P.40102. Political Economy I: Formal Models of Politics. 100 Units.
This course provides an overview of formal models of politics, including models of electoral competition, coalition formation, political agency, and nondemocracy. Students must have completed the three-quarter sequence in Formal Political Theory or analogous coursework in game theory and mathematical methods. Enrollment of master's students is at the discretion of the instructor.
Instructor(s): Gehlbach, S Terms Offered: Winter
Equivalent Course(s): PLSC 41105, PPHA 40102

P.40103. Political Economy II. 100 Units.
TBD
Prerequisite(s): PECO 40102
Equivalent Course(s): PPHA 40103

P.40104. Political Economy III. 100 Units.
TBD
Prerequisite(s): PECO 40102, PECO 40103
Equivalent Course(s): PPHA 40104

P.40110. Formal Political Theory I. 100 Units.
This is the first course in a three-quarter sequence in Formal Political Theory that introduces foundational concepts in decision theory and noncooperative game theory, the key mathematical tools needed for applied theory, and applications from political economy. This quarter focuses primarily on static games of complete and incomplete information and related solution concepts, including (Bayesian) Nash equilibrium and mixed-strategy Nash equilibrium. Students must have recently completed coursework in differential and integral calculus, optimization theory, and methods of mathematical proof. Enrollment of master's students is at the discretion of the instructor.
Terms Offered: Autumn
Equivalent Course(s): PLSC 40110, PPHA 40110

P.40111. Formal Political Theory II. 100 Units.
This course follows on Formal Political Theory I, which it takes as a prerequisite. This quarter focuses on dynamic games of complete information and related solution concepts, including subgame-perfect Nash equilibrium and Markov perfect equilibrium. Applications include folk theorems for repeated games, bargaining models, and moral hazard.
Terms Offered: Winter
Prerequisite(s): PECO 40110
Equivalent Course(s): PLSC 40111, PPHA 40111

P.40112. Formal Political Theory III. 100 Units.
This course follows on Formal Political Theory I and II, which it takes as prerequisite. This quarter focuses primarily on dynamic games of incomplete information and related solution concepts, including weak perfect Bayesian equilibrium and sequential equilibrium. Applications include models of costly signaling and cheap talk.
Terms Offered: Spring
Prerequisite(s): PECO 40110, PECO 40111
Equivalent Course(s): PLSC 40112, PPHA 40112

P.40815. New Directions in Formal Theory. 100 Units.
In this graduate seminar we will survey recent journal articles that develop formal (mathematical) theories of politics. The range of topics and tools we touch on will be broad. Topics include models of institutions, groups, and behavior, and will span American politics, comparative politics, and international relations. Tools include game theory, network analysis, simulation, axiomatic choice theory, and optimization theory. Our focus will be on what these models are theoretically doing: What they do and do not capture, what makes one mathematical approach more compelling than another, and what we can ultimately learn from a highly stylized (and necessarily incomplete) mathematical representation of politics. The goal of the course is for each participant, including the professor, to emerge with a new research project.
Instructor(s): Z. Luo Terms Offered: Spring
Prerequisite(s): PLSC 30901, PLSC 31000 or consent of instructor.
Equivalent Course(s): PBPL 40815, PPHA 40815, PLSC 40815

P.42000. Applied Econometrics I. 100 Units.
This course is the first in a three-part sequence designed to cover applied econometrics and regression methods at a fairly advanced level. This course provides a theoretical analysis of linear regression models for applied researchers. It considers analytical issues caused by violations of the Gauss-Markov assumptions, including linearity (functional form), heteroscedasticity, and panel data. Alternative estimators are examined to deal with each. Familiarity with matrix algebra is necessary.
Instructor(s): Durlauf, S Terms Offered: Autumn
Prerequisite(s): This class is open only to PPHA PHD (Public Policy Studies) or PPHA-MAR (PubPol MA/CertRsch) Students Only or consent of instructor.
Note(s): Harris PhD & MA CRM students or instructor permission required.
Equivalent Course(s): PPHA 42000

**PECO 42100. Applied Econometrics II. 100 Units.**
Public Policy 42100, the second in a three-part sequence, is a basic course in applied econometrics designed to provide students with the tools necessary to evaluate and conduct empirical research. It will focus on the analysis of theoretical econometric problems and the hands-on use of economic data. Topics will include non-linear estimation, multi-variate and simultaneous systems of equations, and qualitative and limited dependent variables. Some familiarity with linear algebra is strongly recommended. Required of all first-year Ph.D. students.
Instructor(s): Grogger, J Terms Offered: Winter
Prerequisite(s): PPHA 42100 or instructor permission required.
Equivalent Course(s): PPHA 42100

**PECO 42200. Applied Econometrics III. 100 Units.**
Public Policy 42200, the final course in a three-part sequence, is a basic course in applied econometrics designed to provide students with the tools necessary to evaluate and conduct empirical research. Required of first-year PhD students.
Instructor(s): Ito, K Terms Offered: Spring
Prerequisite(s): PPHA 42100
Equivalent Course(s): PPHA 42200