This course introduces students to basic techniques for the exploration of political and economic geography while covering a range of substantive themes. Students will learn to produce and analyze maps and learn the basics of spatial data analysis, and apply these skills to a range of questions at the intersection of political and economic geography.

This course begins with a brisk overview of attempts to answer some of the basic questions of economic geography and urban economics. What explains the spatial location of workers, firms, and economic activity? What explains the rise (and fall) of cities, suburbs, and residential segregation around the world? Can we draw any general conclusions about the spatial location of income groups? Do neighborhoods and social networks have an impact on behavior and social outcomes?

We start with these questions in part because they have a variety of potential political consequences for political science. We explore geographic underpinnings of sectionalism, regionalism, and political polarization, examine the geography of political preferences and voting behavior, and explore the ways in which the geographic distribution of preferences interacts with electoral institutions, focusing in particular on implications for redistribution and the welfare state. We also address a variety of questions about borders, conflict, and historical legacies.

Throughout the course, we focus on geography and challenges of causal inference. This is a specialized course for graduate students whose research interests touch upon political geography. Students will become familiar with ArcGIS and several tools in R. Classroom time will be split between discussions of the substantive readings and building tools of spatial analysis, and students will work individually and in groups with the software and tutorials. While we cover most of the basics that will be useful to political scientists, students interested in a full-fledged spatial statistics course will want to consider Statistics 253 and 352.

Students will work on labs (usually in groups) each week and participate in class discussions. Students will write a short reading response and write a final paper
(around 20 pages). Progress on a serious paper using spatial tools is a central component of the course. Students should decide upon a topic by the middle of the quarter, and reports on the final paper will be given throughout the second half of the quarter.

During the first week, each student will choose a (substantive) session for which he or she will write a 3-5 page reading response essay. Two or three pages will address broad issues raised by the papers, and 1-2 pages will go into detail on a single paper. The reading response essay will be circulated to classmates by 9 PM on Sunday night. All other students will come to class on Tuesday prepared to go into greater depth on the paper(s) selected by the student(s), and class discussion will be structured in part on the issues raised in the response essays. Students should be prepared to take an especially active role in leading discussions during the week they have selected.

The final grade will be calculated as follows:

Reading response: 20%
Participation grade: 20%
Presentation: 10%
Final paper: 50%

Students with Documented Disabilities: Students who may need an academic accommodation based on the impact of a disability must initiate the request with the Office of Accessible Education (OAE). Professional staff will evaluate the request with required documentation, recommend reasonable accommodations, and prepare an Accommodation Letter for faculty dated in the current quarter in which the request is made. Students should contact the OAE as soon as possible since timely notice is needed to coordinate accommodations. The OAE is located at 563 Salvatierra Walk (phone: 723-1066, URL: http://studentaffairs.stanford.edu/oae).

**Week 1**

**January 9:** Course Introduction


In-class lab: Introduction to GIS (ArcMap)
January 11: Representing the Earth’s Surface


In-class lab: Projections (ArcMap)

**Week 2**

January 16: Geography, Trade and Agglomeration


*Further recommended background reading*


January 18: Introduction to spatial data in R

In-class lab: Learn how both vector and raster data are represented in R, how to import and export data from other programs, and associate tabular data with spatial objects.

Week 3

January 23: Cities and Urban Form

- Nall, *The Road to Inequality*, Chs 1-3.

Recommended


January 25: Basic Spatial Operations in R
In-class lab: Learn to manipulate projections and coordinate systems in R, merge outside data sources with spatial objects based on variable identifiers, and to execute different forms of spatial merges.

**Week 4**

**January 30: Segregation, Sorting, and Public Goods**


*Recommended*


**February 1: Making maps**

In-class lab: Making maps in R. How to visualize your spatial data.

In-class lab: Making maps in ArcGIS

- Claudia Engel. 2015. *Spatial Approaches to Social Science*, chapter 6
**Week 5**

**February 6: Neighborhood and Contextual Effects**


Further recommended background reading:


**February 8: Address geocoding**
In-class lab: Using R to access data from web servers using various API interfaces and formats. Also learn to convert large numbers of addresses into GPS coordinates.


**Week 6**

**February 13: Geography and Social Networks**


Optional Lab: iGraph library in R.

**February 15: Raster data, land cover, and remote sensing**

In-class lab: An in-depth look at working with raster data, raster-vector data joins, and working with multi-band data.

Claudia Engel. 2015. *Spatial Approaches to Social Science*, chapter 8-9
**Week 7**

**February 20: Spatial dependence and spatial regressions**


**February 22: In-class progress report on research**

Come to class with a map and/or other geo-spatial analysis related to your research interests. Include a short write-up of what you learned (2-4 pages). Be prepared to spend 10 minutes presenting your work.

**Week 8**

**February 27: Geography, political preferences, and representation**


**March 1: Borders, geography, and causal inference**


**Recommended**

Take-home Lab: Digital elevation models, least cost path analysis

**Week 9**

**March 6: Geography and Historical Legacies**


**Recommended:**


March 8: Digitizing Historical Maps

In-class lab using ArcGIS.

Week 10

March 13: Presentations

March 15: Presentations