Instructor: Martin Fujiki, Ph.D.; 130 TLRB
Office Hours: 1-2 T, Th or by appointment
Class time: 9:30-10:45 AM T, Th, 125 TLRB

Course Rationale
Students in audiology and speech language pathology need at least three related types of knowledge concerning research methods. First, they need to know how to measure and describe behavior avoiding pitfalls invalidating measurement. Second, they need to know how to objectively read research to access new knowledge throughout their professional careers. Finally, they need to know how to conduct research to allow the successful completion of a thesis.

In this class we study methods for analyzing changes in speech, hearing, and language behavior. These methods have important implications for both research and clinical practice. Students will learn principles of research design and how to apply the scientific method to clinical assessment and intervention. They will also learn how to prepare a thesis which satisfies both the aims of the ASLP professions and of BYU.

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
Scientific method, types of research
Terms, concepts, and research methods
Research design, group and single subject
Selecting a research question
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
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

Course Requirements
Our required texts are the *Publication Manual of the American Psychological Association* - fourth Edition (usually referred to as the "APA Manual") and *Evaluating research in communicative disorders* (3rd Ed.) by Schiavetti and Metz.

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. Beyond the texts above, you might want to consult:


- Other Resources: The Statistical Consulting Center provides free consulting to students, provided they are accompanied by their major professor (more details will be provided in class).

Examinations
There will be two examinations. Examinations must be taken on the scheduled date. Exceptions will be made only in "exceptional cases" and should be negotiated well in advance when possible. Examinations will be "closed book." Exams will cover both lecture and text material. The exams will be essay and short answer in nature. The first exam will be administered in class on the date noted in the calendar. The second exam will be administered on the scheduled day during finals week. Each examination will be worth 100 points.

Review of the Literature
The final requirement will be to write a review of the literature.

The review of the literature is a chapter in your thesis. It is hoped that this assignment will give you the opportunity to write a first draft of this chapter (however, keep in mind that there is no guarantee that you will actually be able to use the review that you write--that will be up to your thesis advisor). The review will be graded on:

writing style (30): Is your review well written? Can it be easily read? Is it written in a formal writing style? Do you present your ideas in a sophisticated, yet readable manner?

impact (20): You should begin your review with a one page summary of the thesis idea you are using. This may simply talk about area of interest, without leading to a specific question. Based on this general idea, the following will be judged. Does your review make a compelling case that your study should be done? To do this, showing how your study fits into the existing literature will be critical. Additionally, you should make sure you explain yourself well enough so that a "intelligent but uneducated" reader can see why you would want to conduct your study. Although the amount of literature cited will vary from idea to idea, you should remember that "more is better." A limited or dated review will cost you points.

organization (20): Does your review have an organizational plan? You are not limited to the methods discussed in class. If you do not use a method suggested in class, however, it is up to you to make it work.

APA style (20): You must follow APA guidelines in your proposal. You will lose one point per APA style violation. Spelling and grammar errors are counted as APA errors (you are allowed one "free" grammar error. After that you will lose points for each error to a total of 20). If you repeatedly make the same APA error I will not take additional points off for each repetition of the error. However, spelling and grammatical errors will be penalized for each occurrence.

Literature search (5): You will need to turn in a copy of the reference list you created in your library literature search. Your computer print out will be fine, however, if you want to put your reference list on a separate sheet of paper that will also be acceptable. It is very difficult to say how many sources should be found on any given topic (we will discuss this in detail in class). However, keep in mind that if you have a very short list (say under 10) you may lose points.

Description of who you are working with and the extent of their input (5): All of you will work with a major professor and most of
you will use an idea generated by that professor. You should include a section detailing this involvement. There is no penalty for having extensive faculty input. You must write the review yourself, however. Thus, you are not to ask faculty members to read and edit your review before it is turned in.

**Late Work**

Unless you have a persuasive written excuse (note from your doctor documenting serious illness, etc.) I will penalize a late exam or late written assignment by subtracting 5 points from its score for each day late.

**Class Participation**

I expect attendance and class participation. Much of what we'll do in class involves discussion of the readings, ideas, etc., and so you need to be present and prepared to contribute to the class. If you have more than one 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 see me as soon as possible (e.g., serious illness, etc.).

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**

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<th>Exam</th>
<th>Points</th>
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<tr>
<td>exam 1 and exam 2 (100 pts. each)</td>
<td>200</td>
</tr>
<tr>
<td>review of the literature</td>
<td>100</td>
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The grading scale I will use at the end of the semester is: 90-100% A, 89-80% B, 79-70% C, 69% & below E. I reserve the right to adjust this scale as I feel is appropriate (e.g., if no one obtains an average above 90% I may use a lower scale). No extra credit is possible.

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 such a circumstance arises. Work schedule, child-care problems, or commuting difficulties are not acceptable reasons for missing exams/classes or receiving an Incomplete.

**Calendar (test dates and due dates highlighted)**

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<tr>
<th>Topic</th>
<th>Reading</th>
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Introduction: The nature of graduate study; characteristics of a strong graduate program
Schiavetti & Metz, Chapter 1

Types of research
Duchan, J. Two approaches to research in child language.

Terms, concepts, and types of research
S & M, Chapters 2, 3, & 4

Characteristics of data

Research design
S & M Chapter 5

Selecting a research question

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
S & M, Chapters 7, 8, 9, & 10 (suggested; although keep in mind that Chapter 9 is required later)

The editorial process

Exam 1 Feb. 25

Ethics in research

APA style
APA manual, Chapter 1, 2, 3, & 4

Statistics: what to use and when to use them
- statistical methods commonly used in ASLP research
  S & M, Chapters 6 & 9
- non-parametric statistics in ASLP research & clinical work
  PDQ Statistics, chapters 9, 10, & 11 (on reserve in 136
other statistical methods in ASLP research statistical illustration w/charts & graphs characteristics of good data analysis

Exam 2 as scheduled during finals week (in 125 TLRB)

Review of the literature due April 6 by 5 pm.

Honor Code
I expect you to adhere to the Honor Code. All writing you do for this class must be your own; you must label any quotations and you must give credit for other people’s ideas by referencing. The APA manual explains the format for how to do this. Honor Code violations such as plagiarism or cheating on an exam will result in a failing grade in the course.

Quotes: All of the following quotes pertain to things we will cover during the course of this class.

"Science is just a set of human rules that keep us from lying to each other . . . and all a scientist has is his or her reputation for truth."
   Dr. Kenneth Norris

"Nature does not go out of its way to befuddle us, and if some phenomenon seems to make no sense no matter how we look at it, we are probably in ignorance of deep and far-ranging principles."

"We should never believe that because something is unexplainable by us that it is unexplainable."
   Elder Neil A. Maxwell

"Whether we like it or not, the world we live in has changed a great deal in the last hundred years, and it is likely to change even more in the next hundred."
   Stephen Hawking, Black Holes and Baby Universes

"Be kind to colleagues, ruthless with theories, is a good rule."
   Dr. Robert Bakker, The Dinosaur Heresies
"Be serious about your studies. This is a university."
President Spencer W. Kimball