



Instructor:

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“The gods did not reveal, from the beginning, all things to us; but in the course of time, through seeking we may learn, and know things better. But as for certain truth, no man has known it, nor will he know it; neither of the gods, nor yet of all the things of which I speak. And even if by chance he were to utter the perfect truth, he would himself not know it; for all is but a woven web of guesses.”

Xenophanes, 6th Century B.C.

“Even to have expressed a false thought boldly and clearly is already to have gained a great deal.”

Ludwig Wittgenstein, 1948

COURSE DESCRIPTION

This class will expose sociologists, anthropologists, demographers, environmental scholars, criminologist, economists and public health scholars to the vast array of spatial data that are available, encourage them to think critically and creatively about how different forms of spatial data can be integrated in the research, and introduce them to the spatial analytical methods that are increasingly encountered in statistical inquiry. This course will examine the characteristics of spatial data and focus on methods appropriate for exploring and modeling such data. The emphasis in this course will be on lattice and spatial point data. This is not a GIS class, but rather it is a class on how to apply statistics to spatial data. We will discuss spatial demography concepts in academic, government, and applied settings; data collection strategies that facilitate fieldwork; and the new directions and challenges associated with spatial demography techniques. The course will use work from various disciplines. In this course we will rely on Saint Louis as a social laboratory to illustrate the theoretical and methodological concepts.

PREREQUISITES

Students must have successfully passed one introduction to GIS class to enroll in this class. (e.g., SOC 4650 or GIS 5010) or have GIS experience from work or other classes.

OBJECTIVES

The course is designed to give you a better understanding of the potential of spatial statistics in social research and to become familiar with methods of using spatial statistics at multiple stages of a research process; identifying, integrating, manipulating and analyzing data; and identifying new directions and challenges.

The two primary goals are:

- (1) help students develop and think about ways in which a spatial perspective might contribute to your own research.
- (2) explore ways in which students can operationalize research through the use of spatial analysis and spatial statistics.

METHODS OF EVALUATION

ASSIGNMENTS

Homework #1 – Spatial Introduction to a City	30%
Homework #2 – Class Presentation on Final Project	20%
Homework #3 – Peer Review of Class Presentations	10%
Homework #4 – Research Paper on Final Project	40%
Total	100%

ASSIGNMENT DUE DATES

Homework #1 – Spatial Introduction to a City	March 16
Homework #2 – Class Presentation on Final Project	April 23 and April 30
Homework #3 – Peer Review of Class Presentation	April 23 and April 30
Homework #4 – Research Paper on Final Project	May 08

GRADING CRITERIA

A	100-94
A-	93-91
B+	90-88
B	87-85
B-	84-82
C+	81-79
C	78-76
C-	75-73
D	72-62
F	62 and below

GRADING POLICY

Each assignment will be graded on scale of 0-100. There is no final exam, but there is a final in-class presentation and final research paper.

TEXTS

Recommended

Anselin, Luc and Rey, Sergio. 2014. Modern Spatial Econometrics in Practice: A Guide to GeoDA, GeoDaSpace and PySAL. GeoDA Press LLC.

Bivand, Roger S. Pebesma, Edzer, and Gómex-Rubio. 2013. Applied Spatial Data with R. Springer.

Brunsdon, Chris and Comber, Lex. 2015. An Introduction to R for Spatial Analysis and Mapping. SAGE Publications.

Haining, Robert. 2009. Spatial Data Analysis. Cambridge University.

Fotheringham, A. Stewart, Brunsdon, Chris and Charlton, Martin. 2000 Quantitative Geography: Perspectives on Spatial Data Analysis. Sage Publishing.

COURSE OUTLINE

Week 1 – January 16

Overview and Goals of the Course and Seminar - Why Spatial Demography?

Week 2 – January 23

Spatial Demography Concepts and Databases – Part 1

Week 3 – January 30

Spatial Demography Concepts and Databases – Part 2

Week 4 – February 6

Exploratory Spatial Data Analysis

Week 5 – February 13

Spatial Autocorrelation - Global

Week 6 – February 20

No Class

Week 7 – February 27

Spatial Autocorrelation - Local

Week 8 – March 6

Spatial Interpolations and Other Spatial Statistics

Week 9 - March 13

No Class Spring Break

Week 10 – March 20

No Class

Week 11 – March 27

Working with Points – Point Pattern

Week 12 – April 2

Spatial Autoregressive Models Part 1

Week 13 – April 9

Easter Break – No Class

Week 14 – April 16

Spatial Autoregressive Models Part 2

Week 15 - April 23

Presentations on Paper

Week 16 – April 30

Presentations on Paper

OTHER COURSE POLICIES

Title IX

Saint Louis University and its faculty are committed to supporting our students and seeking an environment that is free of bias, discrimination, and harassment. If you have encountered any form of sexual misconduct (e.g. sexual assault, sexual harassment, stalking, domestic or dating violence), we encourage you to report this to the University. If you speak with a faculty member about an incident of misconduct, that faculty member must notify SLU's Title IX coordinator, Anna R. Kratky (DuBourg Hall, room 36; akratky@slu.edu; 314-977-3886) and share the basic facts of your experience with her. The Title IX coordinator will then be available to assist you in understanding all of your options and in connecting you with all possible resources on and off campus. If you wish to speak with a confidential source, you may contact the counselors at the University Counseling Center at 314-977-TALK. To view SLU's sexual misconduct policy and for resources, please visit the following web addresses: www.slu.edu/here4you and <https://www.slu.edu/general-counsel>.

Disability Services

Students with a documented disability who wish to request academic accommodations must contact Disability Services to discuss accommodation requests and eligibility requirements. Once successfully registered, the student also must notify the course instructor that they wish to access accommodations in the course. Please contact Disability Services, located within the Student Success Center, at Disability_services@slu.edu or 314.977.3484 to schedule an appointment. Confidentiality will be observed in all inquiries. Once approved, information about the student's eligibility for academic accommodations will be shared with course instructors via email from Disability Services and viewed within Banner via the instructor's course roster.

Note: Students who do not have a documented disability but who think they may have one are encouraged to contact Disability Services.

Academic Integrity

Academic integrity is honest, truthful and responsible conduct in all academic endeavors. The mission of Saint Louis University is "the pursuit of truth for the greater glory of God and for the service of humanity." Accordingly, all acts of falsehood demean and compromise the corporate endeavors of teaching, research, health care, and community service via which SLU embodies its mission. The University strives to prepare students for lives of personal and professional integrity, and therefore regards all breaches of academic integrity as matters of serious concern.

The governing University-level Academic Integrity Policy was adopted in Spring 2015, and can be accessed on the Provost's Office website at: https://www.slu.edu/provost/policies/academic-and-course/policy_academic-integrity_6-26-2015.pdf.

Additionally, each SLU College, School, and Center has adopted its own academic integrity policies, available on their respective websites. All SLU students are expected to know and abide by these policies, which detail definitions of violations, processes for reporting violations, sanctions, and appeals. Please direct questions about any facet of academic integrity to your faculty, the chair of the department of your academic program, or the Dean/Director of the College, School or Center in which your program is housed.

Student Success Center

In recognition that people learn in a variety of ways and that learning is influenced by multiple factors (e.g., prior experience, study skills, learning disability), resources to support student success are available on campus. The Student Success Center assists students with academic-related services and is located in the Busch Student Center (Suite, 331). Students can visit <https://www.slu.edu/life-at-slu/student-success-center/> to learn more about tutoring services, university writing services, disability services, and academic coaching.

University Writing Services

Students are encouraged to take advantage of University Writing Services in the Student Success Center; getting feedback benefits writers at all skill levels. Trained writing consultants can help with writing projects, multimedia projects, and oral presentations. University Writing Services offers one-on-one consultations that address everything from brainstorming and developing ideas to crafting strong sentences and documenting sources. For more information, visit <https://www.slu.edu/life-at-slu/student-success-center/> or call the Student Success Center at 314-977-3484.

Basic Needs Security

Students in personal or academic distress and/or who may be specifically experiencing challenges such as securing food or difficulty navigating campus resources, and who believe this may affect their performance in the course, are encouraged to contact the Dean of Students Office (deanofstudents@slu.edu or 314-977-9378) for support. Furthermore, please notify the instructor if you are comfortable in doing so, as this will enable them to assist you with finding the resources you may need.