POL 682: ADVANCED STATISTICAL MODELING

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POL 682: Th: 9:00 – 11:50 am
Office Hours: Tuesday 9-12, by appointment

REQUIRED TEXTBOOKS:


COURSE OVERVIEW:
We will examine three broad classes of models this semester: time series models, panel and multilevel models, and duration models. We will be covering both the logic of each approach and the statistical properties of the estimation procedures. We will also deal with statistical software issues – we will focus on using Stata, but the freely available R and WinBugs will also be used. The readings are a mixture of statistical theory and applications. Generally, the readings that are starred are applied research; the non-starred readings focus more on the statistical properties of the particular model.

GRADING
2 Papers: 40% each
Presentations and Participation: 20%

The two papers will be original analyses covering two of the three major topics (for example, 1 multilevel paper, 1 duration model). You may collaborate on 1 of the 2 papers with another graduate student if you wish. The first paper is due no later than November 19th and the second is due December 17th. Be advised I will give no extensions and no incompletes. The papers must be new work: you are not to recycle paper topics from past courses.

Each student is also responsible for the presentation of two applied articles. Starting with the material on September 10th, all starred readings are available as possible presentation topics. The presentation will cover the statistical and substantive issues in the article. It should also raise critical comments on the research and issues for class discussion. The presentations and general class participation count toward the remaining 20% of the grade.

August 27 – Intro / Intro to Time Series


September 3 – no class

September 10 – Nonstationary Time Series


September 17 – Multiple Equation Time Series – VAR and Granger Causality


September 24 – Panel and Pooled Cross-Section Models – Usual Suspects


October 1 – Intro to Multilevel Models – Motivations

R-H and S: Ch 2 / R & B: Chs 1-2, 4


October 8 – Multilevel Models: Estimation

R & B Chs 3, 9


October 15 – Multilevel Models: Estimation

R & B Chs 13-14.


October 22 – Multilevel Models: Applications

R-H and S: Chs 3-5 / R & B: Chs 5-6


October 29 – Multilevel Models: Applications

R-H & S: Chs 6-7 / R & B: Ch 10


November 5 – Multilevel Models: Applications

R-H & S: Ch 9-11 R & B Chs 10-12


November 12 – Logic of Duration Models: Parametric Models


November 19 – Duration Models: Proportional Hazards Models & Discrete Time Models


November 26 – no class

December 3 – Competing Risks, Repeated Events, Heterogeneity & Other Issues
*Journal of Politics* 64:1069-1094.

