



Template E

*Learning ArcGIS 10 continued: Visualization of phenomena on the earth's surface; Data Display and Cartography. Attribute Data Input and Management: Database management, relational database management systems (RDBMS). Data Exploration. Attribute Data Query, Spatial Data Query. Understanding RDBMS structure, relational join and relate operations, database (attribute) queries.*

Template E

capabilities of GISs enable the visualization and analysis of energy resources and related phenomena (Students will read the text and other readings, study notes, complete textbook-based exercises, and review websites. Software-based labs will be assigned to encourage student learning and to encourage simple data-based analysis and cartographic visualization using GIS software. For example, students will be given an assignment to map unemployment and gas production in Pennsylvania by county using choropleth and graduated cylinder classification techniques.)

**6) Demonstrate application of industry-standard GIS software to derive information from databases, and address energy-related problems with spatial dimensions** (Students will read the text and other readings, study notes, and complete textbook-based exercises. They will