Duluth Campus

Geographic Information Science B.A.

Geography & Philosophy

College of Arts, Humanities and Social Sciences

- **Students will no longer be accepted into this program after Fall 2018. Program requirements below are for current students only.**
- **The Geographical Information Science BA has been replaced by the Geographical Information Science BS.**

- Program Type: Baccalaureate
- Requirements for this program are current for Spring 2022
- Required credits to graduate with this degree: 120
- Required credits within the major: 52 to 57
- Degree: Bachelor of Arts

The core of the Geographic Information Science major is the study and use of geographic information systems (GIS). 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 and by exploring applications of GIS to environmental, resource, and policy/management issues. Methods include teaching various remote sensing technologies used to collect and classify remotely sensed data, critically discussing the implications of geo-spatial technologies on individuals and society, and demonstrating how geo-spatial technologies are used effectively in urban and regional planning processes. Students also learn about GIS project management and research process, professional ethics, and presentation. The major blends well with other majors such as anthropology, biology, chemistry, computer science, criminology, engineering, environment and sustainability, geography, geology, history, mathematics, political science, sociology, statistics, and urban and regional studies. Students are encouraged to double major.

Honors Requirements: Candidates must have a 3.00 overall GPA and a 3.30 in the major. An honors project must be completed in GEOG 4999. Students who wish to have such work considered for honors must complete a departmental form prior to the second semester of their senior year. Completed projects must be approved by the sponsoring faculty member and other members of the department.

Program Delivery

This program is available:

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

Admission Requirements

For information about University of Minnesota admission requirements, visit the Office of Admissions website.

Required prerequisites

Introductory Requirement (1 cr)

Transfer students with 24 or more credits and current UMD students who change colleges to CLA are exempt from this requirement.
New first-year students with 24 or more PSEO credits may request to be waived from this requirement.
UST 1000 - Learning in Community (1.0 - 2.0 cr)

General Requirements

The Board of Regents, on recommendation of the faculty, grants degrees from the University of Minnesota. Requirements for an undergraduate degree from University of Minnesota Duluth include the following:

1. Students must meet all course and credit requirements of the departments and colleges or schools in which they are enrolled including an advanced writing course. Students seeking two degrees must fulfill the requirements of both degrees. However, two degrees cannot be awarded for the same major.
2. Students must complete all requirements of the Liberal Education Program.
3. Students must complete a minimum of 120 semester credits.
4. At least 30 of the last 60 degree credits earned immediately before graduation must be awarded by UMD.
5. Students must complete at least half of their courses at the 3xxx-level and higher at UMD. Study-abroad credits earned through courses taught by UM faculty and at institutions with which UMD has international exchange programs may be used to fulfill this requirement.
6. If a minor is required, students must take at least three upper division credits in their minor field from UMD.
7. The minimum cumulative UM GPA required for graduation will be 2.00 and will include only University of Minnesota coursework. A

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minimum UM GPA of 2.00 is required in each UMD undergraduate major and minor. No academic unit may impose higher grade point standards to graduate.

8. Diploma, transcripts, and certification will be withheld until all financial obligations to the University have been met.

Program Requirements

1. A second field or study (either a minor or another major).

2. If students choose to double major in any of the following combinations GIS, GEOG, ES, or URS, they must follow the fall 2012 or later degree requirements for all programs. Following these requirements addresses the overlapping of courses across programs.

3. Students with the GIS major cannot pursue the GIS undergraduate certificate or the GEOG minor (starting fall 2016 for the latter).

Required Core (30-31 cr)

GEOG 1414 - The Physical Geography [LE CAT, NAT SCI, SUSTAIN] (4.0 cr)
or EES 1110 - Geology and Earth Systems [LE CAT, NAT SCI, SUSTAIN] (4.0 cr)
GEOG 1202 *{Inactive}*[LE CAT8, LEIP CAT08, GLOBAL PER] (3.0 cr)
or GEOG 1304 *{Inactive}*[LE CAT6, LECD CAT06, SOC SCI] (3.0 cr)
or GEOG 2305 - Geography of Cultural Diversity [CDIVERSITY] (3.0 cr)
And all of the following:
GEOG 2552 *{Inactive}*[LE CAT2, LOGIC & QR] (3.0 cr)
GEOG 3532 *{Inactive}*(4.0 cr)
GIS 3580 - Earth Imagery (4.0 cr)
GIS 4585 - Advanced GIS Analytics (4.0 cr)
GIS 3597 - Internship in GIS (3.0 - 4.0 cr)
GEOG 4612 *{Inactive}*(4.0 cr)
GIS 4909 - Professional Preparedness (1.0 cr)

Information Science Requirement (4-8 cr)

GIS 3563 - Geographic Information Science I: Theory and Analysis (4.0 cr)
GIS 3564 - Geographic Information Science II: Applied GIS (4.0 cr)
or **Graduate Level Course (consent required)**
GIS 4565 *{Inactive}*(4.0 cr)

Electives (14 cr)

Take 2 courses for a minimum of 8 credits from GIS 3xxx-5xxx. Additional GIS 2xxx-5xxx courses will apply to the 'Other Electives' area. To fulfill this requirement take courses from the 'Other Electives' area to reach a minimum of 14 elective credits across both sub-requirements. Courses cannot satisfy more than one area within the major.

Take 2 or more course(s) totaling 8 or more credit(s) from the following:
•GIS 3591 - Independent Study in GIS (1.0 - 3.0 cr)
•GIS 4533 - Distributed Geographic Information Services: Mobile and Web Based Solutions (4.0 cr)
•GIS 4586 - Geoprocessing with Python (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 5591 - Independent Study (1.0 - 3.0 cr)
•**Other Electives**
Take 6 or more credit(s) from the following:
•BIOL 5808 *{Inactive}*(3.0 cr)
•CUE 3101 - Introduction to Design Thinking and Conceptual Competencies (3.0 cr)
•ES 3100 - Sustainable Food Systems (4.0 cr)
•ES 3500 - Ecological Economics (3.0 cr)
•FORS 3167 - GEOG 3167 Cultural Geography of Iceland (3.0 cr)
•FORS 3205 *{Inactive}*(3.0 cr)
•FORS 3800 *{Inactive}*(4.0 cr)
•GIS 2xxx
•GIS 3xxx
•GIS 4xxx
•GIS 5xxx
•SSP 3004 - Peer Tutor Practicum (1.0 - 2.0 cr)
•ART 1013 - 2-D Digital Design (3.0 cr)
or ART 1900 - Visual Literacy [LE CAT, FINE ARTS] (3.0 cr)

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- CS 1121 - Introduction to Programming in Visual BASIC.NET [LE CAT, LOGIC & QR] (3.0 cr)
  or CS 1141 *{Inactive}*(3.0 cr)
  or CS 2121 *{Inactive}*[LE CAT, LOGIC & QR] (3.0 cr)
- CS 3211 *{Inactive}*(4.0 cr)
  or CS 4322 - Database Management Systems (4.0 cr)

Advanced Writing Requirement (3 cr)
WRIT 31xx - Adv Writing (3 cr)

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