Course Description
This course explores statistical methods as applied to international relations, with reference to similar applications in comparative politics and other fields. We will discuss statistical approaches to analyzing various types of data used by IR scholars. We will read both methodological and applied work, familiarizing students with an array of models and critically analyzing their strengths and weaknesses. It is not intended as a substitute for Quantitative Methods I, II, and III, but as a complementary course. The goal of the course is to expose students to the range of quantitative models applied in international relations scholarship, assess the strengths and weaknesses of particular modeling choices, and to develop the ability to design empirical research projects of their own. It is strongly recommended that students have taken Quantitative Methods I prior to this course.

Assignments
There are two written assignments from which students can pick one. This assignment will comprise 75 percent of your grade.

1) Term Paper: A final research paper (25-40 pages) on international relations or comparative politics with a large quantitative component. The parameters are left intentionally broad so that students can tailor the paper to their own research interests, but the topic should be agreed upon in consultation with the instructor. The research paper will comprise 75 percent of the final grade and is due by email on Thursday May 14, 2015 by 5pm. Late papers will not be accepted. You should seek my feedback throughout the semester as you develop this paper.

2) 4 Tutorials: In lieu of a final paper, students may opt to prepare four tutorials on models from any week of the class. These tutorials should include a conceptual overview of what the method is good for, mathematical details, intuition for the mathematical details, and a worked example (with annotations) in R. The materials should be detailed enough that you could teach a 50-minute lecture/tutorial from the materials. They are due as well-organized zipped directories by email or some other means on Thursday May 14, 2015 by 5pm. Late assignments will not be accepted. You should run the tutorials by me before turning them in to make sure they are of sufficient quality.

As a seminar, student participation is critical to the success of the course. Students are expected to have done all of the readings and have formed critical thoughts on the week’s reading selections and themes. Participation will comprise 25 percent of the final grade.
Readings
All readings should be available through MIT’s electronic resources or through the course’s Stellar website (http://stellar.mit.edu/S/course/17/sp15/17.426/)

Schedule
Week 1 (2/3)  
Course Introduction/interaction terms
Week 2 (2/10)  
Experiments in IR
  2/17 – no class
Week 3 (2/24)  
Non-independent observations 1
Week 4 (3/3)  
Non-independent observations 2
Week 5 (3/10)  
Matching
Week 6 (3/17)  
Instrumental Variables and Natural Experiments
  3/24 – no class
Week 7 (3/31)  
Selection models
Week 8 (4/7)  
Duration/Event History Models
Week 9 (4/14)  
Strategic Models
  4/21 – no class
Week 10 (4/28)  
Text Analysis
Week 11 (5/5)  
Ideal point estimation; Missing Data
Week 12 (5/12)  
Web-scraping; Topics by request

Week 1 (2/3): Course Introduction/Interaction Terms

No required reading.

Further Reading:


Week 2 (2/10): Experiments in IR


**Week 3 (2/24): Non-independent observations 1**


**Further Reading:**


**Week 4 (3/3): Non-independent observations 2**


Further Reading


**Week 5 (3/10): Matching**


Further Reading:


**Week 6 (3/17): Instrumental Variables and Natural Experiments**


Replication of Blanton and Blanton (2007) to be provided by instructor.


**Week 7 (3/31): Selection models**


*Further Reading:*


**Week 8 (4/7): Duration/Event History Models**

Alt, James, Gary King, and Curtis Signorino. 2001. “Aggregation Among Binary, Count, and Duration Models: Estimating the Same Quantities from Different Levels of Data” *Political Analysis* 9(1).


*Further Reading:*


**Week 9 (4/14): Strategic Models**


Further Reading:


**Week 10 (4/28): Text Analysis**


**Week 11 (5/5): Ideal point estimation; Missing Data**


**Week 12 (5/12): Web-scraping; Topics by request**

Jackman, Simon. “Data from the Web into R” The Political Methodologist, 14(2).


Other papers TBA as requested by the class.