ANTHRO 130D/230D, POLISCI 241S, URBANST 124
Spatial Approaches to Social Science
Winter 2018

Tue/Thurs 9-10:30am
Lathrop 190
Instructors: Jonathan Rodden and Claudia Engel
Teaching Assistant: Erica Knox
Office Hours:
   Rodden – Tuesdays, 4:30 PM - 6 PM, Encina Hall, Room 444.
   Engel – by appointment (cengel@stanford.edu)
   Knox – by appointment (eknox@stanford.edu)

This is an introductory level course to basic concepts of spatial data and spatial analysis techniques with selected examples as they are being used in the Social Sciences. Students will acquire skills in using relevant GIS software and gain experience in collecting, managing and analyzing spatial data. They will learn to think critically about spatial data and gain the ability to apply a spatial approach to topics of social science research.

The course is organized around two major substantive themes. We will first look at questions about the spatial distribution of population characteristics and their spatial relationships. What explains the location of workers, firms, and economic activity? What explains the rise and fall of cities, suburbs, and residential segregation? What conclusions can we draw about the spatial location of income groups? We will also look at questions of boundaries and discontinuities. What are the geographical underpinnings of regionalism and political polarization? What is the role of political, natural, or imagined boundaries (like neighborhoods) for spatial processes? How do we understand a spatial dynamics that crosses boundaries, like migration/immigration? The second theme will have us take a historical analytical approach. We will look at the socio-cultural history of landscapes and cities and how those have been formed over time. How do we read historical data? What is the relationship of spatial historical patterns to the contemporary world? Throughout the course, we will play close attention to problems of causal inference in the social sciences.

The course is geared towards students with no prior knowledge of GIS. It will require extensive use of computers and software. Since much of the benefit from this course will come from working through the evidence, students are expected to spend a significant amount of time engaging with data and case studies.

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 being 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; web site http://studentaffairs.stanford.edu/oae.

Software and Data

ArcGIS 10 student licenses for use on personal computers are available through Branner Library (software is Windows only). ArcGIS is also available on all cluster machines and in the classroom. All project and class related data will be stored on a remote external drive and can be accessed from anywhere. We will provide instructions on how to do this.

NOTE: An introductory workshop on ArcGIS will be offered for students of this class during the second week of the course. While this is not required part of the class, it will provide you with the necessary basic skills to use this complex software. If you are not familiar with ArcGIS it is highly recommended you take this workshop in order to successfully be able to complete the coursework.
Readings

Articles for each week are on Coursework.

Chapters from:
Engel, C: Spatial Approaches to Social Science - An Introduction to Basic Concepts (Draft)

Selected chapters from:

Book on reserve in the library.

Assessment

The course consists of substantive readings, in-class labs, a spatial analysis assignment and a term project. The final grade will be calculated as follows:

Contextual map and 1-page term project proposal 15% (due 2/8)
Spatial analysis take-home assignment 25% (due 2/20)
Term project & Final paper 40% (presentation 3/15, paper due 3/22)
Participation in labs and discussion of readings 20%

Week 1

Tue, January 9:

Course Overview

How to ask spatial questions
What is Tobler’s law, and why is it so often true?
GIS and its role in Social Science research

Thurs, January 11

Intro to GIS: Raster and vector type, basic concepts and conventions in GIS tools

Representing and measuring geographic space and spatial events, concepts, limitations, history
[Engel: Chapter 1 - 3]

Week 2

ArGIS workshops are TBD. Participation strongly encouraged.
Branner Library staff will visit the class this week and provide introduction to campus GIS Resources.

Tue, January 16

Agglomeration Effects and the Rise of Cities

[Henri Pirenne. 1925. “City Origins” and “Cities and European Civilization.” In The City Reader, pp. 38-45.]
Thurs, January 18

The history of global urbanization: geographic projections

[Engel: Chapter 4]

Week 3

Tue, January 23

Urban form and the spatial structure of cities


Thurs, January 25

Mapping neighborhoods: address geocoding and point locations

[Engel: Chapter 5]

Week 4

Tue, January 30

Segregation and sorting

[Clayton Nall and Jonathan Mummolo, “Why Partisans Don’t Sort: How Neighborhood Quality Concerns Limit Americans’ Pursuit of Like-Minded Neighbors.”]

Recommended:

Thurs, February 1

Mapping populations: aggregation and spatial hierarchies, attribute joins, historical census
Week 5

Tue, February 6

*Neighborhood and Contextual Effects*


Thurs, February 8

*The significance of spatial clusters: Point Patterns and Areal Patterns*

[O'Sullivan & Unwin Chapters 4.3-4.6 & 5.1-5.2; Chapters 7&8]

[**CONTEXTUAL MAP AND PROJECT PROPOSAL DUE ON FEBRUARY 8**]

Week 6

Tue, February 13

*Geography, Political Preferences, and Representation*


Thurs, February 15

*Digital elevation models and terrain analysis*

[Engel: Chapter 10]

Week 7

Tue, February 20

*[MID-TERM WRITING ASSIGNMENT DUE FEBRUARY 20]*

Speaker: Google Street View and Deep Learning.

Thurs, February 22

*Urban sprawl: Raster analysis, land cover, and remote sensing*

[Engel: Chapter 11]

Week 8
Tue, February 27

*Project peer reviews*

Thurs, March 1

*Project peer reviews*

**Week 9**

**Tue, March 6**

*Geography and Historical Legacies*


Speakers Scott Bailey and Javier de la Rosa: Histonets

**Thurs, March 8**

*Mapping networks: georeferencing and digitizing*

[Engel: Chapter 7]

**Week 10**

**Tue, March 13**

*In-class project work*

**Thurs, March 15**

*Digital poster presentations*

[FINAL PAPER DUE 3/22]

*Digital Poster Presentations*