Geographic Information Systems (GIS)

GIS 455. Introduction to Geographic Information Systems. 3 Credits.
Application of the principles of geographic information systems and integrally related mapping to solve problems related to environment site characterizations, resource exploration, soil and groundwater contamination, geological and geotechnical investigations, waste management, construction, etc. Comprehensive lab assignments included to give students hands-on experience solving problems with current state-of-the-art software and hardware, digitizers, scanners, and GPS units. Dual-listing: GIS 655.

GIS 456. Advanced Geographic Information Systems. 3 Credits.
Application and analysis of advanced techniques and principles of geographic information systems and remote sensing technologies to fully address spatial and time related problems related to urban site characterizations, hydrologi analyses, risk assessment, policy making, disaster response and strategis defense techniques. Comprehensive lab assignments included to give students hands-on experience solving problems with current state-of-the-art software and hardware, digitizers, scanners, and GPS units. Prereq: GIS 455. Dual-listing: GIS 656.

GIS 470. Remote Sensing. 3 Credits.
Application of principles of Remote Sensing technology to integrate multiple interrelated data, to identify and/or accentuate spectral indices, magnetic force, electromagnetic energy and other remotely collected data to analyze temporal and spatial variation. Cross-listed with GEOL 470. Dual-listing: GIS 670.

GIS 480. Geographic Information Systems Pattern Analysis and Modeling. 3 Credits.
Application of GIS for determination of: factors or variables that influence geospatial patterns, data limitations in spatial and temporal continuum scales, identification of data anomalies, optimal data prediction, and evaluation of prediction uncertainty. Prereq: GIS 455. Cross-listed with GEOL 480. Dual-listing: GIS 680.

GIS 655. Introduction to Geographic Information Systems. 3 Credits.
Application of the principles of geographic information systems and integrally related mapping to solve problems related to environment site characterizations, resource exploration, soil and groundwater contamination, geological and geotechnical investigations, waste management, construction, etc. Comprehensive lab assignments included to give students hands-on experience solving probems with current state-of-the-art software and hardware, digitizers, scanners, and GPS units. Dual-listing: GIS 455.

GIS 656. Advanced Geographic Information Systems. 3 Credits.
Application and analysis of advanced techniques and principles of geographic information systems and remote sensing technologies to fully address spatial and time related problems related to urban site characterizations, hydrological analyses, risk assessment, policy making, disaster response and strategic defense techniques. Comprehensive lab assignments will give students hands-on experience solving problems with current state-of-the-art software and hardware, digitizers, scanners, and GPS units. Prereq: GIS 655. Dual-listing: GIS 456.

GIS 670. Remote Sensing. 3 Credits.
Application of principles of Remote Sensing technology to integrate multiple interrelated data, to identify and/or accentuate spectral indices, magnetic force, electromagnetic energy and other remotely collected data to analyze temporal and spatial variation. Dual-listing: GIS 470.

GIS 680. Geographic Information Systems Pattern Analysis and Modeling. 3 Credits.
Application of GIS for determination of: factors or variables that influence geospatial patterns, data limitations in spatial and temporal continuum scales, identification of data anomalies, optimal data prediction, and evaluation of prediction uncertainty. Prereq: GIS 655. Cross-listed with GEOL 680. Dual-listing: GIS 480.