GEOGRAPHIC INFORMATION SCIENCE (GISC)

Course Descriptions

GISC 105 Intro to Geospatial Technologies 4 Credit Hours
This survey course is designed to introduce the "science of where," the application of tools and techniques to collect, manage, analyze, visualize, and share information that is spatial. Topics include cartography and map design, geospatial data and GPS, geographic information systems (GIS), remote sensing (RS), and geospatial applications. This course will provide hands-on experience and a solid foundation that develops high-demand, high-wage skills used in research and industry across several disciplines, including the natural sciences, social sciences, business, engineering, urban planning, and criminal justice. (F, YR).

GISC 302 Mapping Our World 4 Credit Hours
Mapping our World provides an introduction to the important role geographic data analysis can play in helping solve today's pressing problems. Students learn about Geographic Information Systems (GIS) and their applications, particularly in the natural and social sciences as well as humanities. Sample topics of inquiry may include public health, population patterns, spatial inequities, and environmental vulnerabilities. (F, YR).

GISC 340 Remote Sensing 4 Credit Hours
This course introduces students to the basics of remote sensing, characteristics of remote sensors, and remote sensing applications in academic disciplines and professional industries. Students will explore the physical and mathematical principles underlying remote sensing techniques, and will practice the acquisition, processing, and visualization of remotely derived data. This course emphasizes hands-on learning through projects. (W, YR).
Restriction(s):
Can enroll if Class is Junior or Senior or Graduate

GISC 385 GIS Internship 1 to 3 Credit Hours
A field assignment relating to the student's GIS interests. The student will work in an off-campus government or private business for a prescribed number of hours each week to be arranged by the advisor and employer. May be repeated up to two times. Written permission of instructor. (F, W, S, YR). (F, W, S, YR).
Restriction(s):
Can enroll if Class is Junior or Senior or Graduate

GISC 440 Advanced GIS 4 Credit Hours
This course offers an opportunity for students with a background in the fundamentals of geographic information systems (GIS) to apply the analytical capabilities of geospatial technology to model real-world situations in support of decision making. Particular emphasis is given to data development and management, spatial and statistical analyses, customization, and effective visualization. (W, YR).
Prerequisite(s): GEOL 305 or ESCI 305 or GEOG 305

GISC 485 Spatial Analysis and GIS 4 Credit Hours
The statistical methods behind analyzing spatial datasets is covered in detail, with a strong emphasis on environmental sciences and human populations. This course complements courses in remote sensing, geographic information systems, and geographic principles and is designed to quantitatively evaluate the relationships between objects and their surroundings. (AY).
Prerequisite(s): GEOL 305 or ESCI 305 or GEOL 340 or ENST 340 or GEOG 302 or GEOG 202 or GEOG 305
Restriction(s):
Can enroll if College is Engineering and Computer Science or Education, Health, and Human Services or Business or Arts, Sciences, and Letters

GISC 498 GIS Independent Study 1 to 4 Credit Hours
Independent study performed under the guidance of a faculty member. Permission of instructor. (F,W,S). (F, W, S, YR).

GISC 499 GIS Research 1 to 4 Credit Hours
Directed research using GIS performed under the guidance of a faculty member. Permission of instructor. (F,W,S). (F, W, S, YR).
Restriction(s):
Cannot enroll if Class is Freshman or Sophomore

*An asterisk denotes that a course may be taken concurrently.

Frequency of Offering

The following abbreviations are used to denote the frequency of offering: (F) fall term; (W) winter term; (S) summer term; (F, W) fall and winter terms; (YR) once a year; (AY) alternating years; (OC) offered occasionally