PHCY 5990-41 Empirical Analysis for Health Services Administration
3 Credit Hours

Course Description: This course builds on a knowledge of research methods and statistical analysis to provide an overview of how research methods and data analysis can be used by researchers and clinicians to draw conclusions about health services, clinical technologies and programs, and policy analysis. The purpose of the course is to equip students with an understanding of research and policy debates related to economic, political, and administrative aspects of health services.

Course Goals: This course is designed to critically evaluate evidence to answer questions related to medical care, health policy, and health services research. Study attributes of interest include: identifying relevant research questions, selecting appropriate research methods, use of appropriate statistical procedures, interpreting findings, and making conclusions based on the evidence presented. By the conclusion of this course it is expected that students will become critical consumers of health care evidence.

Place and Time of Class Sessions
This course will be taught primarily in synchronous fashion. Virtual classroom sessions will be held live each week on Tuesday afternoon/evening (except October 31, Wednesday Nov 1 is the class date). Students will be responsible for completing course materials as their time permits, each week, during the 7 weeks of the course, with quizzes and exams being administered on weekends. Students are expected to actively participate in discussions and discussion board on a regular basis.

Prerequisites:
PHCY 5041 Health Services Administration Research Methods
PHCY 5042 Statistics for Health Services Administration

Course Objectives
Upon successful completion of this course, the student will be able to:
- Evaluate the scientific validity and reliability of a published research article.
- Evaluate the title of a research article.
- Assess the accuracy and completeness of a research article’s abstract.
- Determine whether the introduction provides a clear explanation of the nature and scope of the problem being investigated.
- Determine whether the objective of the study has been clearly stated, including the intended outcomes of the research.
- Evaluate the design of the study to determine whether the methods used will result in data that can be analyzed in order to support study objectives.
- Determine whether the study design is described in a clear and detailed way that will allow replication of the research by subsequent investigators.
- Evaluate the data source(s) to determine if it is appropriate for answering the study’s research question(s).
Determine if the study population is adequately described.
Evaluate internal and external factors may introduce bias in the investigation.
Determine whether the statistical tests used are appropriate, including potential errors in statistical analysis that may lead to invalid results and conclusions.
Evaluate figures, tables, and charts to determine whether the results presented in these visual representations facilitate an understanding of the study and the data evaluated.
Determine whether results have been appropriately presented and explained, including limitations of the study.
Examine whether the discussion and conclusion are consistent with the study objectives and are justified by the results.
Determine whether the research fits into the context of the conclusion.
Evaluate the relationship between the analysis of study data and the conclusions of the researcher.
Use the PICOS framework to determine if comparative studies have limited risk of bias.

Course Learning Resources:
- Required Readings
- Posted Video Lectures
- Posted Expert Videos
- Journal Articles

Course Structure & Outline
This course will be conducted live using an online virtual classroom. The first course session will contain a discussion of the course structure and introductory material related to evaluating a research article. For the following next six weeks of the course, students will present research articles and led the discussion of these articles. Expect that more than 1 article will be discussed at each session.

The course will adhere to the following schedule:
- Class 1: Course Orientation--The Importance of Scholarly Literature Evaluation
  - Assigned Reading
- Class 2: Clinical Trials
- Class 3: Meta-Analyses
- Class 4: Observational Studies
- Class 5: Healthcare Leadership and Quality Improvement
- Class 6: Health Economics
- Class 7: Health and Pharmaceutical Policy Analysis
**Evaluation Techniques:**
Class participation 25%
Weekly quizzes 25%
Exams (2 – midterm and final) 50%

**Grading:**
A: 90 - 100
B: 80 – 89
C: 70 – 79
D: 60 – 69
F: <60

**Class Attendance Policy**
Students must regularly attend online classes and/or participate in discussion board. Each student is expected to provide 1 “journal club” session lasting no more than 15 minutes. The purpose of the journal club is to provide a brief overview and critique of a published article. Each week up to 6 student presentations will be given. Papers for each week are provided below. Only 1 student may select each paper.

Students will earn 10 points for leading the journal club discussion for their selected paper. The remaining points (15) are earned by attending each class session, and participating in the discussion about the presented papers.

**Quizzes**
Each week students will be expected to complete an online quiz taken through the University of Wyoming’s Canvas course site. Quizzes will cover the papers and associated reading for the relevant week. Students will have 7 days after each session to complete the quiz for that week. Quizzes contribute 25% toward overall course grade. Each quiz is worth 10 points.

Inquiries regarding quizzes and exams should be directed to the course coordinator and within a week following the assessment. No grade appeals will be considered after this time has elapsed.

**Exams**
Two exams will be conducted. The mid-term exam will consist of a timed multiple choice and short answer online test. The final exam will be a take-home exam consisting of evaluating an assigned article. All exams (and quizzes) are independent activities. Contacting another student or sharing information about the quiz or exam is prohibited. This includes answering questions about the content, difficulty, format, or specific questions. All work is to be completely independent of any other person, including others not enrolled in the course.
Make-up Quiz/Exam Policy
Students who miss an exam will receive a grade of zero on that missed assessment. Any student who misses quizzes and/or exams of a sufficient number that indicate the student has not completed enough coursework to achieve the objectives of the course will be given failing grade for the course.

Academic Dishonesty Statement:
The University of Wyoming is built upon a strong foundation of integrity, respect and trust. All members of the university community have a responsibility to be honest and the right to expect honesty from others. Any form of academic dishonesty is unacceptable to our community and will not be tolerated. Teachers and students should report suspected violations of standards of academic honesty to the instructor, department head, or dean. Other University regulations can be found at: http://uwadmnweb.uwyo.edu/legal/universityregulations.htm

Disability Support Statement:
The University of Wyoming is an affirmative action/equal opportunity educator and employer. If you have a physical, learning, or psychological disability and require accommodations, please let the instructor know as soon as possible. You will need to register with, and provide documentation of your disability to University Disability Support Services (UDSS) in SEO, room 330 Knight Hall. The University Disability Support Services website, which may be found at: http://uwadmnweb.uwyo.edu/udss/facultyandstaff/tipsforteaching.asp or you may contact UDSS for more information at (307) 766-6189, TTY: (307) 766-3073

Readings by Week:

Week 1 – Course introduction


Week 2 – Clinical Trials
*Guyatt et al. Users’ guide to medical literature: how to use an article about therapy or prevention. JAMA 1993; 270:2598-2601.


**Week 3 – Meta-Analysis**


**Week 4 – Observational Studies**


**Week 5 - Healthcare Leadership and Quality Improvement**

*Fan et al.* How to use an article about quality improvement. *JAMA* 2010; 304:2279-2287.


**Week 6 - Health Economics**

*Drummond et al. Users’ guide to medical literature: how to use an article on economic analysis of clinical practice. JAMA 1997; 277:1552-1557.


Chit et al. Cost-effectiveness of high-dose versus standard-dose inactivated influenza vaccine in adults aged 65 years or older: an economic evaluation of data from a randomized controlled trial. *The Lancet* 2015(December); 15:1459-1466


**Week 7 - Health and Pharmaceutical Policy Analysis**


