OVERVIEW:

1. BROAD PURPOSE OF COURSE

This course is designed to introduce students to basic research methods used in health care research. The course will provide an overview of basic methodological concepts used in health care, social science, and behavioral science research. After completing this course you should be able to demonstrate an advanced understanding of all phases and components of the research process including: generating research questions and hypotheses, designing a study, selecting a study sample, measuring variables and constructs, collecting data and planning data analysis.

OBJECTIVES:

2. COURSE OBJECTIVES

Upon completion of this course, students should be able to:

1. Accurately critique different kinds of practice-related research reports.
2. Enhance skills in accessing and critically reviewing practice-related research.
3. Demonstrate understanding of various approaches to data collection and analysis
4. Select appropriate statistical procedures to analyze and correctly interpret different kinds of data.
5. Identify and follow appropriate procedures and rules for obtaining informed consent, preserving confidentiality, and notifying participants of benefits and risks related to research.

3. GRADING POLICY

Summaries of each assignment are provided below. Note that extended details of each assignment are included at the end of this syllabus.

Article Review: Each review is worth 10% points; total for both assignments is 20% of final grade

For these assignments, you are required to critique other people’s scientific work, and in doing so, you will become better at critiquing your own work and become a better writer because of this practice. There will be two articles reviews due in this course so that you can continue to develop these important skills and also use the feedback you receive on the first assignment to improve on the second assignment. Your article review will consist of two tasks:

- 2-3 pages long summary described below (1 inch margins, Times New Roman 12-point font and double spacing).
- A 10-15 minute PPT presentation.
Team Homework Assignments: Each assignment is worth 5% points. Total for all assignments is 30% of final grade
Team will consist of 2-4 persons. You will be required to complete six team assignments throughout the course of this semester. Each assignment is intended to have your team make progress on the various sections of your research project; thus, you are expected to work with your team members to complete each of the assignments. In addition, you will have the opportunity to receive feedback prior to submitting the final research team project paper at the end of the semester; hence, you should consider and incorporate the suggestions that are received.

Poster Presentations: 15% of final grade
You will be required to update the class on your team’s research project and summarize your progress on poster format. Do note that this is an Individual Assignment and every student should complete a unique and independent poster. This assignment will enable you to summarize your own interpretation of your team’s project and will test your own assumptions against your team members’. You will also have an opportunity to receive feedback to incorporate into your final team products. During a class session, you will present your poster to the class.

Final Team Research Project Presentations: 15% of final grade
Your team will be required to give a 25-30 minute presentation of your research proposal. You are allowed an additional 5-10 minutes of discussion time. The use of PowerPoint slides is preferred.

Final Team Research Project Paper: 15% of final grade
Each team will be required to write a research project paper of a study in a selected area of interest. One research project paper per team should be submitted. Please conform to APA format and do not include more than 1 direct quote from the literature. No late proposals will be accepted unless approved by the instructor.

Class Participation: 5% of final grade
Active participation in class, peer evaluations, and during group activities is crucial for learning in this course. Class participation also includes playing active roles in creating a supportive atmosphere in which every participant's learning will be fostered. I do expect you to attend every class meeting. Excessive absences will be counted against participation points. Feel free to discuss and share with me whatever problems emerge that can affect your participation in the class.

METHODS OF EVALUATION

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Percentage of final grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Article Reviews</td>
<td>20</td>
</tr>
<tr>
<td>Poster Presentations</td>
<td>15</td>
</tr>
<tr>
<td>Team Homework Assignments</td>
<td>30</td>
</tr>
<tr>
<td>Final Team Research Project Presentations</td>
<td>15</td>
</tr>
<tr>
<td>Final Team Research Project Paper</td>
<td>15</td>
</tr>
<tr>
<td>Class Participation</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total Percentage Points Possible</strong></td>
<td><strong>100</strong></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade Distribution</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>A (100-95)</td>
<td>C+ (78-79)</td>
</tr>
<tr>
<td>A- (90-94)</td>
<td>C (75-77)</td>
</tr>
<tr>
<td>B+ (88-89)</td>
<td>C- (70-74)</td>
</tr>
<tr>
<td>B (85-87)</td>
<td>F (≤ 69)</td>
</tr>
<tr>
<td>B- (80-84)</td>
<td></td>
</tr>
</tbody>
</table>
4. TEXTS AND READINGS

Required:


Recommended:


5. ACADEMIC INTEGRITY

**Academic Integrity Policy**

Students are expected to abide by and uphold the Academic Integrity Policy for Graduate Students from the Graduate School of Arts & Sciences. All students should have received this policy. Please contact the Office of the Dean of the School of Arts & Sciences to obtain copies of this document.

**Students with disabilities**

Washington University is committed to providing accommodations and/or services to students with documented disabilities. Students who are seeking support for a disability or a suspected disability should contact the Disability Resource Center (DRC) at 5-4062 on the lower level of the Women's Building (drc@dosa.wustl.edu). The DRC is responsible for approving and arranging all accommodations for University students.

<table>
<thead>
<tr>
<th>Spring Semester 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Martin Luther King holiday - no classes January 15 (Monday)</td>
</tr>
<tr>
<td>First day of classes January 16 (Tuesday)</td>
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<tr>
<td>Spring Break - no classes March 11-17 (Sunday-Saturday)</td>
</tr>
<tr>
<td>Last day of classes April 27 (Friday)</td>
</tr>
<tr>
<td>Reading and Exams April 30-May 9 (Monday-Wednesday)</td>
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<tr>
<td>Commencement May 18 (Friday)</td>
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</tbody>
</table>
### Topic 1: Identifying a Study Question

#### January 22

<table>
<thead>
<tr>
<th>Week 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-Class Activities:</td>
</tr>
<tr>
<td>1. Syllabus overview</td>
</tr>
<tr>
<td>2. Review Getting Started (Chapters 1, 2)</td>
</tr>
<tr>
<td>3. Team Assignments and Discuss possible Research Topics</td>
</tr>
</tbody>
</table>

#### January 29

<table>
<thead>
<tr>
<th>Week 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-Class Activities:</td>
</tr>
<tr>
<td>1. Q &amp; A Session for all Assignments, Schedule Dates</td>
</tr>
<tr>
<td>2. Lecture over Reading Assignments:</td>
</tr>
<tr>
<td>a. Literature Reviews and Research Topics (Chapters 3-5)</td>
</tr>
<tr>
<td>c. Wakefield, A. (2014). Searching and critiquing the research literature. <em>Nursing standard (Royal College of Nursing (Great Britain):</em> 1987, 28(39), 49-57.</td>
</tr>
<tr>
<td>3. Group Meet to Discuss Homework Assignment #1</td>
</tr>
</tbody>
</table>

### Topic 2: Selecting a Study Approach

#### February 5

<table>
<thead>
<tr>
<th>Week 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-Class Activities:</td>
</tr>
<tr>
<td>1. Lecture over Reading Assignments:</td>
</tr>
<tr>
<td>a. Reviews and Qualitative Studies (Chapters 6, 7, 14)</td>
</tr>
<tr>
<td>2. Article Reviews: Student Presentations (2)</td>
</tr>
<tr>
<td>3. Team Project:</td>
</tr>
<tr>
<td>a. Homework Assignment # 1 Due</td>
</tr>
<tr>
<td>b. Interactive Discussion over Homework Assignment #1</td>
</tr>
</tbody>
</table>
I. Guest Speaker: **IRB Representative, History of IRB**

II. In-Class Activities

1. Lecture over Reading Assignments
   a. Descriptive Study Approaches (Chapters 8-10)

2. Article Reviews: Student Presentations (2)

3. Team Project:
   a. Group Meet to Discuss Homework Assignment #2

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February 19

I. Guest Speaker: **Steve Pijut, Washington University Writing Center**

II. In-Class Activities

1. Lecture over Reading Assignments
   a. Analytical Study Approaches (Chapters 11, 12)

2. Article Reviews: Student Presentations (3)

3. Team Project:
   a. Homework Assignment #2 Due
   b. Interactive Discussion over Homework Assignment #2

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February 26

I. In-Class Activities

1. Lecture over Reading Assignments
   a. Experimental Study Approaches (Chapters 13)

2. Article Reviews: Student Presentations (2)

3. Team Project:
   a. Group Meet to Discuss Homework Assignment #3

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**Topic 3: Designing the Study and Collecting Data**

**March 5**

------------- Week 7 -------------

I. Guest Speaker: Shaina Sowles, Tips for Publications

II. In-Class Activities

1. Lecture over Reading Assignments

2. Article Reviews: Student Presentations (2)

3. Team Project:
   a. Homework Assignment #3 Due
   b. Interactive Discussion over Homework Assignment #3

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**March 12**

---------------- Spring Break ----------------

**March 19**

------------- Week 8 -------------

I. In-Class Activities

1. Lecture over Reading Assignments
2. Article Reviews: Student Presentations (3)

3. Team Project:
   a. Group Meet to Discuss Homework Assignment #4

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**March 26**  
**Week 9**

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I. In-Class Activities

1. Lecture over Reading Assignments
   b. Reporting Statistical Results in Your Paper
   c. Reporting Results of Common Statistical Tests in APA Format
   d. Making Tables and Figures

2. Team Project:
   a. Homework Assignment #4 Due
   b. Interactive Discussion over Homework Assignment #4

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**April 2**  
**Week 10**

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In-Class Activities

1. Poster Presentations

2. Team Project:
   a. Group Meet to Discuss Homework Assignment #5

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**April 9**  
**Week 11**

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In-Class Activities

1. Lecture over Reading Assignments
2. Team Project:
   a. Homework Assignment # 5 Due
   b. Interactive Discussion over Homework Assignment #5

April 16
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Week 12 -----------------------------------

I. Writing Workshop: Steve Pijut, Washington University Writing Center

II. In-Class Activities
   1. Team Project:
      a. Group Meet to Discuss Homework Assignment #6

April 23
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Week 13 -----------------------------------

In-Class Activities
   1. Lecture over Reading Assignments:

   2. Team Project:
      a. Homework Assignment # 6 Due
      b. Interactive Discussion over Homework Assignment #6

April 30
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Week 14 -----------------------------------

Team Research Project Presentations

May 7
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Week 15 -----------------------------------

Final Paper Due
Article Review: Each review is worth 10% points; total for both assignments is 20% of final grade

Instructions:

For this assignment, you are required to think critically about the scientific literature. We are all conditioned to trust what we read at first glance if it is in print but it is important to be critical about what we are reading and distinguish what is trustworthy from what is untrustworthy. As you critique other people’s work, you should also become better at critiquing your own work and you will likely become a better writer because of this practice. There will be two articles reviews due in this course so that you can continue to develop these important skills and also use the feedback you receive on the first assignment to improve on the second assignment.

For each review you will have a choice of three chapters/articles to review. You should at least skim all three (to see which you feel you can best assess - this is often the article you have the strongest reaction to, whether positive or negative), but you only have to review one.

Your article review will consist of two tasks that in total are worth 10% of your final grade:

1. A summary of the chapter/article:
   - Summarize the main points the author discusses.
   - Detail clearly what the author's central argument is.
   This summary is only to give the necessary background for the analysis you will give; this is a minor piece of your overall review and it should be brief.

2. A detailed analysis of the article/chapter:
   - This is the most important part of the review and where your grade will be determined so you should accordingly spend the most time here. You should demonstrate strongly that you have read the article/chapter and that you have thought critically about its content.
   - In your analysis of the article, you may wish to consider answering some of the following questions:
     o How well are the main points of the article articulated? Is the writing understandable to you? Were you provided with enough background evidence to understand the study?
     o How convincing were the author (s)? What evidence was used to support the points that the author (s) were trying to make?
     o Did the article flow logically?
     o What interested you the most about this article? What made you select it to start with and were you even more interested in the topic after your read the article?
     o What are the aspects of this article that you disagree with or wish could have been different?
     o What are the most useful aspects of this article?

Do not be afraid to present a critical overview or to be overly positive of the article so long as you present evidence from the article to support your opinions; examples in the form of quotations and summaries/paraphrases are all allowed to use in order to build your case.
Team Homework Assignments: Each assignment is worth 5% points. Total for all assignments is 30% of final grade.

Instructions:

<table>
<thead>
<tr>
<th>Team Homework Assignment # 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designing your study: Significance of your study</td>
</tr>
<tr>
<td>This is a Team Assignment that is due on February 5</td>
</tr>
<tr>
<td>Details: Think about a possible topic for your upcoming team paper and presentation. Draft 2-3 paragraphs that describe the significance of your study.</td>
</tr>
<tr>
<td>Find three articles that support the rationale for your study and explain the content within these studies that justifies your own research ideas. Current studies are best.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Team Homework Assignment # 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designing your study: Drafting your Introduction</td>
</tr>
<tr>
<td>This is a Team Assignment that is due on February 19</td>
</tr>
<tr>
<td>Details: Continue making progress on your upcoming team paper and presentation. Describe the overall topic that you will investigate, why it is important to the field, and why your team is interested in the topic. Summarize concisely the key literature related to your topic.</td>
</tr>
<tr>
<td>This section should be 3-5 pages in length.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Team Homework Assignment # 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designing your study: Outlining your approach</td>
</tr>
<tr>
<td>This is a Team Assignment that is due on March 5</td>
</tr>
<tr>
<td>Details: Continue making progress on your upcoming team paper and presentation. Draft an experimental design to address your proposed research question (s). Detail your research question, specific hypotheses, and the proposed sample. This section should be 3-5 pages in length.</td>
</tr>
</tbody>
</table>
Team Homework Assignment # 4

Designing your study: Draft your Methods section

This is a Team Assignment that is due on March 26

Details: Continue making progress on your upcoming team paper and presentation. Draft a Methods Section that includes details on your Participants, Procedure, and Measures/Materials.

- Participants
  - Describes who the research participants were, how they were selected, and how many were used. What are your inclusion and exclusion criteria?

- Procedure
  - Complete details about what happened study and how the research was conducted. Report the participants' instructions and all of the experimental manipulations. Indicate how many trials were used, the nature of your intervention, whether your study is cross-sectional or longitudinal, and in what order the experimental conditions were run. Provide enough detail to permit replication

- Measures/Materials – This section should describe the source of the actual data
  - What measures were used—(i.e., surveys, interviews, etc.). Measures include the following elements: the construct or variable being measured, the name of the measure, a citation for the measure if it is published, how many items there are, a sample item, how items are scored, what higher and lower scores mean, and research or data supporting the reliability and validity of the measure
  - Details on any materials—like special lab equipment

This section should be 3-4 pages in length.
Team Homework Assignment # 5

Designing your study: Describe your Analysis and Results sections

This is a Team Assignment that is due on April 9

Details: Continue making progress on your upcoming team paper and presentation.

Draft an Analysis section. You should describe how the data will be presented in the results section (e.g., mean vs median), which statistical tests will be used for the inferential data, and what p value is deemed to indicate a statistically significant difference.

Draft a Results section. You should describe the results from the primary analyses which should consist of your most important/compelling findings. Then, use new/separate paragraphs for results to report on any secondary analyses.

The text of these sections should be 3-4 pages in length for quantitative findings or 6-8 pages if presenting qualitative data.

Team Homework Assignment # 6

Designing your study: Draft your Discussion section

This is a Team Assignment that is due on April 23

Details: Continue making progress on your upcoming team paper and presentation. For this assignment you will interpret your findings, evaluate your hypotheses or research questions, discuss unexpected results, and tie your findings to the previous literature (discussed first in your literature review). You should not simply repeat or rearrange the introduction; instead, you should describe how your study has moved the research problem forward from where you left off at end of the introduction. The recommendation is for 5-6 pages of text.
Poster Presentation: 15% of final grade

Instructions:

For this project, you will summarize the progress of your Team’s Project using a poster format. As stated above, this is an Individual Assignment and your poster should be unique from those of your team members’ posters. The purpose of this assignment is to enable you to summarize your own interpretation of how your team’s project is progressing; fulfilling this assignment will help you to test your own assumptions of how your project is going against your team members’ assumptions.

During a class session, you will present your poster to the class. You will also have an opportunity to receive feedback to incorporate into your final team products.

Present your research in a poster format: “Posters are widely used in the academic community, and most conferences include poster presentations in their program. Research posters summarize information or research concisely and attractively to help publicize it and generate discussion. The poster is usually a mixture of a brief text mixed with tables, graphs, pictures, and other presentation formats. At a conference, the researcher stands by the poster display while other participants can come and view the presentation and interact with the author.”

Content Checklist for Poster:

- The title and the author’s name appear at the top center of the poster.
- The poster does not include an abstract
- The poster has separate sections for the background, methods, results, and conclusions; additional content, such as a section for goals or objectives and a section for references, may also be helpful
- Images are used instead of words as often as possible; when words are needed, short sentences and bulleted lists are used rather than paragraphs
- The poster includes at least 3 separate images, such as tables, figures, flowcharts, photographs, or maps

Design Checklist for Poster:

- The text is large enough that it can be read from several feet away from the poster; Arial size 24 font or Times New Roman size 28 font is the smallest recommended size for primary content (the reference list and other secondary content can be a smaller font)
- All parts of graphs, tables, and other images – including the title, axis labels, and keys – can be read from several feet away

For additional guidance see this article:
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1955747/
Final Team Research Project Presentations: 15% of final grade

Instructions for Research Project Presentations:

Your team will be required to give a 25-30 minute presentation of your research proposal. You are allowed an additional 5-10 minutes of discussion time. The use of PowerPoint slides is preferred.
Final Team Research Project Paper: 15% of final grade

Instructions for Research Project Paper:

Each team will be required to write a research project paper of a study in a selected area of interest. One research project paper per team should be submitted. Please conform to APA format and do not include more than 1 direct quote from the literature. No late proposals will be accepted unless approved by the instructor.

You will be required to write a research proposal to conduct a study in your area of interest. Proposal should be about 10 to 15 pages long with 1” margins (font should be 12 Times New Roman). Please do not include more than 1 direct quote from the literature. The content of the proposal should include the following:

1. Title page
2. Introduction (1-2 pages)
   a. Specific aims
   b. Research questions to be answered
3. Review of the Literature (3 – 5 pages)
4. Significance of the study (1 – 2 pages)
5. Methods/Results section (4 – 6 pages)
   a. Descriptions of the participants
   b. Procedures
   c. Measures
   d. Data analysis
   e. Results
6. Discussion/Summary (1-2 pages)
7. References

No late proposals will be accepted unless approved by the instructor.