

## **SPLH 660: Research methods in Speech-Language-Hearing**

**Fall 2015**

**Class Meetings:** Tuesdays and Thursdays 11:00 to 12:15; Dole 2092

**Class Instructor:** Steve Warren, Ph.D.; [sfwarren@ku.edu](mailto:sfwarren@ku.edu); 785-864-0632

**Office hours:** Tuesdays at 10:00 to 11 AM and by appt.

**Contact Policy:** I will make every attempt to respond to your email messages within 24 hours. If I do not respond within 24 hours, feel free to re-send your message. I get hundreds of emails a day and sometimes a message will get lost.

I will not generally send reminder announcements. All information related to the class will be available via Blackboard. I will note upcoming deadlines in class.

**Graduate Teaching Assistants** Shadi Pir Hooseinloo, ([shadi@ku.edu](mailto:shadi@ku.edu)) and Heather Fielding ([fielding.h@ku.edu](mailto:fielding.h@ku.edu))

**Pre-/Co-requisites:** English 102 and 9 credits of SPLH coursework

### **Course Description:**

This course is about the methods used to conduct, describe and evaluate science in communication disorders. The fields of speech pathology and audiology are built upon a foundation of science and objectivity. Current practices are based on previous research that has addressed questions such as: Is someone's communication difference a disorder or just a difference that would be considered within normal variation? What types of interventions have been proven to benefit individuals with various types of communication disorders? How much improvement should I expect with a given treatment? Who is likely to respond to a specific type of treatment? Which treatment is best for a particular type of disorder? Is there an association between certain illnesses or disorders and communication disorders?

**Cell Phone Policy:** There maybe activities in class that require use of smart phones/cell phones or a computer application. For example, there may be some in-class time devoted to literature searches that will require use of computer search engines. Outside of these activities, **please do not text or check Facebook or shop during class because these activities are very distracting to myself and other students.** In addition, these activities are negatively correlated with class performance.

**The emphasis of this class is on how research can lead to more effective clinical services. Goals for this class include:**

1. How to evaluate research, including:
  - a. Identifying the parts of a research study

- b. Evaluating how well researchers planned and conducted the research
  - c. Determining if the reported effects are significant
  - d. Determining if reported results are important (e.g., should they be used in clinical settings or to guide future research?)
2. How to read, summarize and describe research in a particular area, including:
- a. How to find research for a literature review
  - b. How to describe research for a literature review
  - c. How to describe and summarize research to share with patients, parents, insurance companies, or other relevant stakeholders.
3. How to plan a research study that will address a specific question or problem in communication disorders, including:
- a. Formulating a specific testable hypothesis
  - b. Designing a study to minimize threats to external and internal validity
  - c. Describing methods in sufficient detail to facilitate replication
  - d. Measuring reliability
  - e. Communicating results in a clear concise manner

**Course Materials:**

Patten, M. (2009). *Understanding Research Methods*. Pycszak Publishing, Glendale, CA. The page numbers in the syllabus correspond to the 9<sup>th</sup> edition, but there is little variation between editions so you can use edition 8, 9, or 10, just match up the topics (italicized page numbers correspond to the 8<sup>th</sup> edition).

Offit, P. 2008). *Autism's False Prophets: Bad Science, Risky Medicine, and the Search for a Cure*. Columbia University Press, New York.

**On-line Resources:**

- 1. Blackboard course website at <http://courseware.ku.edu>
- 2. Readings, quizzes and additional readings and resources will be posted at the Blackboard site.
- 3. Writing assignments will be entered to the Peerceptiv website:  
<http://www.peerceptiv.com/>  
 Course name in Peerceptiv is: **SPLH 660S15**  
 The **class code** that you will need for logging in is: **prove93**  
**There is a one-time estimated charge of \$5.00- for accessing Peerceptiv so please have your credit cards available when you log in.**  
 Answers to Frequently Asked Questions by Students is available at the website:  
<http://www.peerceptiv.com/wordpress/help/>  
 Further instruction on using Peerceptiv will be forthcoming

**Course Content: The following calendar represents the planned course of events, but we may need to shift some dates as the course progresses. Any changes will be posted on blackboard and announced in class and by email. The regular text corresponds to the 9th edition of Understanding Research Methods and the *italicized* text corresponds to the 8th edition.**

| <b>Date</b>  | <b>Topic</b>   | <b>Readings</b>  | <b>Assignment- note quizzes are to be completed before class</b>  |  |
|--|--|--|---|--|
| August 25th (class 1- week 1)  | Course introduction                                    | None   | Complete interests and pre-course knowledge surveys   |  |
| August 27 <sup>th</sup> (class 2- week 1)                                    | The Scientific method; importance of research          | Patten pp. 1-10<br><i>pp. 1-10</i><br>BB reading by Silverman  | Quiz 1 in Blackboard  |  |
| September 1 (class 3- week 2)  | Variables in experimental and non-experimental studies | Patten pp. 11-14<br><i>pp. 11-14</i><br>BB reading: "How to Read a Research Article"<br>Choose 1 of the articles in BB Course documents and complete the worksheet on the article before class | Quiz 2 - Variables<br>Complete BB worksheet before class  |  |
| September 3 (class 4- week 2)  | Research hypotheses                                    | Patten pp. 15-18<br><i>pp. 15-18</i>   | Quiz 3 - Hypotheses<br>Submit paper topic on BB by 10:00 a.m.   |  |
| September 8 (class 5- week 3)  | Operational Definitions                                | Patten pp. 17-18<br><i>pp. 17-18</i>   | Quiz 4 – Operational Definitions  |  |
| September 10 (class 6- week 3)<br>*last day to drop without a "W" is Sept XX | Reviewing research -finding <i>good</i> articles       | Patten pp. 31-35<br><i>pp. 31-35</i>   | Quiz 5 – Reviewing Research<br><br><b>Class meets in Clark Instruction Center, 340 Watson Library</b>                                   |  |
| September 15 (class 7- week 4)   | In class discussion of Autism's False Prophets         | "Facilitated Communication – what harm can it do" –on Blackboard   | No quiz due today<br><b>In class discussion of Autism's False Prophets pages xi – p. 82. Complete Discussion Questions before class</b> |  |
| Sept 17 (class 8- week 4)  | Writing literature reviews                             | Patten pp. 35-42<br><i>pp. 35-42</i><br>Patten pp. 185-188<br><i>pp. 175-178</i>   | Quiz 6 – Writing a Lit Review   |  |

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|   |  | Organizing a literature review   |  |  |
| Sept 22 <sup>nd</sup><br>(class 9 – week 5) | Survey Research  | BB reading: Blessing (2013). Survey Research<br>BB reading: Blood, et al., (2010). Written language disorders  | Quiz 7 – Surveys<br><b>Writing project part 1 due by midnight to SWORD</b>           |  |
| Sept 24<br>(class 10 – week 5)              | Qualitative Research   | Patten pp. 19-22<br><i>pp. 19-22</i><br>Quantitative vs. qualitative research;<br>BB reading: Yorkston (2001). Communication in context  | Quiz 8 - Qualitative Research  |  |
| Sept 29<br>(class 11 – week 6)              | Ethical considerations in research<br>Peer reviewing               | Patten pp. 25-26<br><i>pp. 25-26</i><br>www.peerceptiv.com<br>Go to help, then Be a good reviewer, also see the video on peer reviewing<br>BB: Ethics video; HSCL tutorial info available under Course Documents | Quiz 9 - Ethics  |  |
| Oct 1<br>(class 12- week 6)                 | Sampling characteristics;<br>Sampling demographics and sample size | Patten pp. 55-64- sampling<br><i>pp. 45-54</i><br>Patten pp. 65-68<br><i>pp. 55-58</i>   | Quiz 10 Sampling<br><b>IN CLASS ADVISING</b>   |  |
| Oct 6<br>(class 13 – week 7)                | Validity   | Patten pp. 71-77<br><i>pp. 61-67</i><br>BB reading: Lincoln et al., Social validity  | Quiz 11 - Validity<br><b>Peer Reviews of writing project part 1 due by 10:00 am.</b> |  |
| Oct 8<br>(class 14 – week 7)                | Reliability  | Patten pp. 83-90<br><i>pp. 73-80</i><br>BB reading: Sigafos, et al. 2003   | Quiz 12- Reliability   |  |
| Oct 15<br>(class 15 – week 8)               | AFP discussion<br>Review for midterm                               | Autism's False Prophets pages 83-155   | <b>In class discussion of Autism's False Prophets pages 83-155</b>                   |  |
| Oct 20<br>(class 16 – week 9)               | Midterm exam in class  |  | <b>Back Reviews due to Peerceptiv by 10:00 am October 20th</b>                       |  |
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| Oct 22<br>(class 17 – week 9)               | Single Subject Designs-1   | BB reading: Cardon & Azuma (2011)  |  |  |
| Oct 27<br>(class 18 – week 10)              | Single subject designs-2   | BB reading: Koegel & Koegel, (1986); Kern et al., (2005)<br>Sample figure graphs   | Quiz 13 – Single Subject Design  |  |

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| Oct 29<br>(class 19 – week 10) | Revising your writing   |                                       |                                |  |
| Nov 3<br>(class 20 – week 11)  |   |                                       |                                |  |
| Nov 5<br>(class 21 – week 11); | Group experimental designs; threats to internal and external validity | Patten pp. 99-104<br><i>pp. 89-94</i> | Quiz 14 – Experimental Designs |  |

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| Nov 10<br>(class 22 – week 12)                                    | Understanding statistics & the null hypothesis<br>Scales of measurement<br>Chi Square tests;<br>Shapes of distributions | Patten pp 115-120<br><i>pp. 105-110</i><br>Patten pp 121-126<br><i>pp. 111-116</i>                               | Quiz 15 – Understanding Statistics  |
| Nov 12<br>(class 23 week 12)                                      | Autism False Prophets in class discussion   | Patten pp. 111-114<br><i>pp. 101-104 (Chi square &amp; distributions)</i><br>Autism's False Prophets pp. 156-247 | Quiz 16 – Chi Square<br><b>In class discussion of Autism's False Prophets pp. 156-247</b><br><br><b>* Writing assignment parts 1 &amp; 2 due by 10:00 am*</b> |
| Nov 17<br>(class 24 - week 13)<br>*last day to withdraw is NovxX* | Measures of association (Pearson r)<br>Correlations   | Patten pp. 133-135<br><i>pp. 123-125</i><br>BB reading: Tomblin et al., 2003                                     | Quiz 17 - Correlations  |
| Nov 19<br>(class 25 – week 13)                                    | t- tests  | Patten pp 135-136<br><i>pp. 125-126</i><br>BB reading:<br>Bastian et al., 2014                                   | Quiz 18 – T-Tests   |
| Nov 24<br>(class 26 – week 14)                                    | ANOVAs  | Patten pp. 137-140<br><i>pp. 127-130</i>   | Quiz 19 - ANOVA<br>In-class experiment<br><b>*Reviews of Writing assignment parts 1 &amp; 2 due by 10:00 am.*</b>   |
| Dec 1<br>(class 27 – week 15)                                     | Practical significance and effect size  | Patten pp. 141-150<br><i>pp. 131-140</i><br>BB reading: Nippold  | Quiz 20 –<br>Bias/Significance/Validity<br><b>*Back reviews due by 10:00 am.</b>  |

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|  | Building an evidence base in SPLH                                     | BB reading by Meline & Paradiso (2003)<br>BB reading by Sapir et al. (2007)  | In-class project on evaluating assessments and treatments  |
| Dec 3<br>(class 28 – week 15)                            | Meta analyses   | Patten pp. 151-156<br><i>pp. 141-146</i><br>BB: Sample group project   | Quiz 21 – Meta-analysis<br>In-class group project on evaluating assessments and treatments   |
| Dec 8<br>(class 29 – week 16)                            | Evaluating research in speech path and audiology/<br>Review for Final | Gillam, S. and Gillam, R. (2006). Making evidence-based decisions about child language intervention in schools. Available in BB. | Quiz 22 – Evidence Based Decisions In-class group project on evaluating assessments and treatments<br><b>* Revised Final project write up due - turn in via blackboard by midnight</b> |
| Dec 10<br>(class 30 – week 16) ;<br>final class meeting_ | Present group projects;<br>Catch up and review for final              |  | Present results from group project on evaluating assessments and treatments  |
| Dec 16<br>10:30 to 1:00                                  | Final Exam  | Final Exam   | Final Exam   |

### Graded Assignments:

**Quizzes.** There will be 22 short quizzes available on Blackboard, approximately one per class meeting. The quizzes will be available and **must be completed before the class meeting**. For example, the quiz for August 27th needs to be completed prior to 10:00 a.m. on August 27<sup>th</sup>. It will be available no later than 10:00 a.m. on August 26<sup>st</sup>. However, the quizzes will generally be made available well ahead of the day before they are due so that you can work ahead on the readings if you wish. Doing the quizzes will help ensure that each student is familiar with the topics before class. In addition, quizzes will include material from the previous class, to ensure that topics are understood before moving on to another topic. You will have up to an hour to take each quiz. Quizzes will worth 12% of your final grade

**Midterm Exam:** The midterm will be given in class. The midterm will test your ability to apply the material to actual research questions, with emphases on communication disorders. Sample questions will be presented in class before the midterm. The questions will be primarily objective with some short answers. The midterm will be worth 15% of your final grade.

**Final exam:** The final will also be given on December 16<sup>th</sup> between 10:30 a.m. and 1:00.p.m. It will be similar to the midterm but will assess the cumulative information taught in this course. The final exam will be worth 18% your final grade.

**Make up exams:** A make-up exam will only be given if the student contacts the professor prior to the exam. The student must provide proof (e.g., a doctor's note) stating that there was a medical emergency that prevented completing the exam on the assigned date.

## Written project (3 parts):

**1) Writing Assignment Part 1: Literature review**—A brief review of literature relevant to your topic area. Double-spaced with 11 or 12-point font, and one inch margins at the top, bottom, left and right of the page. Review 4 - 6 articles (**note**: you will have to at least skim through many articles to find 4 - 6 articles that work for your topic). The goal is to integrate information from these 4 - 6 articles into a summary with one or two main points. Examples are provided in Appendix B of Patten, and on Blackboard. Additional examples and grading criteria will be provided in class. The last sentence or two of your literature review should describe a research question or hypothesis (Option A) or the proposed treatment trial (Option B) that logically flows from your review. References should be typed using APA style guide, available at <http://www.writing.ku.edu/~writing/guides/apa.shtml>. The suggested length for part 1 of the writing assignment is 3 - 4 double-spaced pages. Use 11 or 12 point font, and one inch margins at top, bottom, left and right.

You will submit your paper to the Peerceptiv website (more info to follow). **It is critical to submit papers on time.** Late papers will not be accepted or graded. All the papers will be peer-reviewed anonymously.

**Peer reviews:** Each student will review 3 papers from your fellow students. Your reviews will consist of numerical ratings, as well as written comments on what the strengths and weaknesses are for each paper, including how the author might improve his or her paper. You will be graded on the quality of your reviews in two ways. First, the consistency of the numerical ratings that you assign will be graded. For example, if you give ratings that are all too high or all too low, or if you don't seem to be able to tell the difference between good papers and poor papers, then you will get a low review grade. Second, you will be graded on how helpful your written comments are to the authors. This will be through a process of **back reviews**. You will each have a chance to tell your peer reviewers how helpful you found their reviews through the back review process. Reviews must be completed by the due date. There is a 1-day grace period for emergencies, but reviews submitted during the grace period receive a 5% reduction. Reviews will not be accepted after the grace period.

Your grade for the first part of the writing assignment is made up of the score you are given for the draft of the paper you write **plus** your reviewing grade **plus** your back reviews **minus** any points deducted for being late. This combined grade is worth 12% your total grade in the course.

**2) Writing Assignment Part 2: Literature review plus methods (participants, instrumentation, Procedure, reliability measurement plan, data analysis).** You will revise part 1 of your writing assignment based on peer reviewer's feedback and **add a Methods section** describing the participants, instrumentation, procedures and data analysis (design) to address the research question/treatment proposal that you created at the end of your literature review (writing assignment part 1). Sufficient detail should be provided that someone could implement the methods you describe. Your fellow students (peer reviewers) will be judging how well they could carry out the methods you describe. The suggested length for Part 2 is 2 - 4 double-spaced pages.

**Peer reviews:** You will review papers from 3 fellow students as you did for Part 1. The same grading criteria will be used in this round of peer reviews along with new criteria specific to the Methods section.

Your grade for the second part of the writing assignment is made up of the score you are given for the draft of the paper you write based on peer reviews **plus** your reviewing grade **plus** your back reviews **minus** any points deducted for being late. This combined grade is worth 12% your total grade in the course.

**3) Revised Final Paper** that contains both the literature review and the methods and is responsive to peer reviews. After receiving feedback from peer reviews you will have an opportunity to make additional revisions, and turn a final copy of your paper in to Dr. Warren via Blackboard. A grading rubric for the final paper is available on Blackboard. Dr. Warren's grade of your final paper is worth 12% of your total grade in the course.

**A note about plagiarism:** Plagiarism involves any copying of text from a source without proper citation. All papers will be checked for plagiarism using Safe Assign. If plagiarism is detected **you will receive a score of 0 on the assignment and cited for academic misconduct according to the University's code of academic misconduct:**  
[http://www.writing.ku.edu/instructors/guides/academic\\_misconduct.shtml](http://www.writing.ku.edu/instructors/guides/academic_misconduct.shtml)

**Class Discussion:** Discussion guides will be provided to students before each discussion session of Autism's False Prophets. Participation points will be provided to students that complete these guides, bring them to class and participate in discussions. **4** points per session or **12** points total are available. Discussion points are worth 12% final grade.

**In-class presentation of group project on evaluating assessments and interventions:** During the last 2 weeks of class you will work on a project to use the material we have discussed in class to select an assessment instrument or course of intervention to address an assigned problem. You will need to justify the selection based on research. You will summarize your findings in a 1-page information sheet. References will be provided on the back. Your group will also present your findings in a 5-10 minute group presentation to the class. A grading rubric will be provided and your paper and presentation is worth 7% final grade

**Extra Credit:** There will be many opportunities to earn extra credit for in-class assignments. This is my way of making random attendance checks that translate into extra credit points. These opportunities will not be announced in advance.

**Grading Summary:**

|                             |      |
|-----------------------------|------|
| Quizzes                     | 12%  |
| Midterm exam                | 15%  |
| Final Exam                  | 18%  |
| Writing project part 1      | 12%  |
| Writing project part 2      | 12%  |
| Writing project part 3      | 12%  |
| Class Discussion            | 12%  |
| In-class group presentation | 7%   |
| Total                       | 100% |

A plus/minus grading system is used based on the % total points earned in the course. At the end of the course I will weigh the points for quizzes, midterm, final, discussion and each part of the paper as described above and add these weighted scores. The following scale will be used to determine a final grade:



**Letter grade percentage range:**

| <b>Grade</b> | <b>Percentage Points</b> |
|--------------|--------------------------|
| A            | 93.50 and above          |
| A–           | 90.00–93.49              |
| B+           | 86.50–89.99              |
| B            | 83.50–86.49              |
| B–           | 80.00–83.49              |
| C+           | 76.50–79.99              |
| C            | 73.50–76.49              |
| C–           | 70.00–73.49              |
| D+           | 66.50–69.99              |
| D            | 63.50–66.49              |
| D–           | 60.00–63.49              |
| F            | 59.99 and below          |

**Accommodations**

"The Academic Achievement and Access Center (AAAC) coordinates academic accommodations and services for all eligible KU students with disabilities. If you have a disability for which you wish to request accommodations and have not contacted the AAAC, please do so as soon as possible. They are located in 22 Strong Hall and can be reached at 785-864-4064 (V/TTY). Information about their services can be found at <http://www.disability.ku.edu>. Please contact me privately in regard to your needs in this course."

If a scheduled exam, lab exercise, or quiz is in conflict with a mandated religious observance, you must notify the instructor in writing (e-mail is acceptable) within one week of receiving this syllabus so that an alternative arrangement can be made in advance of the scheduled requirement.

Pursuant to the University of Kansas' [Policy on Commercial Note-Taking Ventures](#), commercial note-taking is not permitted in SPLH 660. Lecture notes and course materials may be taken for personal use, for the purpose of mastering the course material, and may not be sold to any person or entity in any form. Any student engaged in or contributing to the commercial exchange of notes or course materials will be subject to discipline, including academic misconduct charges, in accordance with University policy. **Please note:** note-taking provided by a student volunteer for a student with a disability, as a reasonable accommodation under the ADA, is **not the same** as commercial note-taking and is **not** covered under this policy.