PSC 509: Advanced Topics in Methods II

Fall 2010
Lecture: 2:00-4:40, Tuesday, Harkness 112
Course website: http://www.rochester.edu/College/faculty/mperess/atm2010.html

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Harkness 326
OH: MW 3:30-4:30

Overview: This course is designed for graduate students intending to pursue political methodology as a major field. It covers advanced statistical methods that are not yet standard fare in political methodology courses. Course content will vary year to year, and this semester will focus more heavily on nonparametric methods, semiparametric methods, the bootstrap, computational methods, and estimating structural models. As a research workshop, this course also allows students to pursue areas of individual interest in more depth, and therefore course content is determined based on the interests of both the professor and the students. Prerequisites: PSC 404, PSC 405, and PSC 505.

Grading: Grading will be based on a ~4 take-home assignments (65%) and ~2 in class presentations (35%).

Syllabus: I plan on covering the following topics throughout the semester. The list may be contracted or expanded based on how long things are taking. A more accurate schedule will be posted on the course website and updated throughout the semester. Relevant readings and data can be found on the course website.

Nonparametric Estimation

- Nonparametric Density Estimation

- Nonparametric Regression

- Nonparametric Discrete Choice Models

- The Bootstrap

- Matching

Semiparametric Estimation

- M-Estimators

- GMM-Estimators

Advanced Hypothesis Testing

- The Wald Test, The Lagrange Multiplier Test, and The Likelihood Ratio Test

- Higher Order Inference

- The Jackknife and the Bootstrap

- Non-nested Hypothesis Tests

Computational Methods

- Basic Stuff

- Optimization

- Numerical Game Theory

- Computing Equilibria of Dynamic Models