

### **342 INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS (3)**

Prerequisites: Consent of department

Fundamentals of cartography; data development and acquisition; introduction to data structures and database management; spatial analysis and modeling; GIS applications areas. GIS and Society. Additional course fee.

### **343 ENVIRONMENTAL REMOTE SENSING (3)**

Photographic and nonphotographic techniques of acquiring environmental data, image interpretation and analysis, and fundamentals of digital image processing. Additional course fee.

### **344 ADVANCED GEOGRAPHIC INFORMATION SYSTEMS (3)**

Prerequisite: GEOG 342

Advanced concepts in spatial data structures, database development and management, data standards, data errors and quality control, and spatial analysis and modeling. Additional course fee.

### **345 ANALYTICAL CARTOGRAPHY (3)**

Map projections and the concept of distortion, symbolization, and generalization; principles of color, principles of map design, visualization, map animation and map production and reproduction. Additional course fee.

### **443 DIGITAL IMAGE PROCESSING (3)**

Prerequisite: GEOG 343

Digital image processing and analysis of remotely sensed data for earth resource management applications and imagery in GIS. Additional course fee.

### **444 GEOGRAPHIC INFORMATION SYSTEMS APPLICATION (3)**

Prerequisite: GEOG 344

Development and implementation of a major GIS project and seminars on GIS project planning and implementation, decision making in the GIS context, and system planning and implementation. Additional course fee.