Course description: Issues in the manipulation and display of geographic data. Interpreting and using geographic information in social and scientific contexts. Ethical issues associated with geographic information science.

This course is required in the Master's in Geographic Information Science degree and is open to other graduate students as well.

Why an issues course? All the exciting facilities and software available for processing spatial data are creating opportunities in many different fields. As future GISci professionals in this area, however, we need to know more than the software. What is behind it? How, for example, is it that a GIS program can calculate area or find a centroid? What sorts of errors crop up when using GIS software and how do they propagate? What are the implications of using GIS? Does it always have a positive effect on society (the car is a wonderful piece of technology; did it create a better society)? As future professionals in the field of GISci, what standards of behavior will or should be expected of us? And what about all those new terms that crop up in GISci? What is "interoperability", "wireless GIS", "GSDI", etc.? How do we find information, not just "on the net" but the vetted sorts of materials generally found in libraries?

This class will be an opportunity to learn about some of these questions underlying GIS/GISci.

How the class will work. There will be various readings and assignments in this class. The class session itself will generally be a discussion of the materials rather than a lecture. In some cases one or more "resource persons" will be present in addition to the instructor. Students will be expected to come to class with two sets of notes on the readings or two copies of the completed exercise. In either case, you will turn in the instructor's copy at the beginning of the session and use your own during discussion. One student will have been pre-assigned as discussion leader. That person will take the class through the discussion (45-50 minutes unless specified otherwise) and call on other students in such a way that everyone takes part. The resource person(s) and instructor will be observers of but not participants in student discussion. At the end of the discussion, the resource person(s) and instructor join in and can react, add information, answer questions, ask further questions, or whatever is appropriate.

Among the reasons for this structure is that graduate students generally learn a lot from readings (and from each other) and having a lecture on the same materials may be a questionable use of time. By listening to your discussion, a resource person can fill in blanks and interact with you rather than repeat what you already know. Also, you will be participating in all sorts of group efforts as professionals and this will be a structured way of gaining skills both as participants with and leaders of peers.

Grades. The grades in this class will be a combination of performance on materials handed in, a paper due at the end of term, and participation in class. Although I reserve the right to give a midterm and/or final exam in this class (and count them toward the grade), neither would be with less than 2 weeks' notice, and if all goes as planned, our schedule is full without them.
Tentative schedule

Note: These are subject to change to accommodate schedules and availability of resource people and to represent topics more accurately.

Aug 29  Introduction to class
Aug 31  GISci

Sept 5  (class schedule conflict getting resolved)
Sept 7  Discuss search exercise

Sept 10 GIS applications – community/economic
Sept 14  (Day of Remembrance, no class)

Sept 17 GIS applications – nat resources & phys
Sept 21 GIS applications – health

Sept 24 Ethics in GISci
Sept 28 Data models and data structures

Oct 1  Data models and data structures
Oct 5  No class

Oct 8  NSDI/GSDI
Oct 12 Spatialization

Oct 15 Scale
Oct 19 Projections

Oct 22 Projections
Oct 26 Grid systems

Oct 29 Algorithms and digital thinking
Nov  2 Databases

Nov  5 Catchup
Nov  9 Metadata

Nov 12 Interoperability, web GIS, wireless GIS
Nov 16 GIS programming

Nov 19 Journals in the field
Nov 23  (Thanksgiving break; no class)

Nov 26 Spatial data transfer standards
Nov 30  No class—work on papers

Dec  3 Data quality, uncertainty, error
Dec  7 Paper reports

Papers due: Monday, December 10, 5:00 pm