

PoliSci U

Consortium for Graduate Political Methodology Training between Ohio State University, University of Illinois, University of Indiana, University of Minnesota and University of Wisconsin

Spring 2020

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: January 22, 29, February 5, 12, 19, 26, March 4.

Draft syllabus link: [Agent-Based Modeling](#)

"Time Series – 1 & 2 modules" - Instructors John Freeman & Jon Pevehouse

Email: 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 autoregression), 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: January 24, 31, February 7, 14, 21, 28, March 6, 27, April 3, 10, 17, 24.

Draft syllabus link: [Time Series](#)