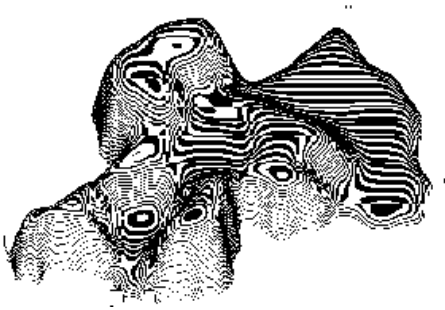


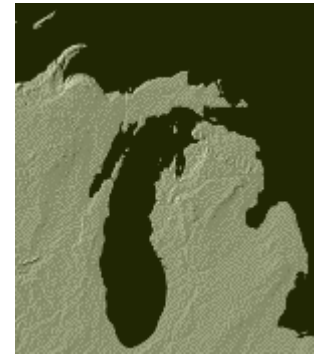
NRE 639-039: Seminar in Geographic Information Science Offered Winter 2005



Description: Geographic information science can be thought of as the interdisciplinary “science behind the systems.” This seminar will explore the conceptual and technical issues that affect application of geo-spatial technologies. We will explore these issues through readings describing their fundamental elements as well as specific research on them. The seminar will follow on the agenda-setting exercise carried out by the University Consortium for Geographic Information Science, of which the University of Michigan is a member. We will

specifically explore the research topics identified by that process. They include the following:

- Spatial Data Acquisition and Integration
- Cognition of Geographic Information
- Scale
- Extensions to Geographic Representations
- Spatial Analysis and Modeling in a GIS Environment
- Uncertainty in Geographic Data and GIS-Based Analysis
- The Future of the Spatial Information Infrastructure
- Distributed and Mobile Computing
- GIS and Society: Interrelation, Integration, and Transformation
- Geographic Visualization
- Ontological Foundations for Geographic Information Science
- Remotely Acquired Data and Information in GIScience
- Geospatial Data Mining and Knowledge Discovery



That geographic information is broadly applicable across a wide range of disciplines and application areas, the discussion will necessarily focus on the fundamental GIScience issues and research that cuts across a broad range of applications. Specific applications will enter into the discussion as we examine how the issues above affect GIS applications.

Course Structure: The course meets one hour each week in seminar format.

Requirements: Students or the instructor will be assigned to begin and lead discussions each week, drawing together summary information from the text with articles from the research literature. Students who elect to enroll in the course for two credits are also required to produce a paper summarizing past research and future prospects for research on a specific topic, which can include reference to a specific application or discipline.

Text: McMaster, R.B., Usery, E.L., eds. 2004. *A Research Agenda for Geographic Information Science*. New York: CRC Press.

Instructor: Dan Brown, Associate Professor, Sch. of Nat. Res. & Env. (danbrown@umich.edu)