

Introduction to GIS for Urban and Environmental Analysis (UEP 232)

Instructor: Barbara Parmenter

Tues/Thurs 12-1:15 (GIS Center, Tisch Library Map Room)

For the full course schedule, assignments, and readings, please see the course web site: <https://wikis.uit.tufts.edu/confluence/x/aUs>

Course overview

This course will focus on introducing students to the use of geographic information systems in the urban/suburban/metropolitan environment. Students will learn to work with urban spatial databases (including data sets pertaining to land use/land cover, parcel records, census demographics, environmental issues, water, transportation, local government, community development, and businesses). Technical topics to be covered include finding and understanding sources of information for metropolitan spatial databases, integration of data from a variety of sources, database structure and design issues, spatial analysis capabilities, data quality and data documentation.

While learning GIS skills, students will complete a mapping/analysis project of their choosing and present the results in a poster and short paper. The course will use ArcGIS 10 software - all students will receive a one-year license of ArcGIS 10 software for their home use (the software works on a PC but can run on a Mac if you have a PC emulator or BootCamp).

Textbooks

- **Required:** Andy Mitchell, *The ESRI Guide to GIS Analysis, vol 1: Geographic Patterns and Relationships*, ESRI Press, Redlands, CA

Course objectives

By the end of the course, participants will be able to:

- Identify, locate, and acquire spatial data pertinent to projects in their field of interest, as well as pinpoint significant gaps in or problems with existing information.
- Evaluate the appropriateness of the existing data sources for use in a project.
- Understand the data creation process and create simple data sets and/or add to existing data
- Create spatial data from tabular information that includes a spatial reference

- Perform basic spatial analyses (attribute and spatial queries, buffering, overlays) as well as linking these methods together in a more complex analytical model.
- Create high-quality maps and associated graphics and text that clearly communicate spatial information and analyses

UEP Competencies - [click here](#) to see the UEP competencies met by this course.

Course Requirements

Students will be expected to attend every class and to complete all graded lab and written assignments - these will require additional computer/lab time outside of class. Each student will also complete a mapping/analysis project of his/her choice, assemble and document a spatial database for the project, and create a poster and accompanying short paper explaining the project and showing results.

Grading

Assignment points are as listed for each assignment (the total possible points for assignments add up to 70)

Final project poster and short paper - 30 points