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## **GEOGRAPHY: INFORMATION SCIENCE**

### **GIS 2030, Fundamentals of Remote Sensing Fundamentals of Remote Sensing**

**3 hrs., 3 crs.,**

(Offered fall). This course introduces basic concepts and fundamentals of remote sensing, image processing, and the global positioning system (GPS). The principles and processes involved in air-photo interpretation will be reviewed and examined. Image processing techniques will be reviewed from practical and mathematical points of view. The course is intended to provide the student with the background information necessary to successfully use remotely sensed imagery and GPS in conjunction with GIS technology.

### **GIS 2030C, Fundamentals of Remote Sensing Fundamentals of Remote Sensing**

**4 hrs., 3 crs.,**

(Offered fall). This course introduces basic concepts and fundamentals of remote sensing, data processing, and the global positioning system (GPS). The principles and processes of orthophotography, LiDAR, sonar, thermography, and radio direction finding/analysis will be reviewed and examined. Additionally, students will be trained to use GIS tools to perform object and pixel-based recognition, and perform stockpile volume/mass analysis.

### **GIS 2040, Introduction to Geographic Information Systems Introduction to Geographic Information Systems**

**3 hrs., 3 crs.,**

(Offered spring). This course teaches fundamental concepts and techniques of geographic information systems (GIS). It covers basic concepts such as map projections, spatial data models, relational databases, spatial analysis, and visualization of spatially distributed data and phenomena. The applications of GIS are presented. Future issues for GIS and state-of-the-art technology are also discussed.

### **GIS 2040C, Introduction to Geographic Information Systems Introduction to Geographic Information Systems**

**4 hrs., 3 crs.,**

(Offered spring). This course teaches fundamental concepts and techniques of geographic information systems (GIS). It covers basic concepts such as basic geographic and cartographic concepts, GIS data accessibility, spatial data structures, basic spatial relationship analysis, and visualization of spatially distributed data and phenomena to solve practical problems.

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