Advanced Spatial Database Design and Management (PSMA 6540) – 3 credit hours

Tennessee State University
College of Agriculture, Human and Natural Sciences

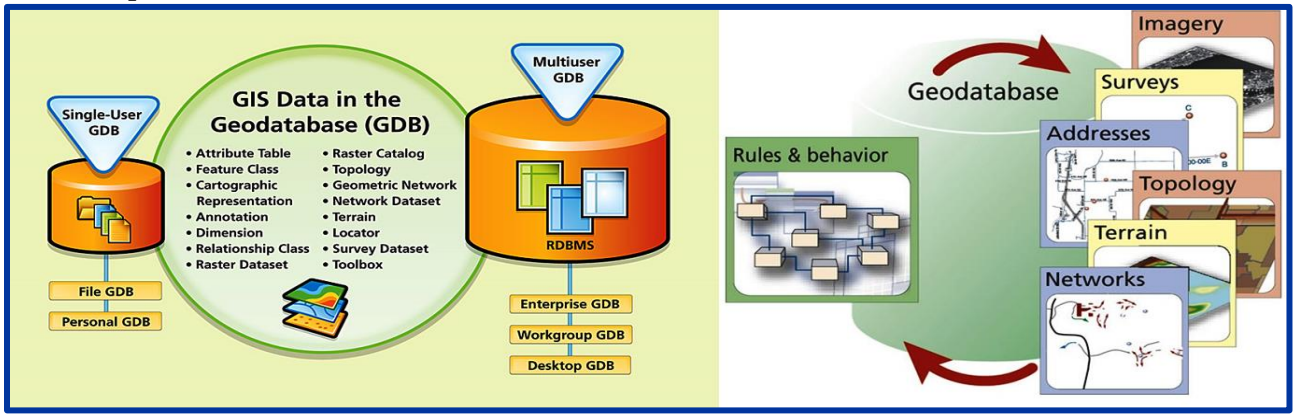
The examination and demonstration of the accuracy and usability of geo-data determines the analysis, output, and cost of any geospatial information system (GIS). Spatial database design and management optimizes the definition, creation, update, storage, query and administration of geographic features: points, lines and polygons; topology (i.e., spatial relations), linear network and surface features (3D). This course will introduces students to principle and practices of accessing, and reading, a well-designed GIS data model i.e., personal, file-based, multi-user geodatabase. The course will also presents techniques of geodatabase design, manipulation, maintenance, and presentation needed for geodatabase administration and/or to obtain required functionality from a GIS analysis.

Students in this Course are Competent in:

- Organizing geographic information for geodatabase design;
- Creating new or modifying an existing geodatabase schema and contents;
- populating the geodatabase through addition, copying, importing and loading feature datasets, classes, and tables;
- Editing features, maintaining attribute and spatial integrity;
- Understanding spatial relationships rules, correcting errors and validation; and
- Advanced cartographic representation techniques.

Topic Covered are:

- Creating and expanding a logical model; building geodatabase and its complex components and populating with data;
- Working with data: Creating new feature classes and exploring different creations tools, and geo-referencing;
- Spatial topology, setting up topology for map, geometric networks and geodatabase; and
- Advanced technique of geo-data representation i.e., labeling with maplex, dynamic annotation, and custom legend.



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