Duluth Campus

Geographic Information Science Minor

Geography & Philosophy

College of Arts, Humanities and Social Sciences

- Program Type: Undergraduate minor related to major
- Requirements for this program are current for Fall 2023
- Required credits in this minor: 22 to 23

The minor in Geographic Information Science (GIS) has at its core the study and use of geographic information systems. Central to this program are the theoretical and applied fundamentals of the collection, management, analysis, and representation of spatial data. The program builds on this core by exploring both traditional and novel methods for geo-visualization. Methods include teaching about various remote sensing technologies used to collect and classify remotely sensed data and how to use these technologies, critically discussing the implications of geo-spatial technologies on individuals and society, demonstrating how geo-spatial technologies are used effectively in urban and regional planning processes, and by exploring applications of GIS to environmental, resource and policy/management issues. The minor interweaves well with majors in anthropology, biology, chemistry, computer science, criminology, engineering, environmental sciences, geology, history, mathematics, political science, sociology, and statistics.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Minor Requirements

Geography Foundations (6-7 cr)

GIS 2552 - Mapping Our World [LOGIC & QR] (3.0 cr)

Take 1 or more course(s) from the following:

- GEOG 1205 - Our Globalizing World [SOC SCI, GLOBAL PER] (3.0 cr)
- GEOG 1414 - The Physical Geography [LE CAT, NAT SCI, SUSTAIN] (4.0 cr)
- EES 1110 - Geology and Earth Systems [LE CAT, NAT SCI, SUSTAIN] (4.0 cr)

Information Science (8 cr)

Take 2 or more course(s) from the following:

- GIS 3563 - Geographic Information Science I: Theory and Analysis (4.0 cr)

GIS 3564 - Geographic Information Science II: Applied GIS (4.0 cr)

Electives (8 cr)

Take 1 - 2 course(s) from the following:

- GIS 3580 - Earth Imagery (4.0 cr)
- GIS 4533 - Distributed Geographic Information Services: Mobile and Web Based Solutions (4.0 cr)
- GIS 4585 - Advanced GIS Analytics (4.0 cr)
- GIS 4586 - Geoprocessing with Python (4.0 cr)
- GIS 4612 - GIS Data Capture & Management (4.0 cr)
- GIS 5571 - Geographic Information Science in Urban Analysis (4.0 cr)
- GIS 5572 - Environmental Application of GIS (4.0 cr)
- GIS 5573 - GIScience in Regional Sustainability Applications (4.0 cr)
- GIS 5581 - Digital Image Processing and Analysis (4.0 cr)
- GIS 2xxx-5xxx
- **Optional Experience**

Take 0 - 4 credit(s) from the following:

- GIS 3591 - Independent Study in GIS (1.0 - 3.0 cr)
- GIS 3597 - Internship in GIS (3.0 - 4.0 cr)
- GIS 4910 - Teaching Assistantship (1.0 - 2.0 cr)
- GIS 4999 - Honors Project in Geographic Information Science (1.0 - 4.0 cr)

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