COMPUTER SCIENCE + GEOGRAPHY & GEOGRAPHIC INFORMATION SCIENCE, BSLAS

for the degree of Bachelor of Science in Liberal Arts & Sciences Major in Computer Science + Geography & Geographic Information Science

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Please see the computer science advisor as well as the geography advisor.

A Major Plan of Study Form must be completed and submitted to the LAS Student Academic Affairs Office by the beginning of the fifth semester (60-75 hours).

General education: Students must complete the Campus General Education (https://courses.illinois.edu/) **requirements including the campus general education language requirement.**
Minimum required major and supporting course work: Normally equates to 66 hours. Twelve hours of 300- and 400-level in the major must be taken on this campus.
Minimum hours required for graduation: 120 hours.

Code	Title	Hours
Required Computer Science Courses:		
CS 100	Computer Science Orientation (recommended; CS 100 is an orientation course aimed at first-year students, so students who declare the major after the freshman year are not required to complete it.)	1
CS 124	Introduction to Computer Science I	3
CS 128	Introduction to Computer Science II	3
CS 173	Discrete Structures	3
CS 225	Data Structures	4
CS 222	Software Design Lab	1
Choose one of the following combinations		8-11
CS 233 & CS 341	Computer Architecture and System Programming	
OR		
CS 340	Introduction to Computer Systems	
& two CS courses at the 400 level above CS 403, excluding CS 421 and CS 491		
Choose one of the following:		3
STAT 200	Statistical Analysis	
STAT 212	Biostatistics	
CS 361	Probability & Statistics for Computer Science (recommended)	
CS 374	Introduction to Algorithms & Models of Computation	4
CS 421	Programming Languages & Compilers	3 or 4
Mathematics (may also fulfill the General Education QR I and II requirements)		
MATH 220	Calculus	5
or MATH 221	Calculus I	
MATH 225	Introductory Matrix Theory	2 or 3
or MATH 257	Linear Algebra with Computational Applications	
MATH 231	Calculus II	3
Required Geographic Information Science Coursework - Minimum of 24 hours		
GGIS 371	Spatial Analysis	
GGIS 379	Introduction to Geographic Information Systems	
GGIS 380	Geographic Information Systems II	
Two (2) additional GIS courses from the following list:		6
GGIS 205	Business Location Decisions	
GGIS 224	Environmental Data Science	
GGIS/SOC 280	Intro to Social Statistics	
GGIS 407	Foundations of CyberGIS & Geospatial Data Science	
GGIS 412	Geospatial Technologies & Society	
GGIS/ATMS 421	Earth Systems Modeling	
GGIS/PATH 439	Health Applications of GIS	
GGIS 440	Business Applications of GIS	
GGIS 460	Aerial Photo Analysis	
GGIS 468	Biological Modeling	
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	
Two (2) human and/or physical geography courses:		6
GGIS 204	Cities of the World	
GGIS 210	Social & Environmental Issues	
GGIS 221	Geographies of Global Conflict	
GGIS 222	Big Rivers of the World	
GGIS/NRES 287	Environment and Society	
GGIS/ESE 350	Sustainability and the City	
GGIS 356	Sustainable Development in South Asia	
GGIS 370/ESE 320	Water Planet, Water Crisis	
GGIS 384	Population Geography	
GGIS/NRES 401	Watershed Hydrology	
GGIS 405	Geography Field Course	
GGIS 406	Fluvial Geomorphology	
GGIS 408	Humans and River Systems	
GGIS 410	Green Development	
GGIS 436/IB 439	Biogeography	
GGIS 438	Geography of Health Care	
GGIS 455	Geography of Sub-Saharan Africa	
GGIS/LA 446	Sustainable Planning Seminar	
GGIS 465	Transportation &Sustainability	

GGIS 466	Environmental Policy
GGIS 471	Modern Geographic Thought
GGIS 482	Challenges of Sustainability
GGIS 483	Urban Geography
GGIS 484	Cities, Crime, and Space
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		Second Semester	Hours
Free elective course		1	CS 128	3
CS 100		1	CS 173	3
Geographic Information Science course		3	MATH 220 (or MATH 221)	4
CS 124		3	General Education course or Composition I	4
Composition I or General Education course		4		
	12			**14**

Second Year

First Semester	Hours		Second Semester	Hours
CS 222		1	CS 233 (or CS 340)	3
CS 225		4	STAT 200 (or STAT 212 or CS 361)	3
MATH 225 (or MATH 257)		3	MATH 231	3
Language Other Than English (3rd level)		4	Language Other Than English (4th level)	4
General Education Course		3	General Education Course	3
	15			**16**

Third Year

First Semester	Hours		Second Semester	Hours
CS 341 (or CS 400-level course)		4	CS 374	4
Human and/or Physical Geography course		3	CS 400-level course or Free elective course	3
GGIS 371		4	Human and/or Physical Geography course	3
GGIS 379		4	General Education Course	3
General Education Course		3	General Education Course	3
	18			**16**

Fourth Year

First Semester	Hours		Second Semester	Hours
CS 421		3	Geographic Information Science course	3
GGIS 380		4	General Education Course	3
General Education Course		3	General Education Course	3
General Education Course		3	Free elective course	3
Free elective course		3	Free elective course	1
	16			**13**

Total Hours 120

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Undergraduate Degree Programs in Geography & Geographic Information Science

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

- Major in Computer Science & Geography & GIS, BSLAS (p. 1)
- Major in Geography & Geographic Information Science, Geographic Information Science Concentration, BSLAS (http://catalog.illinois.edu/undergraduate/las/geography-geographic-information-science-bslas/geographic-information-science/)
- 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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Computer Science Degree information: CS + X Degrees (https://cs.illinois.edu/academics/undergraduate/degree-program-options/cs-x-degree-programs/#requirements)
Geography & Geographic Information Science information: CS + GGIS (https://cs.illinois.edu/academics/undergraduate/degree-program-options/cs-x-degree-programs/computer-science-geography/)
Department of Geography & Geographic Information Science website
Geography & Geographic Information email (ggis-advisor@illinois.edu)
Computer Science email (undergrad@cs.illinois.edu)

Overview of college admissions & requirements: Liberal Arts & Sciences (http://catalog.illinois.edu/schools/las/academic-units/)

College of Liberal Arts and Sciences website (https://las.illinois.edu/)
The Grainger College of Engineering website (https://grainger.illinois.edu/)

Please see the computer science advisor as well as the geography advisor.