

New Fall 2002 Course

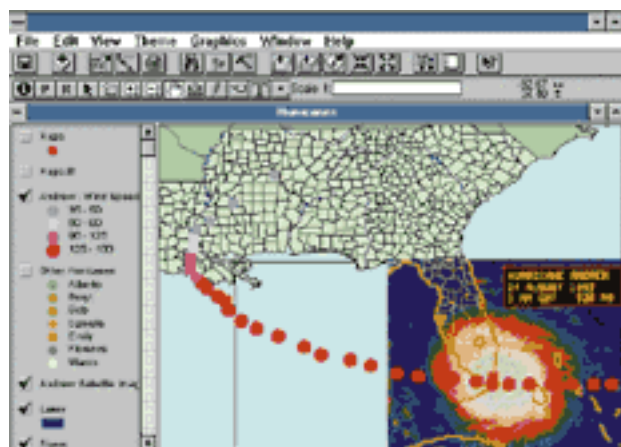
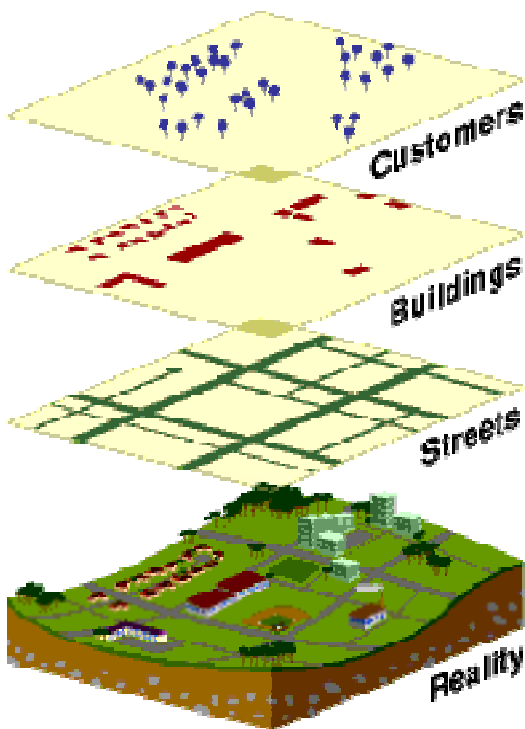
CIS-441: Geographic Information Systems

Brief description: Geographic Information Systems (GIS) allow individuals and organizations to pose, explore and answer a variety of public- and private-sector questions using spatial data. In this course the student will learn to identify, manipulate and analyze spatial data using state-of-the-art software. The course is project-driven and hands-on: students will define and address real problems using real data. The course will also cover selected topics in information visualization as they relate to the use of GIS.

The course will take students through the life-cycle of spatio-temporal data. There are three main phases to the course: (i) rudiments of spatio-temporal data; (ii) advanced GIS concepts such as map understanding, data transformation, spatial analysis and data visualization; (iii) GIS for problem-solving and decision-making. Students in the course are also expected to learn how to design effective information visualizations for GIS applications.

Prerequisite: CIS 431 (Intro. Database Systems)

Background: GIS technologies are used by individuals and organizations to formulate and solve problems that require analysis of spatio-temporal data (e.g., household median income in the New York Metropolitan area from 1980 to present). GIS technologies are used in a variety of fields, including marketing (e.g., in targeted advertising), policy analysis (e.g., in Congressional redistricting) and engineering management (e.g., in infrastructure management). GIS technologies can be powerful tools in part because they communicate through information visualization, thus drawing on a core human capability. Accordingly, visualization tools such as GIS can serve as the lingua franca for communications *among* organizations.



Images from www.gis.com