URPL – GP 2618
Geographic Information Systems and Analysis
Fall 2022

Instructor Information

- Stephanie Rosoff
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- Office Hours: By appointment

Course Information

Meeting Times

Saturdays, 9:30 am - 1:30 pm (class), 1:40 pm - 3:10 pm (lab)

- September 24, 2022
- October 1, 2022
- October 15, 2022
- October 22, 2022
- November 5, 2022
- November 12, 2022

In-Person Instruction

All classes and labs meet in Bobst, Room LL 114

Course Prerequisites

Students are expected to have basic experience working with data.

Course Description

Understanding geographic relationships between people, land use, and resources is fundamental to planning. Urban planners routinely use spatial analysis to inform decisionmaking. This course will introduce students to Geographic Information Systems (GIS), a tool to analyze and visualize spatial data. The course will emphasize the core functions of GIS:

map making, data management, and spatial analysis. Students will learn cartographic best practices, how to find and create spatial data, spatial analysis methodology, and how to approach problem solving from a geographic perspective. Throughout the course, students will build a portfolio of professional quality maps and data visualizations.

Course and Learning Objectives

Students will gain the following skills and abilities:

1. An understanding of what GIS is and how GIS is used in planning and other fields;
2. Fluency in the ESRI ArcGIS interface;
3. An understanding of where to find existing GIS data and how to create custom GIS data;
4. Ability to make professional quality maps;
5. Expertise in working with and visualizing geographic data; and
6. Ability to solve a "spatial question" using GIS.

Learning Assessment Table

URPL-GP, MSPP-GP, PHD-GP, UPADM-GP

Graded Assignment	Course Objective Covered
Map Portfolio	1-5
Spatial Analysis Memo	1-6
Research Memo	1-6

Course Structure

Course content includes a mix of lectures and self-directed lab exercises. Materials for the lab exercises are provided in advance of each class.

Academic Integrity

Academic integrity is a vital component of Wagner and NYU. All students enrolled in this class are required to read and abide by [Wagner's Academic Code](). All Wagner students have already read and signed the [Wagner Academic Oath](). Plagiarism of any form will not be tolerated and students in this class are expected to report violations to me. If any student in this class is

unsure about what is expected of you and how to abide by the academic code, you should consult with me.

Henry and Lucy Moses Center for Students with Disabilities at NYU

Academic accommodations are available for students with disabilities. Please visit the [Moses Center for Students with Disabilities (CSD) website](#) and click on the Reasonable Accommodations and How to Register tab or call or email CSD at (212-998-4980 or [mosescsd@nyu.edu](#)) for information. Students who are requesting academic accommodations are strongly advised to reach out to the Moses Center as early as possible in the semester for assistance.

NYU's Calendar Policy on Religious Holidays

[NYU's Calendar Policy on Religious Holidays](#) states that members of any religious group may, without penalty, absent themselves from classes when required in compliance with their religious obligations. Please notify me in advance of religious holidays that might coincide with assignments to schedule mutually acceptable alternatives.

Student Resources

Wagner tutors are available to help students with their writing skills. Please see details on the [Wagner Writing Center page](#).

For additional GIS support, see [NYU Data Services](#).

Graded Assignments

Graded assignments are an opportunity to build a portfolio of professional quality GIS work. Further assignments instructions and grading rubrics will be posted for students. Grades will be posted to NYU Classes.

Map Portfolio

The Map Portfolio (1/3 of course grade) is a series of four maps that tell a story about a neighborhood or place, or highlight a particular topic, and use cartographic best practices.

Spatial Analysis Memo

The Spatial Analysis Memo (1/3 of course grade) addresses a spatial research question. The analysis must utilize at least two geo-processing tools.

Research Memo and Presentation

The Research Memo (1/3 of course grade) explores a geographically focused research question or topic. Students will present a summary of their Research Memo on the last class.

Course Materials

ESRI ArcGIS

Students wishing to install GIS software on their personal computers can receive a free educational license of ESRI ArcGIS from NYU Data Services. Fill out this [NYU Data Services form](http://guides.nyu.edu/appointment) to request a free copy: http://guides.nyu.edu/appointment. Note: ESRI software only runs on Windows operating systems. Students may also access ESRI ArcGIS via NYU's Virtual Computer Lab.

Note: Students may use QGIS to complete graded assignments as long as project requirements (e.g., use of geospatial tools) are met.

Optional Texts

● *Getting to Know ArcGIS for Desktop*, 3rd edition or later, Michael Law and Amy Collins ● *Mapping It Out*, Mark Monmonier

Lectures and Lab Documents

All resources will be delivered through Google Drive.

Semester Overview
Subject to change

- **Class 1, September 24**
    - Intro to GIS
    - Elements of map making
    - Creating thematic maps

- **Class 2, October 1**
  - Symbolizing and generalizing geographic data
- **Class 3, October 15**
  - <mark>**MAP PORTFOLIO DUE**</mark>
  - Linking and querying data by location
- **Class 4, October 22**
  - Measuring distance
  - Precision and accuracy
- **Class 5, November 5**
  - <mark>**SPATIAL ANALYSIS MEMO DUE**</mark>
  - Digitizing
  - Geocoding
- **Class 6, November 12**
  - <mark>**RESEARCH MEMO PRESENTATIONS DUE**</mark>
  - Raster analysis
  - Data Viz
- <mark>**November 19 - RESEARCH MEMO DUE (no class)**</mark>

Letter Grades

Student grades will be assigned according to the following criteria:

- (A, 94-100) Excellent: Exceptional work for a graduate student. Work at this level is unusually thorough, well-reasoned, creative, methodologically sophisticated, and well written. Work is of exceptional, professional quality.

- (A-, 90-93,) Very good: Very strong work for a graduate student. Work at this level shows signs of creativity, is thorough and well-reasoned, indicates strong understanding of appropriate methodological or analytical approaches, and meets professional standards.

- (B+, 87-89) Good: Sound work for a graduate student; well-reasoned and thorough, methodologically sound. This is the graduate student grade that indicates the student has fully accomplished the basic objectives of the course.

- (B, 84-86) Adequate: Competent work for a graduate student even though some weaknesses are evident. Demonstrates competency in the key course objectives but shows some indication that understanding of some important issues is less than complete. Methodological or analytical approaches used are adequate but student has not been thorough or has shown other weaknesses or limitations.

- (B-, 80-83) Borderline: Weak work for a graduate student; meets the minimal expectations for a graduate student in the course. Understanding of salient issues is

somewhat incomplete. Methodological or analytical work performed in the course is minimally adequate. Overall performance, if consistent in graduate courses, would not suffice to sustain graduate status in "good standing."

- (C/-/+, 70-79) Deficient: Inadequate work for a graduate student; does not meet the minimal expectations for a graduate student in the course. Work is inadequately developed or flawed by numerous errors and misunderstanding of important issues. Methodological or analytical work performed is weak and fails to demonstrate knowledge or technical competence expected of graduate students.

- (F, <70) Fail: Work fails to meet even minimal expectations for course credit for a graduate student. Performance has been consistently weak in methodology and understanding, with serious limits in many areas. Weaknesses or limits are pervasive.