### Geographic Information Systems (GIS)

#### GIS 2640
**Geographic Information Systems and Surveying**  
2:2:0  
* Prerequisite(s): EGDT 2400, GEOG 3600  
On Sufficient Demand  

Presents geospatial data and modeling principles and techniques using raster and vector geoprocessing. Teaches Geovisualization and Geospatial information sources, digital terrain modeling, spatial data analysis, and mapping project implementation. Covers concepts of real property related to land registration and information systems and the value of maps for governance, commerce, and research of social and environmental systems regionally, nationally, and globally. Lab access fee of $35 for computers applies.

#### GIS 3600 (Cross-listed with: GEOG 3600)
**Introduction to Geographic Information Systems**  
4:3:3  
* Prerequisite(s): [Completion of a course that meets the PP (Physical Science) or SS (Social Science) general education requirement is recommended] and University Advanced Standing  
Fall, Spring  

Introduces the history, theory, and operation of Geographic Information Systems (GIS). Includes an introduction to GIS data sources, database design, data input, spatial analysis, and map production. Offers valuable preparation for careers in geology, geography, geographic information systems, geomatics, planning, surveying, marketing, environmental technology, biology, engineering, and other related fields. Lab access fee of $30 for computers applies.

#### GIS 3620
**Advanced GIS for Geomatics**  
3:3:0  
* Prerequisite(s): (GIS 3600 or GEOG 3600) and University Advanced Standing  
Spring  

Presents geospatial data and modeling principles and techniques using raster and vector geoprocessing. Teaches Geovisualization and Geospatial information sources, digital terrain modeling, spatial data analysis, and mapping project implementation. Covers concepts of real property related to land registration and information systems and the value of maps for governance, commerce, and research of social and environmental systems regionally, nationally, and globally. Software fee of $18 applies. Lab access fee of $35 for computers applies.

#### GIS 3640
**Thematic Mapping Environmental Impacts**  
3:3:0  
* Prerequisite(s): GIS 2640 and University Advanced Standing  
On Sufficient Demand  

Analyzes ways to geographically visualize the impact of natural disasters, energy processes, human impacts, and other impacts on the environment. Reviews the regional and global interrelationships of land, water, and atmosphere to the environment. Involves producing a thematic global and regional mapping project(s) considering the environmental impacts or potential impacts as presented in this course. Lab access fee of $35 for computers applies.

#### GIS 3650
**Thematic Mapping Culture and Societies**  
3:3:0  
* Prerequisite(s): GIS 2640 and University Advanced Standing  
On Sufficient Demand  

Focuses on thematic maps of human activity covering the major cultural regions of the world considering cultural, political, and economic environments. Presents various ways to cartographically depict sociological data such as: population, religion, language, migration, and industries, etc.. Involves producing a thematic global and regional mapping project(s) as presented in this course. Lab access fee of $35 for computers applies.