes in Standard IV-G.

**Standard IV-B**
The applicant must possess skill in oral and written or other forms of communication sufficient for entry into professional practice.