Economic issues and analytical techniques relevant to the performance and evaluation of clinical research are investigated. Special emphasis is placed on the theory, practice, usefulness, and limitations of cost-effectiveness analysis. Topics covered include decision analytic modeling as applied to economic evaluation, estimation of costs, and quality-adjusted measures of benefits. Class sessions will include lecture, classroom exercises and discussion, and student presentations of original research proposals.

This course is part of the OJOC master’s program in Clinical Research Design and Statistical Analysis.

**Grading and Course Requirements**

- **Exam** (35% of total grade), held during our October 2012 class. During this exam, you may not consult any books, articles, or notes, and you may not use the Internet. You may use a calculator, but I will try to avoid requiring any messy calculations.

- **Short paper** (30% of total grade), due at the beginning of our first class meeting in September 2012. Each student is to select one of the four published articles available under the September readings on the CTools site for this course, then write a 6-10 page paper (double-spaced) critiquing the economic analysis in this article. The critique should focus on the extent to which the article provides cost-effectiveness or cost-benefit analysis that helps relevant parties make decisions about a medical treatment, prescription drug, public health intervention, etc. We will discuss all four of these articles in class in September.

- **Original research proposal** (35% of total grade), which you will present to the class during one of our last five sessions (December 2012 or January, February, March, or April 2013). Working in groups of two or three, develop a proposal for an original cost-effectiveness research study related to health. Prepare a PowerPoint presentation and lead a 30-minute class discussion of the proposal. You should distribute to the class a 1-2 page outline of your proposal; this need not be in sentence form. Please e-mail me, no later than the beginning of our October 2012 class, the names of the students in your group, the title of your proposed research study, and the preferences of the members of your group regarding which of the five
available months your wish to present. We will use our November 2012 class for discussions within each group of their project, and I will speak with each group and try to provide advice. I strongly encourage you to be ambitious in your proposal. Try to develop a proposal for a real research project that plausibly could lead to a refereed journal article, even if you do not have the time or the resources to get beyond the early stages of this project before this course finishes. It is far better to outline the early stages of a publishable study than to present a fully polished academic exercise that has no prospect of leading to a refereed journal article.

**Textbooks**

I would like you to buy and read three books, at varying levels of difficulty:

1. Peter Muennig, *Cost-Effectiveness Analysis in Health: A Practical Approach*, 2nd edition (San Francisco: Jossey-Bass, 2007). This book presents cost-effectiveness analysis at a level that is accessible to clinical researchers with no prior background in economics. You need to master the material in the Muennig book to be able to understand a lot of the research literature and to work productively with an expert on cost-effectiveness analysis on a joint research project.

2. Alastair M. Gray, Philip M. Clarke, Jane L. Wolstenholme, and Sarah Wordsworth, *Applied Methods of Cost-effectiveness Analysis in Health Care* (New York, Oxford University Press, 2011). This book is up-to-date and more advanced than the Muennig book. If you master the material in the Gray *et al.* book, then you will be able to make an important contribution to the cost-effectiveness aspects of a research project.

3. Marthe R. Gold, Joanna E. Siegel, Louise B. Russell, and Milton C. Weinstein (eds.), *Cost-Effectiveness in Health and Medicine* (New York: Oxford University Press, 1996). This book is old and is sometimes quite dense, but it set the standards for cost-effectiveness studies in health and medicine. It should be useful to you as a reference book. If you need to convince a journal editor of the appropriateness of your methodology for a cost-effectiveness study, then cite the Gold *et al.* book. Some of the theoretical material in this book is aimed at PhD economists rather than at MD’s doing clinical research; don’t worry if you cannot understand everything.
Course Outline (subject to change)

Saturday, February 11, 2012, 1:30-5:20 PM
Introduction to Economic Evaluation


Gray et al. book, chapters 1 – 2.


Friday, March 16, 2012, 3:30-5:20 PM and
Sunday, March 19, 2012, 8:00-11:50 AM
(1) Basic Principles of Cost-Effectiveness Analysis (continued from February)
(2) Measuring Costs
(3) Discounting


Gold et al. book, chapters 1, 2, 6, and 7.

Saturday, April 14, 2012, 1:30-5:20 PM and
Sunday, April 15, 2012, 12:00 noon – 1:50 PM
*Measuring Outcomes*


**Sunday, May 13, 2012, 8:00 – 11:50 AM**
*Decision Analysis and Sensitivity Analysis*


**Saturday, June 9, 2012, 1:30 – 5:20 PM**
(1) *Exercises in computer lab with TreeAge Pro decision-analysis software*
(2) *Reporting results*


**July 19-22, 2012** (two hours of class)
Read “Questions for Assessing Cost-Effectiveness Studies” (on CTools site)

Discussion in class, based partly on the checklist, of the following cost-effectiveness studies:

Gold *et al.* book, Appendix B


August 9-12, 2012
This class does not meet in August 2012.

September 13-16 (four hours of class)
   (1) More exercises in computer lab with TreeAge Pro decision-analysis software.
   (2) Discussion of economic analysis in four published studies.

Students should read all of the articles listed below, which will be discussed in class. A short paper on one of the four articles is due no later than the beginning of the first class for HMP 542 in September.


October 11-14 (two hours of class)

Exam in class. During this exam, you may not consult any books, articles, or notes, and you may not use the Internet. You may use a calculator, but I will try to avoid requiring any messy calculations.

Topics for research proposals due. Each group should e-mail Greg Saltzman (saltzman@umich.edu), no later than the start of today’s class, the names of the students in the group, the topic for the research proposal, and the preferences of the members of the group regarding when to present (December, January, February, March, or April). I will work out the presentation schedule while you are taking the exam, then have a brief discussion with the class immediately after the exam to make sure that my proposed presentation schedule is acceptable to everyone.

November 8-11, 2012 (two hours of class)
Discussion within each student group of proposal for original cost-effectiveness research study. Greg Saltzman will meet briefly with each group.
December 6-9, 2012 (two hours of class)
Three student presentations of proposals for original cost-effectiveness research studies

January 10-13, 2013 (two hours of class)
Three student presentations of proposals for original cost-effectiveness research studies

February 7-10, 2013 (two hours of class)
Three student presentations of proposals for original cost-effectiveness research studies

March 7-10, 2013 (two hours of class)
Three student presentations of proposals for original cost-effectiveness research studies

April 4-7, 2013 (two hours of class)
Three student presentations of proposals for original cost-effectiveness research studies