Introduction to GIS for Urban and Environmental Analysis: Course Overview, Objectives, and Grading

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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. Technologies covered include GIS, online data retrieval, and the use of GIS data in other applications such as Google Earth. 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 9.3 software - all students will receive a one-year license of ArcView 9.3 software for their home use.

The course web site, including the schedule of readings and assignments can be accessed on the web at: https://wikis.uit.tufts.edu/confluence/x/aUs

Textbooks

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

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 65)

Final project poster and short paper - 35 points

Grading will be based on a 100 point scale as follows:

- 99-100 - A+
- 93-98 - A
- 90-92 - A-
- 88-89 - B+
- 83-87 - B
- 80-82 - B-
- 78-79 - C+
- 73-77 - C
- 70-72 - C-
- etc.