The purpose of this course is to better acquaint students with the methodological issues of research design and secondary data analysis widely used in empirical health services research. To deal with these methods, the course will use a combination of readings, lectures, examples, problem sets (using Stata), and discussion of applications. The course assumes that students have had a prior course in statistics, including the use of linear regression methods.

The final grade for the course will depend on several problem sets (60%), class participation (10%), and a final exam (30%). Any dates noted in the syllabus are tentative.

The primary reading material is excerpted from several econometrics and research design texts:

- Baum CF. An Introduction to Modern Econometrics Using Stata. College Station: Stata Press, 2006.

Required readings, including applications listed in the syllabus and excerpts from the above texts, can be found on Chalk. The following are additional sources that students may find useful:

- Stata manuals

All required course readings will be on Chalk. Problem sets should be completed using Stata version 10 or 11, available in Usite, Regenstein and Crerar. Check www.stata.com for helpful information.
COURSE OUTLINE

**HSR Basics**

Mar 28  Introduction: What is Health Services Research?

Mar 30  Validity in Quasi-Experimental Design
  ▪  Shadish, Cook and Campbell, Chapters 2 and 3. (Also see Trochim.)

**Typical HSR Challenges in Cross-Sectional Analysis**

April 4  Binary Outcomes: OLS, Logit/Probit, and Linear Probability Models
  ▪  Stock and Watson, pp. 297-322.
  
  Binary Outcomes: Interpreting Magnitudes
  
  Application:

April 6  Binary Outcomes: Interaction Terms
  ▪  Stock and Watson, pp. 197-236.

April 11  Clustered data: Clustering and Robust Standard Errors
  ▪  Baum, pp. 133-139

**Use of Panel Data in Quasi-Experimental HSR Designs**

April 13  Introduction to Hierarchical/Multilevel/Panel Data Models

April 18  Fixed Effects and Random Effects
  ▪  Wooldridge, pp. 426-475.
  ▪  Stock and Watson, pp. 271-295.

April 20  Fixed Effects and Random Effects continued

April 25  Fixed Effects and Random Effects
  Application:

April 27  Difference-in-Differences Models
  ▪  Stock and Watson, pp. 373-409.
  Applications:
  ▪  Lichtenberg FR, Sun SX. The impact of Medicare Part D on prescription drug use

Selection Issues in HSR and Several Methods for Addressing Them

May 2 Introduction to Selection Issues
May 4 Propensity Scores

*May 4  
1:50-2:10  
Propensity Scores Applications:
  - Woodridge, pp. 484-514.
  - Stock and Watson, pp. 331-366.
  - Harris KM, Remler DK. Who is the marginal patient? Understanding instrumental variables estimates of treatment effects. Health Serv Res. 1998 Dec;33(5 Pt 1):1337-60.

May 18 Instrumental Variables
  Applications:

Analysis of Complex Survey Data

May 23 Introduction to Complex Survey Data
May 25 Complex Survey Data
  Application:

*June 1 Review and Conclusions  
*Week of FINAL EXAM  
June 6  
*Rescheduled due to no class on May 9 and 11.