# Computer Science and Geography & Geographic Information Science, BALAS

## Major in Computer Science and Geography & Geographic Information Science

Computer Science email: academic@cs.illinois.edu

Geography and GIS email: ggis-advisor@illinois.edu

Minimum required major and supporting course work normally equates to 66 hours.

General education: Students must complete the Campus General Education requirements including the campus language requirement.

Twelve hours of 300- and 400-level courses in the major must be taken on this campus.

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

Minimum hours required for graduation: 120 hours

## Code | Title | Hours
--- | --- | ---
**Required Computer Science Courses:**
CS 100 | Freshman Orientation (recommended) | 1
CS 125 | Intro to Computer Science | 4
CS 126 | Software Design Studio | 3
CS 173 | Discrete Structures | 3
CS 225 | Data Structures | 4
CS 233 | Computer Architecture | 4
CS 241 | System Programming | 4
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
MATH 231 | Calculus II | 3

## Required Geographic Information Science Coursework - Minimum of 24 hours

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
</table>
GEOG 371 | Spatial Analysis | 4
GEOG 379 | Intro to GIS Systems | 4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
</table>
GEOG 380 | GIS II: Spatial Prob Solving | 4
Two (2) additional GIS courses from the following list: | 6
GEOG 205 | Business Location Decisions | 
GEOG 280 | Intro to Social Statistics | 
GEOG 412 | Geospatial Tech & Society | 
GEOG 421 | Earth Systems Modeling | 
GEOG 439 | Health Applications of GIS | 
GEOG 440 | Business Applications of GIS | 
GEOG 460 | Aerial Photo Analysis | 
GEOG 468 | Biological Modeling | 
GEOG 473 | Digital Cartography & Map Design | 
GEOG 476 | Applied GIS to Environ Studies | 
GEOG 477 | Introduction to Remote Sensing | 
GEOG 478 | Techniques of Remote Sensing | 
GEOG 479 | Advanced Topics in GIS | 
GEOG 480 | Principles of GIS | 
GEOG 489 | Programming for GIS | 
Two (2) human and/or physical geography courses: | 6
GEOG 204 | Cities of the World | 
GEOG 210 | Social & Environmental Issues | 
GEOG 215 | Resource Conflicts | 
GEOG 221 | Geographies of Global Conflict | 
GEOG 222 | Big Rivers of the World | 
GEOG 224 | Geog Patterns of Illinois | 
GEOG 287 | Environment and Society | 
GEOG 310 | Political Geography | 
GEOG 350 | Sustainability and the City | 
GEOG 356 | Sustainable Development in South Asia | 
GEOG 370 | Water Planet, Water Crisis | 
GEOG 381 | Environmental Perspectives | 
GEOG 384 | Population Geography | 
GEOG 401 | Watershed Hydrology | 
GEOG 405 | Geography Field Course | 
GEOG 406 | Fluvial Geomorphology | 
GEOG 408 | Humans and River Systems | 
GEOG 410 | Green Development | 
GEOG 436 | Biogeography | 
GEOG 438 | Geography of Health Care | 
GEOG 446 | Sustainable Planning Seminar | 
GEOG 455 | Geog of Sub-Saharan Africa | 
GEOG 465 | Transportation & Sustainability | 
GEOG 466 | Environmental Policy | 
GEOG 471 | Recent Trends in Geog Thought | 
GEOG 481 | Intl Environ Cooperation | 
GEOG 482 | Challenges of Sustainability | 
GEOG 483 | Urban Geography | 
GEOG 484 | Cities, Crime, and Space | 
GEOG 493 | Democracy and Environment | 
GEOG 496 | Climate & Social Vulnerability | 

Total hours: 120
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.