# GEOGRAPHY & GEOGRAPHIC INFORMATION SCIENCE: GEOGRAPHIC INFORMATION SCIENCE, BSLAS

*for the degree of Bachelor of Science in Liberal Arts & Sciences in Geography & Geographic Information Science, Geographic Information Science Concentration*

A Bachelor of Science in Geography & Geographic Information Science with Geographic Information Science concentration prepares students to use cutting-edge geospatial technologies and data to examine environmental and social issues; support business decisions; protect the environment; and manage the massive amounts of spatial data generated from mobile devices and sensor networks. The GIS concentration provides in-depth practical and field training, preparing students for geospatial careers- one of the fastest-growing domestic job sectors.

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## Graduation Requirements

Minimum hours required for graduation: 120 hours
Minimum required major and supporting course work: A minimum of 36 credit hours of Geography and Geographic Information Science courses. Twelve (12) hours of 300- and 400-level courses in the major must be taken on this campus.

## University Requirements

Minimum of 40 hours of upper-division coursework, generally at the 300 and 400 level. These hours can be drawn from all elements of the degree, including courses outside of GGIS. Students should consult their academic advisor for additional guidance in fulfilling this requirement.

The university and residency requirements can be found in the Student Code (https://studentcode.illinois.edu/article3/part8/3-801/) (§ 3-801) and in the Academic Catalog (http://catalog.illinois.edu/general-information/degree-general-education-requirements/).

## General Education Requirements

Follows the campus General Education (Gen Ed) requirements (https://courses.illinois.edu/gened/DEFAULT/DEFAULT/). Some Gen Ed requirements may be met by courses required and/or electives in the program.

| Code | Title | Hours |
|---|---|---|
| Composition I | | 4-6 |
| Advanced Composition | | 3 |
| Humanities & the Arts (6 hours) | | 6 |
| Natural Sciences & Technology (6 hours) | | 6 |
| Social & Behavioral Sciences (6 hours) | | 6 |
| fulfilled by GGIS 101, GGIS 104, GGIS 106, GGIS 210, GGIS 221, or GGIS 254 and any other course approved Social & Behavioral Sciences | | |
| Cultural Studies: Non-Western Cultures (1 course) | | 3 |
| Cultural Studies: US Minority Cultures (1 course) | | 3 |
| Cultural Studies: Western/Comparative Cultures (1 course) | | 3 |
| Quantitative Reasoning (2 courses, at least one course must be Quantitative Reasoning I) | | 6-10 |
| fulfilled by GGIS 371 and any other course approved as Quantitative Reasoning I | | |
| Language Requirement (Completion of the fourth semester or equivalent of a language other than English, or completion of the third semester in two different languages other than English is required) | | 0-20 |

| Code | Title | Hours |
|---|---|---|
| **Orientation and Professional Development** | | |
| LAS 101 | Design Your First Year Experience | 1 |
| OR | | |
| LAS 100 & LAS 101 | Success in LAS for International Students and Design Your First Year Experience | 3 |
| OR | | |
| LAS 102 | Transfer Advantage | 1 |

## Major Requirements

| Code | Title | Hours |
|---|---|---|
| **Geography & GIS Core Requirements** | | **6-8** |
| Physical Geography Course (Select 1): | | |
| ATMS/GGIS 100 | Introduction to Meteorology | |
| GGIS 103 | Earth's Physical Systems | |
| GGIS 220 | Landscapes, Ecosystems and Environmental Change | |
| GGIS 222 | Big Rivers of the World | |
| Human Geography Course (Select 1): | | |
| GGIS 101 | Global Development & Environment | |
| GGIS 104 | Social and Cultural Geography | |
| GGIS 106 | Geographies of Globalization | |
| GGIS 210 | Social & Environmental Issues | |
| GGIS 221 | Geographies of Global Conflict | |
| GGIS 254 | People, Places, and Environments of the US | |

### Geographic Information Science (GIS) Concentration Requirements

| Code | Title | Hours |
|---|---|---|
| **Total Concentration Hours** | | **30-35** |
| **GIS Core Courses:** | | |
| GGIS 371 | Spatial Analysis | 4 |
| GGIS 379 | Introduction to Geographic Information Systems | 4 |
| GGIS 380 | Geographic Information Systems II | 4 |
| Computer Science Course (Select 1): | | 3 |
| CS 105 | Intro Computing: Non-Tech | |
| CS 124 | Introduction to Computer Science I | |

or equivalent course approved by the Department's Advisor

| GIS Elective Courses (Select 3): | | 9-12 |
|---|---|---|
| GGIS 205 | Business Location Decisions | |
| SOC/GGIS 280 | Intro to Social Statistics | |
| GGIS 381 | Enterprise GIS | |
| GGIS 403 | Geographic Information Science and Systems | |
| GGIS 407 | CyberGIS & Geospatial Data Science | |
| GGIS 412 | Geospatial Technologies & Society | |
| ATMS/GGIS 421 | Earth Systems Modeling | |
| GGIS 439 | Health Applications of GIS | |
| GGIS 460 | Aerial Photo Analysis | |
| GGIS 473 | Digital Cartography & Map Design | |
| GGIS 476 | Environmental Remote Sensing | |
| GGIS 477 | Introduction to Remote Sensing | |
| GGIS 478 | Techniques of Remote Sensing | |
| GGIS 479 | Advanced Topics in GIS | |
| GGIS 480 | Principles of Geographic Information Science | |
| GGIS 489 | Programming for GIS | |
| Human and/or Physical Geography Courses (Select 2): | | 6-8 |
| GGIS 204 | Cities of the World | |
| GGIS 210 | Social & Environmental Issues | |
| GGIS 220 | Landscapes, Ecosystems and Environmental Change (if not taken to satisfy the Physical Core course requirement in the major) | |
| GGIS 221 | Geographies of Global Conflict (if not taken to satisfy the Human Core course requirement in the major) | |
| GGIS 222 | Big Rivers of the World (if not taken to satisfy the Physical Core course requirement in the major) | |
| GGIS 223 | Geopolitics & Technology | |
| GGIS 224 | Environmental Data Science | |
| GGIS 254 | People, Places, and Environments of the US (if not taken to satisfy the Human Core course requirement in the major) | |
| NRES/GGIS 287 | Environment and Society | |
| GGIS 350 | Sustainability and the City | |
| ESE 320/GGIS 370 | Water Planet, Water Crisis | |
| GGIS 384 | Population Geography | |
| NRES/GGIS 401 | Watershed Hydrology | |
| GGIS 405 | Geography Field Course | |
| GGIS 406 | Fluvial Geomorphology | |
| GGIS 408 | Humans and River Systems | |
| GGIS 410 | Green Development | |
| GGIS 425 | Urban Geographies of Migration | |
| IB 439/GGIS 436 | Biogeography | |
| GGIS 438 | Geography of Health Care | |
| LA/GGIS 446 | Sustainable Planning Seminar | |
| GGIS 455 | Geography of Sub-Saharan Africa | |
| CEE/GGIS 459 | Ecohydraulics | |
| GGIS 465 | Transportation &Sustainability | |
| GGIS 466 | Environmental Policy | |
| GGIS 471 | Modern Geographic Thought | |
| ESE/GGIS 482 | Challenges of Sustainability | |
| GGIS 483 | Urban Geography | |
| GGIS 495 | Advanced Topics in Geography | |
| GGIS 496 | Climate & Social Vulnerability | |

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# Sample Sequence

This sample sequence is intended to be used only as a guide for degree completion. All students should work individually with their academic advisors to decide the actual course selection and sequence that works best for them based on their academic preparation and goals. Enrichment programming such as study abroad, minors, internships, and so on may impact the structure of this four-year plan. Course availability is not guaranteed during the semester indicated in the sample sequence.

*Students must fulfill their Language Other Than English requirement by successfully completing a fourth level of a language other than English. See the corresponding section on the* Degree and General Education Requirements page *(http://catalog.illinois.edu/general-information/degree-general-education-requirements/).*

**First Year**

| First Semester | Hours |
|---|---|
| LAS 101 | 1 |
| Human Geography course | 3 |
| Composition I or General Education course | 4 |
| Language Other Than English (3rd level) | 4 |
| General Education course | 3 |
| | **15** |

**Total Hours 15**

**First Year**

| Second Semester | Hours |
|---|---|
| Physical Geography course | 4 |
| General Education course | 3 |
| General Education course or Composition I | 3 |
| Language Other Than English (4th level) | 4 |
| | **14** |

**Total Hours 14**

**Second Year**

| First Semester | Hours |
|---|---|
| GIS Elective course | 3 |
| Human/Physical Geography course | 3 |
| CS 105 or 124 | 3 |
| General Education course | 3 |

| | Hours |
|---|---|
| Free Elective course | 3 |
| | **15** |

**Total Hours 15**

**Second Year**

| **Second Semester** | **Hours** |
|---|---|
| GIS Elective course | 3 |
| Human/Physical Geography course | 3 |
| General Education course | 3 |
| Free Elective course | 3 |
| Free Elective course | 3 |
| | **15** |

**Total Hours 15**

**Third Year**

| **First Semester** | **Hours** |
|---|---|
| GIS Elective course | 4 |
| GGIS 379 | 4 |
| GGIS 371 | 4 |
| General Education course | 3 |
| | **15** |

**Total Hours 15**

**Third Year**

| **Second Semester** | **Hours** |
|---|---|
| GGIS 380 | 4 |
| General Education course | 3 |
| General Education course | 3 |
| Free Elective course | 3 |
| Free Elective course | 3 |
| | **16** |

**Total Hours 16**

**Fourth Year**

| **First Semester** | **Hours** |
|---|---|
| General Education course | 3 |
| General Education course | 3 |
| Free Elective course | 3 |
| Free Elective course | 3 |
| Free Elective course | 3 |
| | **15** |

**Total Hours 15**

**Fourth Year**

| **Second Semester** | **Hours** |
|---|---|
| Free Elective course | 3 |
| Free Elective course | 3 |
| Free Elective course | 3 |
| Free Elective course | 3 |
| Free Elective course | 3 |
| | **15** |

**Total Hours 15**

**Total Hours: 120**

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# Geographic Understanding

GGIS students will understand the interconnectedness of places and scales in human-environmental systems, including the sustainability of those systems.

# Spatial Patterns and Processes

GGIS students will be able to analyze spatial patterns, distributions, processes, and connections within and among different human-environmental systems, using qualitative, quantitative, computational, and/or spatial methods of research appropriate to their level of training and their field of geographic inquiry.

# Problem-Solving and Communication

GGIS students will be able to formulate and conduct geographic analyses and communicate the results in verbal, written, and visual form.

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# For the Degree of Bachelor of Science in Liberal Arts and Sciences

- Major in Computer Science & Geography & GIS, BSLAS (http://catalog.illinois.edu/undergraduate/eng_las/computer-science-geography-geographic-information-science-bslas/)
- Major in Geography & Geographic Information Science, Geographic Information Science Concentration, BSLAS (p. 1)
- Major in Geography & Geographic Information Science, Physical Geography Concentration, BSLAS (http://catalog.illinois.edu/undergraduate/las/geography-geographic-information-science-bslas/physical-geography/)

# For the Degree of Bachelor of Arts in Liberal Arts and Sciences

- Major in Geography & Geographic Information Science, General Geography Concentration, BALAS (http://catalog.illinois.edu/undergraduate/las/geography-geographic-information-science-balas/general-geography/)
- Major in Geography & Geographic Information Science, Human Geography Concentration, BALAS (http://catalog.illinois.edu/undergraduate/las/geography-geographic-information-science-balas/human-geography/)

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# Department of Geography & Geographic Information Science (https://ggis.illinois.edu/)

Faculty directory (https://ggis.illinois.edu/directory/faculty/)
Undergraduate advising (https://ggis.illinois.edu/academics/
undergraduate/advising/)

# College of Liberal Arts & Sciences

College of LAS homepage (https://las.illinois.edu/)
Admissions & Requirements (http://catalog.illinois.edu/schools/las/
academic-units/)

# Admissions

University of Illinois Urbana-Champaign Undergrad Admissions (https://
www.admissions.illinois.edu/)