Spring 2018

Module 1
"Agent Based Modeling" – Alicia Uribe-McGuire
Email: aburibe@illinois.edu
Wednesdays 1:30 pm – 3:30 pm CST 2:30 pm – 4:30 pm EST.
Description: This course will cover the role of computational game theory in complex systems. We will explore examples of simulation based and agent based models in political science and discuss the importance, evolution, and necessity of such models. Students should have familiarity with game theory and be comfortable with at least one coding language (R, Matlab, Python, etc.). The final project for this course will be a paper utilizing an agent based model or a similar simulation based model.
Dates: March 7, March 28, April 4, April 11, April 18, April 25, May 2.
Draft syllabus link: TBA

Module 2
"Statistical Computing" - Wendy Tam Cho
Email: wendycho@illinois.edu,
Wednesdays 1:30 pm – 3:30 pm CST 2:30 pm – 4:30 pm EST.
Description: This course will focus on aspects of statistical computing. Modern statistical packages provide many tools for analyzing data. One purpose of this course is to experience the power afforded by moving away from a simple point-and-click environment. We will learn and use basic programming skills to explore how statistical analysis is enhanced though simulation techniques like cross-validation, bootstrapping, and Monte Carol experiments. Although there are no formal prerequisites for this course, students should be conversant with some statistical software package and linear models. We will primarily utilize the R statistical package.
Dates: Jan 17, Jan 14, Jan 31, Feb 7, Feb 14, Feb 21, Feb 28.
Draft syllabus
link: https://polisci.osu.edu/sites/polisci.osu.edu/files/Wendy%20Tam%20Cho%20Syllabus%202018.pdf

"Time Series – 1 & 2 modules" - Instructor Janet Box-Steffensmeier, John Freeman, Jon Pevehouse,
Email: steffensmeier.2@osu.edu; freeman@umn; pevehouse@polisci.wisc.edu
Fridays 11 am - 1 pm CST, 12 pm - 2 pm EST.
Description: This course studies statistical techniques used to analyze social processes occurring through time. We begin by discussing social problems that are inherently dynamic in nature and also how time series are measured. We then review the calculus of finite differences. We move next to the study stationary ARMA models, "reduced form" methods (granger causality and vector autogression), unit root tests, near-integration, fractional integration, cointegration, and error correction models. Time series regression is briefly discussed. We address not only how to construct these models but also how to use time series models in social science analyses.
Dates: Jan 19, 25, Feb 2, 9, 16, 23, March 2, 9, No class March 16, March 23, No class March 30, No class April 6, April 13, 20, 27.
Draft syllabus
link: https://polisci.osu.edu/sites/polisci.osu.edu/files/Time_Series_Syllabus_2016_final2.pdf