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 9 or 10 (Intercooled or SE), available in Usite, Regenstein and Crerar. Check www.stata.com for helpful information.
COURSE OUTLINE

HSR Basics

Mar 31 Introduction: What is Health Services Research?

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

Review of Cross-Sectional Designs (with an HSR perspective)

April 7 OLS, Linear Probability Models, and Logit/Probit
   - Stock and Watson, pp. 297-322.

April 9 Interpreting Magnitudes
   Application:

April 14 Interaction Terms
   - Stock and Watson, pp. 197-236.

April 16 Clustering and Robust Standard Errors
   - Baum, pp. 133-139

Use of Panel Data in Quasi-Experimental HSR Designs

April 21 Introduction to Hierarchical/Multilevel/Panel Data Models

April 23 Fixed Effects and Random Effects
   - Wooldridge, pp. 426-475.
   - Stock and Watson, pp. 271-295.

April 28 Fixed Effects and Random Effects
   Application:

April 30 Difference-in-Differences Models
   - Stock and Watson, pp. 373-409.
   Applications:
   - Werner RM, Asch DA, Polsky D. Racial profiling: the unintended consequences
Selection Issues in HSR and Several Methods for Addressing Them

May 5  Introduction to Selection Issues

May 7  Propensity Scores

May 12 Propensity Scores
  **Applications:**

May 14 Instrumental Variables
  - 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 19 Instrumental Variables
  **Applications:**

Analysis of Complex Survey Data

May 21 Introduction to Complex Survey Data

May 28 Complex Survey Data
  **Application:**

June 2 Review and Conclusions

June 5 FINAL EXAM