EPSY 576-4: Research in Educational Psychology
Department of Educational Psychology and Special Education
SOUTHERN ILLINOIS UNIVERSITY AT CARBONDALE

Instructor: ________________________________

Time

Prerequisite:
Admission to doctoral program in Educational Psychology and Special Education

Office Hours:
In the high country of the mind one has to become adjusted to the thinner air of uncertainty and to the enormous magnitude of questions asked, and to the answers proposed to these questions. Some scientific truths seem to last for centuries, others for less than a year. Scientific truth is not dogma, good for eternity, but a temporal quantitative entity. The time spans of scientific truths are an inverse function of the intensity of scientific effort. The more you look, the more you see. Instead of selecting one truth from a multitude, scientific investigation increases the multitude.

----Robert Persig, Zen and the Art of Motorcycle Maintenance

Seminar Description:
This seminar offers an introduction to research methods and current research issues in the areas of human learning and development, measurement and statistics, counselor education, and special education. The course focuses on what is currently known about selected major research issues in each of the above areas and what these findings imply for educational practice.

Seminar Objectives:
1. Survey the historical development of research methods.
2. Survey research methods and articulate the circumstances under which various methods are most appropriately used for research in the behavioral sciences.
3. Summarize and evaluate what is known about selected current research issues in human learning and development, measurement and statistics, counselor education, and special education.
4. Identify new research questions that logically follow from existing theory and research.
5. Develop a doable research proposal using existing data sets (e.g., simulation studies, meta-analysis, previously obtained data)
6. Provide a constructive critique of two research proposals (i.e., see objective #4).
7. Demonstrate competency in knowledge and application of professional oral and written communication including APA format and style.

Required Textbooks and Readings:


Outside readings of primary and secondary sources as suggested/required by guest presenters.

**Suggested References and Readings:**


**World Wide Web sites (also see pp. 370-372 of text):**


A Guide for Writing Research Papers: [http://webster.commnet.edu/apa/apa_index.htm](http://webster.commnet.edu/apa/apa_index.htm)


Plagiarism reference sites:

[http://www.lib.siu.edu/departments/instruction/plagiarism](http://www.lib.siu.edu/departments/instruction/plagiarism)


[http://owl.english.purdue.edu/handouts/research/r_plagiar.html](http://owl.english.purdue.edu/handouts/research/r_plagiar.html)

Copyright reference sites:

[http://www.copyright.gov/fls/fl102.html](http://www.copyright.gov/fls/fl102.html)

Seminar Requirements/Evaluation

1. I use a mastery approach to student evaluation. Attendance and participation are required. Satisfactory participation must show evidence of assigned and outside reading and participation in all class activities (objectives 1 & 2). Oral project presentations and critiques (see below) will not be graded (objectives 3, 4, & 5). The final project will be graded (objectives 3, 4, & 6). Outstanding class preparation and participation will be noted and may justify raising a borderline grade.

2. Participants will give an oral presentation related to the history of research methods in the behavioral sciences (See Appendix C).

3. Participants are required to develop an original research proposal that is doable, that is, it can be completed within six (6) months of the end of the current semester. The project will be critiqued by two seminar participants and presented orally by the principal investigator. See Appendix A for project criteria.

4. Each participant will serve as a reviewer on two projects for fellow seminar participants. Guidelines for the reviewers are found in Appendix B.

5. As per objective 6, project proposals are to be written in a professional style and follow the APA format for organizing a manuscript. Each manuscript should include a title page, an abstract, a text body, and a reference section. Writing assignments must use the typing instructions prescribed by the current APA Manual. The paper will be graded according to the evaluation format presented in Appendix D. I will review drafts of the integration paper if they are: (a) submitted in electronic format and (b) submitted at least two weeks before the due date. Please submit the final version of the project as a paper copy.

6. Participants have three opportunities to achieve their best score on a 20 item multiple-choice quiz on the publication standards of the American Psychological Association. (See Appendix E for specific learning objectives and sample questions.)

7. The written research project is due on the date listed in the class schedule. Two points will be deleted for each day the paper is late. Students may take an incomplete (INC) on the course only for unusual life circumstances. A written request for an INC must be made on or before the day the project is due. All incompletes must be made-up by the end of the following semester. If they are not, a grade will be assigned based on the work completed.

8. The SIUC Student Conduct Code defines plagiarism as academic dishonesty. The failure to properly credit other sources in your work is likely to incur sanctions varying (depending on the severity of the infraction) from a major critique of the paper to failure of the course to dismissal from the university. If you are unclear about what constitutes plagiarism please see me as well as consult the Morris Library and other links/sources listed above. I will have a Turnitin account for the class and require you submit a draft of your manuscript for review prior to writing the final version.
Grading Summary:

<table>
<thead>
<tr>
<th>Grade</th>
<th>APA Style Exam</th>
<th>Oral Presentation</th>
<th>Written Reviews</th>
<th>Written Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90% or higher score</td>
<td>1 presentation</td>
<td>2 critiques</td>
<td>90 - 100 points</td>
</tr>
<tr>
<td>B</td>
<td>80% or higher score</td>
<td>1 presentation</td>
<td>2 critiques</td>
<td>80 - 89 points</td>
</tr>
<tr>
<td>C</td>
<td>70% or higher score</td>
<td>1 presentation</td>
<td>1 critique</td>
<td>79 or fewer points</td>
</tr>
</tbody>
</table>

Additional Policies and Procedures:

Any participant who has a disability that needs accommodation must inform the instructor at the onset of the course.

Emergency Procedures: Southern Illinois University Carbondale is committed to providing a safe and healthy environment for study and work. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the SIUC Emergency Response Plan and Building Emergency Response Team (BERT) program. Emergency response information is available on posters in buildings on campus, available on the BERT's website at [www.bert.siu.edu](http://www.bert.siu.edu), Department of Public Safety's website [www.dps.siu.edu](http://www.dps.siu.edu) (disaster drop down) and in the Emergency Response Guidelines pamphlet. Know how to respond to each type of emergency.

Instructors will provide guidance and direction to students in the classroom in the event of an emergency affecting your location. It is important that you follow these instructions and stay with your instructor during an evacuation or sheltering emergency. The Building Emergency Response Team will provide assistance to your instructor in evacuating the building or sheltering within the facility.
# Course Schedule:

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Topic</th>
<th>Assignment</th>
</tr>
</thead>
</table>
| 1    | Class orientation  
Science & the Scientific Approach,  
Hypotheses, & Constructs | Read: course syllabus,  
Kerlinger & Lee, (K&L) Part One (Chapters. 1, 2 & 3) |
| 2    | Historical Foundations of Measurement and Research Methods | Biographical assignments |
| 4    | Sets, Relations, and Variance | K&L Part Two (4, 5, & 6) |
| 5    | Probability, Randomness, and Sampling | K&L Part Three (7, 8) |
| 6    | Analysis, Interpretation, & Inference | K&L Part Four (9, 10, 11, & 12) |
| 7    | Designs of Research | K&L Part Six (17, 18, 19, 20 & 21) |
| 9    | Types of Research | K&L Part Seven (22, 23, 24, 25)  
**APA Quiz Form A** |
| 10   | Measurement | K&L Part Eight (26, 27, 28)  
Supplemental Readings TBA |
| 11   | Observation & Data Collection  
Guest Faculty | K&L Part Nine (29, 30, 31)  
Supplemental Readings TBA |
| 12   | Publication and Critiques of Research Manuscripts  
Guest Faculty | APA Manual chapters 5, 6, 7, 8, Appendices A, B, C  
Supplemental Readings as assigned from Readings |
| 13   | Guest Faculty  
**Investigators provide reviewers with MS to critique** |
**Reviewers provide investigators with written critiques** |
| 15   | Participants’ presentations  
Course summary and evaluation. | |
| 16   | **FINALS WEEK** | |
APPENDIX A

Guidelines for Research Proposal

• Develop an *original* collaborative Project with two reviewers (if submitted for publication, the first author will decide the order of authorship for the second and third authors based on contributions to the final ms. (See APA Manual section 8.05.)

• Prepare Proposal that is *doable* over the next 6 months

• Identify publication outlet(s)

• Identify existing data sets, or algorithms for simulation research

• Create time-line for project

• Project should be completed in APA journal format through the methods section

• The two collaborators will provide written critique (mostly methods)

• Use 20 pages of text or less (consider the reference section is in addition to this), unless the targeted journal gives other guidelines.

• Double space *entire* manuscript

• Set all margins to 1 inch

• 12 point Times New Roman typeface is preferred (as per APA guideline 8.03). Sans serif type may be used in figures, however. Do not use compressed typeface.

• Show clear and conclusive evidence that the manuscript was carefully reviewed and edited.

• The research proposal will be presented to the seminar during one class session (approximately 30 minutes); project reviewers and other seminar participants will be given an opportunity to comment on the proposal (approximately 20 minutes). Although, it may not be a focus of the research proposal, each proposal will be discussed in the context of the project’s potential implications for educational practice. Presenters are encouraged to utilize whenever possible the conceptual (e.g., Set theory & Venn diagrams) and operational suggestions provide by Kerlinger and Lee.

• Once the proposal is complete and submitted, the principle investigator is encouraged to run the data analysis and submit a manuscript for publication or proposal for a conference presentation. The completion of which is, however, beyond the scope of the seminar. Inclusion of the second and third authors in this phase of the project is encouraged but optional.

Web sites with data set links:

*National Center for Education Statistics:* http://nces.ed.gov/

—*National Assessment of Educational Progress:* http://nces.ed.gov/nationsreportcard/

*National Institute on Alcohol Abuse and Alcoholism (NIAAA):* http://www.niaaa.nih.gov/

*U. S. Census Bureau*


APPENDIX B
Guidelines for Critique

- Each participant will provide a comprehensive written critique of each assigned research proposals.
- If submitted for publication, the authorship listing for the second and third authors for each project will depend on the relative contribution of the critique to the form of manuscript as submitted.
- Suggestions for how to provide helpful reviews including a critique format will be provide during the course of the seminar.

APPENDIX C
Historical Survey

Each student will present a brief historical account of four notable contributors to quantitative or qualitative research methods. The list below provides names from which you may choose. Your accounts may include some historical context about the contribution/person, but the main focus should be on the methodological contribution. In addition, please speculate on how you think each historical figure you present would respond to the question, Is mathematics an invention or natural law?

Students who wish to present on individuals not listed need to consult with me.

<table>
<thead>
<tr>
<th>Blaise Pascal</th>
<th>Florence Nightingale</th>
<th>David Edward Thorndike</th>
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</thead>
<tbody>
<tr>
<td>Karl Friedrich Gauss</td>
<td>Sir Isaac Newton</td>
<td>Karl Pearson</td>
</tr>
<tr>
<td>Lambert Adolphe Quetelet</td>
<td>Gottfried Leibniz</td>
<td>Charles Spearman</td>
</tr>
<tr>
<td>Sir Francis Galton</td>
<td>Hermann Conring</td>
<td>Jerzy Neyman</td>
</tr>
<tr>
<td>William Sealy Gossett</td>
<td>John Graunt</td>
<td>Jacob Cohen</td>
</tr>
<tr>
<td>Sir Ronald Fisher</td>
<td>Claude Lévi-Strauss</td>
<td>Sir Francis Bacon</td>
</tr>
<tr>
<td>E. F. Lindquist</td>
<td>Louis Thurstone</td>
<td>John Dewey</td>
</tr>
<tr>
<td>Margaret Mead</td>
<td>David Hume</td>
<td>Lee Cronbach</td>
</tr>
<tr>
<td>Jules Henri Poincaré</td>
<td>Pierre Simon de Laplace</td>
<td>Pierre de Fermat</td>
</tr>
<tr>
<td>B. F. Skinner</td>
<td>Charles Sanders Peirce</td>
<td>Ibn al-Haytham</td>
</tr>
<tr>
<td>Leon Festinger</td>
<td>Thomas S. Kuhn</td>
<td>Karl Popper</td>
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</tbody>
</table>

1 This question is a central theme in Janna Levin’s A Madman Dreams of Turing Machines
## Appendix D

### Protocol for Evaluating Project Proposal

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td><strong>APA and Journal Form</strong></td>
<td>0 4 8 12 16 20</td>
</tr>
<tr>
<td>(e.g., margins, headings, title page, font size &amp; style, references, running head, citations)</td>
<td></td>
</tr>
<tr>
<td>comments:</td>
<td></td>
</tr>
<tr>
<td><strong>Use of the English Language</strong></td>
<td>0 2 4 6 8 10</td>
</tr>
<tr>
<td>(e.g., grammar, spelling, sentence structure, punctuation)</td>
<td></td>
</tr>
<tr>
<td>comments:</td>
<td></td>
</tr>
<tr>
<td><strong>Organization and Clarity</strong></td>
<td>0 2 4 6 8 10</td>
</tr>
<tr>
<td>(e.g., visual &amp; content organization, transitional sentences, clarity of the paper's theme)</td>
<td></td>
</tr>
<tr>
<td>comments:</td>
<td></td>
</tr>
<tr>
<td><strong>Content</strong></td>
<td>0 &lt;--------&gt; [ ]&lt;--------&gt; 60</td>
</tr>
<tr>
<td>(ability to synthesize &amp; evaluate relevant literature; effective use of references; creativity; meeting project objectives)</td>
<td></td>
</tr>
<tr>
<td>comments:</td>
<td></td>
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</tbody>
</table>

Total Points

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General Comments
APPENDIX E

APA Style Requirements

When the Doctor of Philosophy degree in Education is awarded, the recipients have obtained the highest degree granted by their respective discipline. Unlike other degrees that focus on procedural knowledge, the curriculum for the Ph.D. degree prepares students to enter into the world of analysis, evaluation, and creativity, that is, where ideas are formed and shared. Each profession sets its own standards for how ideas are presented and judged. One of the standards common to education is the writing and publication standards set by the *Publication Manual of the American Psychological Association* (currently in its 6th edition). Without a thorough knowledge of these standards, a person’s ideas cannot be presented in their best form. Consequently, seminar participants will commit to these standards. The specific learning objectives for this seminar are:

1. Know the ethical and legal standards in publishing, responsibilities for ensuring the accuracy of scientific knowledge, obligations for protecting the rights and welfare of research participants, how to protect intellectual property rights, the process of peer review, and guidelines on working with the publisher while the article is in press (Chapters 1 & 8).
2. Know the parts and standards of journal writing (Chapter 2).
3. Recognize and correct improper headings and bias in language (Chapter 3).

**APA Sample Questions**

S1. The basic ethical and legal principles that underlie all scholarly research and writing have the following goal(s)?
   a. to ensure the accuracy of scientific knowledge
   b. to protect the rights and welfare of research participants
   c. to protect intellectual property rights
   d. all of the above are goals

S2. The Discussion section should begin with
   a. a statement regarding implications for future research.
   b. a statement of the support or nonsupport of your original hypothesis.
   c. a reformulation of the important points of the paper.
   d. an analysis of the flaws in your study.

APA code 2.06-2.11

S3. From the following examples, select the correct way to refer to a figure in text:
   a. see the figure above.
   b. see the figure on page 14.
   c. see Figure 2.
   d. see Figure 2 above on page 14.

APA code 5.01-5.06
## APPENDIX F

### CACREP ACCREDITATION STANDARDS

#### Learning Outcomes for EPSY 576

<table>
<thead>
<tr>
<th>CACREP Standard</th>
<th>Seminar Objectives</th>
<th>Learning Activity</th>
<th>Outcome Evaluation</th>
</tr>
</thead>
</table>
| IV-F-1. Demonstrates the ability to formulate research questions appropriate for professional research and publication. | 4. Identify new research questions that logically follow from existing theory and research. | In depth discussion of chapters 1 through 6 of Kerlinger & Lee | Formative: Peer review of proposal, Appendix B  
Summative: Criteria in Appendix A; Scoring Rubric in Appendix D |
| IV-F-2: Demonstrates the ability to create research designs appropriate to quantitative and qualitative research questions. | 2. Survey research methods and articulate the circumstances under which various methods are most appropriately used for research in the behavioral sciences.  
5. Develop a doable research proposal using existing data sets (e.g., simulation studies, meta-analysis, previously obtained data) | Seminar presentation on historical figures and contributions to research methods in the behavioral sciences.  
Guest speakers  
In depth discussion of relevant chapters in Kerlinger & Lee as well as Seligman articles.  
Written Research Proposal | Formative: Peer review of proposal, Appendix B  
Summative: Criteria in Appendix C  
Summative: Criteria in Appendix A; Scoring Rubric in Appendix D |
| IV-F-3: Demonstrates professional writing skills necessary for journal and newsletter publication | 7. Demonstrate competency in knowledge and application of professional oral and written communication including APA format and style. | Participants have three opportunities to achieve their best score on a 20 item multiple-choice quiz on the publication standards of the American Psychological Association.  
See Appendix E | Mastery Grading:  
A, if 90% is achieved  
B, if 80% is achieved  
C, if 70% is achieved |

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