CARTOGRAPHY AND GEOGRAPHIC INFORMATION SYSTEMS, B.A.

REQUIREMENTS

UNIVERSITY GENERAL EDUCATION REQUIREMENTS

All undergraduate students at the University of Wisconsin–Madison are required to fulfill a minimum set of common university general education requirements to ensure that every graduate acquires the essential core of an undergraduate education. This core establishes a foundation for living a productive life, being a citizen of the world, appreciating aesthetic values, and engaging in lifelong learning in a continually changing world. Various schools and colleges will have requirements in addition to the requirements listed below. Consult your advisor for assistance, as needed. For additional information, see the university Undergraduate General Education Requirements (http://guide.wisc.edu/undergraduate/#requirementsforundergraduatetext) section of the Guide.

General Education

- Breadth—Humanities/Literature/Arts: 6 credits
- Breadth—Natural Science: 4 to 6 credits, consisting of one 4- or 5-credit course with a laboratory component; or two courses providing a total of 6 credits
- Breadth—Social Studies: 3 credits
- Communication Part A & Part B *
- Ethnic Studies *
- Quantitative Reasoning Part A & Part B *

* The mortarboard symbol appears before the title of any course that fulfills one of the Communication Part A or Part B, Ethnic Studies, or Quantitative Reasoning Part A or Part B requirements.

COLLEGE OF LETTERS & SCIENCE DEGREE REQUIREMENTS: BACHELOR OF ARTS (B.A.)

Students pursuing a bachelor of arts degree in the College of Letters & Science must complete all of the requirements below. The College of Letters & Science allows this major to be paired with either a bachelor of arts or a bachelor of science curriculum.

BACHELOR OF ARTS DEGREE REQUIREMENTS

Mathematics

Complete the University General Education Requirements for Quantitative Reasoning A (QR-A) and Quantitative Reasoning B (QR-B) coursework.

Foreign Language

- Complete the fourth unit of a foreign language; OR
- Complete the third unit of a foreign language and the second unit of an additional foreign language.

L&S Breadth

- 12 credits of Humanities, which must include 6 credits of literature; and
- 12 credits of Social Science; and
- 12 credits of Natural Science, which must include one 3+ credit Biological Science course and one 3+ credit Physical Science course.

Liberal Arts and Science Coursework

Complete at least 108 credits.

Depth of Intermediate/Advanced work

Complete at least 60 credits at the intermediate or advanced level.

Major

Declare and complete at least one major.

Total Credits

Complete at least 120 credits.

UW-Madison Experience

- 30 credits in residence, overall; and
- 30 credits in residence after the 86th credit.

Quality of Work

- 2.000 in all coursework at UW–Madison
- 2.000 in Intermediate/Advanced level coursework at UW–Madison

NON–L&S STUDENTS PURSUING AN L&S MAJOR

Non–L&S students who have permission from their school/college to pursue an additional major within L&S only need to fulfill the major requirements. They do not need to complete the L&S Degree Requirements above.

REQUIREMENTS FOR THE MAJOR

BREADTH

3 courses, 1 each from these areas:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GEOG 101</td>
<td>Introduction to Human Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 104</td>
<td>Introduction to Human Geography</td>
<td></td>
</tr>
<tr>
<td>GEOG 301</td>
<td>Revolutions and Social Change</td>
<td></td>
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<tr>
<td>GEOG 302</td>
<td>Economic Geography: Locational Behavior</td>
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<tr>
<td>GEOG/URB R PL 305</td>
<td>Introduction to the City</td>
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<tr>
<td>GEOG 307</td>
<td>International Migration, Health, and Human Rights</td>
<td></td>
</tr>
<tr>
<td>GEOG/CHICLA/GEN&amp;WS 308</td>
<td>Latinx Feminisms: Women’s Lives, Work, and Activism</td>
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<tr>
<td>GEOG/INTL ST 311</td>
<td>The Global Game: Soccer, Politics, and Identity</td>
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<tr>
<td>GEOG/INTL ST 315</td>
<td>Universal Basic Income: The Politics Behind a Global Movement</td>
<td></td>
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<tr>
<td>GEOG 318</td>
<td>Introduction to Geopolitics</td>
<td></td>
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<tr>
<td>GEOG 340</td>
<td>World Regions in Global Context</td>
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<tr>
<td>GEOG 342</td>
<td>Geography of Wisconsin</td>
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<tr>
<td>GEOG 355</td>
<td>Africa, South of the Sahara</td>
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<tr>
<td>GEOG 358</td>
<td>Human Geography of Southeast Asia</td>
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</tbody>
</table>
GEOG/AMER IND 410 Critical Indigenous Ecological Knowledges
GEOG/ENVIR ST/HISTORY 469 The Making of the American Landscape
GEOG 501 Space and Place: A Geography of Experience
GEOG/URB R PL 503 Researching the City: Qualitative Strategies
GEOG/GEN&WS 504 Feminist Geography: Theoretical Approaches
GEOG/URB R PL 505 Urban Spatial Patterns and Theories
GEOG 507 Waste Geographies: Politics, People, and Infrastructures
GEOG 510 Economic Geography
GEOG 511 Critical Social Theory
GEOG 518 Power, Place, Identity
GEOG 566 History of Geographic Thought

People-Environment (1 course) 3
GEOG/ENVIR ST 139 Global Environmental Issues
GEOG/ENVIR ST 309 People, Land and Food: Comparative Study of Agriculture Systems
GEOG/ATM OCN/ENVIR ST 332 Global Warming: Science and Impacts
GEOG/ENVIR ST 337 Nature, Power and Society
GEOG/BOTANY 338 Environmental Biogeography
GEOG/ENVIR ST 339 Environmental Conservation
GEOG 340 World Regions in Global Context
GEOG 344 Changing Landscapes of the American West
GEOG/AMER IND/ENVIR ST 345 Managing Nature in Native North America
GEOG 359 Australia: Environment and Society
GEOG/AMER IND 410 Critical Indigenous Ecological Knowledges
GEOG/C&SOC/ENVIR ST 434 People, Wildlife and Landscapes
GEOG/ENVIR ST 439 US Environmental Policy and Regulation
GEOG/ENVIR ST/HISTORY 460 American Environmental History
GEOG/ENVIR ST/HISTORY 469 The Making of the American Landscape
GEOG/SOIL SCI 526 Human Transformations of Earth Surface Processes
GEOG/ENVIR ST 534 Environmental Governance: Markets, States and Nature
GEOG/ENVIR ST 537 Culture and Environment
GEOG 538 The Humid Tropics: Ecology, Subsistence, and Development

GEOG/ENVIR ST 557 Development and Environment in Southeast Asia

Physical Geography (1 course) 3
GEOG/ENVIR ST 120 Introduction to the Earth System
GEOG/ENVIR ST 127 Physical Systems of the Environment
GEOG/GEOSCI 320 Geomorphology
GEOG/ATM OCN/ENVIR ST 322 Polar Regions and Their Importance in the Global Environment
GEOG 329 Landforms and Landscapes of North America
GEOG/ATM OCN/ENVIR ST 332 Global Warming: Science and Impacts
GEOG/ATM OCN/ENVIR ST/GEOSCI 335 Climatic Environments of the Past
GEOG/BOTANY 338 Environmental Biogeography
GEOG 342 Geography of Wisconsin
GEOG 344 Changing Landscapes of the American West
GEOG/GEOSCI 420 Glacial and Pleistocene Geology
GEOG 523 Advanced Paleocology: Species Responses to Past Environmental Change
GEOG/SOIL SCI 525 Soil Geomorphology
GEOG/SOIL SCI 526 Human Transformations of Earth Surface Processes
GEOG/ATM OCN/ENVIR ST 528 Past Climates and Climatic Change

Total Credits 9

SKILLS, TECHNIQUES & METHODOLOGY

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>GEOG 370</td>
<td>Introduction to Cartography</td>
<td>4</td>
</tr>
<tr>
<td>GEOG/ENVIR ST/F&amp;W ECOL/GEOSCI/LAND ARC 371</td>
<td>Introduction to Environmental Remote Sensing</td>
<td>3</td>
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<tr>
<td>GEOG/CIV ENGR/ENVIR ST 377</td>
<td>An Introduction to Geographic Information Systems</td>
<td>4</td>
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<tr>
<td>GEOG 378</td>
<td>Introduction to Geocomputing</td>
<td>4</td>
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Quantitative Methods (1 course) 3-4

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<tr>
<th>Code</th>
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<tbody>
<tr>
<td>GEOG 360</td>
<td>Quantitative Methods in Geographical Analysis (offered only in spring)</td>
</tr>
<tr>
<td>GEOG 560</td>
<td>Advanced Quantitative Methods</td>
</tr>
<tr>
<td>STAT 301</td>
<td>Introduction to Statistical Methods</td>
</tr>
<tr>
<td>STAT 324</td>
<td>Introductory Applied Statistics for Engineers</td>
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STAT 371 Introductory Applied Statistics for the Life Sciences

**Mathematics Proficiency**

Complete one of the following by Placement or by completing the course

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>MATH 112  &amp; MATH 113</td>
<td>Algebra and Trigonometry</td>
<td>6</td>
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<tr>
<td>MATH 114</td>
<td>Algebra and Trigonometry</td>
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**Total Credits** 24-25

**DEPTH**

**Code** | **Title**                                      | **Credits** |
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<tbody>
<tr>
<td>GEOG/ENVIR ST/LAND ARC/URB R PL 532</td>
<td>Applications of Geographic Information Systems in Planning</td>
<td>7-8</td>
</tr>
<tr>
<td>GEOG 572</td>
<td>Graphic Design in Cartography</td>
<td></td>
</tr>
<tr>
<td>GEOG 573</td>
<td>Advanced Geocomputing and Geospatial Big Data Analytics</td>
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<tr>
<td>GEOG 574</td>
<td>Geospatial Database Design and Development</td>
<td></td>
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<tr>
<td>GEOG 575</td>
<td>Interactive Cartography &amp; Geovisualization</td>
<td></td>
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<tr>
<td>GEOG 576</td>
<td>Geospatial Web and Mobile Programming</td>
<td></td>
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<tr>
<td>GEOG 578</td>
<td>GIS Applications</td>
<td></td>
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<tr>
<td>GEOG 579</td>
<td>GIS and Spatial Analysis</td>
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</tbody>
</table>

**Total Credits** 7-8

**CAPSTONE**

**Code** | **Title**                                      | **Credits** |
<table>
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<tbody>
<tr>
<td>Complete one of:</td>
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<td>3-6</td>
</tr>
<tr>
<td>GEOG 565</td>
<td>Colloquium for Undergraduate Majors</td>
<td></td>
</tr>
<tr>
<td>GEOG 681 &amp; GEOG 682</td>
<td>Senior Honors Thesis and Senior Honors Thesis</td>
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</tr>
<tr>
<td>GEOG 691 &amp; GEOG 692</td>
<td>Senior Thesis and Senior Thesis</td>
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**Total Credits** 3-6

**HONORS IN THE CARTOGRAPHY AND GEOGRAPHIC INFORMATION SYSTEMS MAJOR REQUIREMENTS**

To earn Honors in the Major in Cartography and GIS, students must satisfy both the requirements for the major (above) and the following additional requirements:

- Earn a 3.300 overall university GPA
- Earn a 3.300 GPA for all GEOG courses, and all courses accepted in the major
- Complete GEOG 578: GIS Applications with a grade of B or better
- Complete at least one advanced-level course OR 6 credits of honors credits in the major at the 300 level or above
- Complete a two-semester Senior Honors Thesis in GEOG 681 Senior Honors Thesis and GEOG 682 Senior Honors Thesis, a piece of original research composition, for a total of 6 credits.

**UNIVERSITY DEGREE REQUIREMENTS**

**Total Degree**

To receive a bachelor’s degree from UW–Madison, students must earn a minimum of 120 degree credits. The requirements for some programs may exceed 120 degree credits. Students should consult with their college or department advisor for information on specific credit requirements.

**Residency**

Degree candidates are required to earn a minimum of 30 credits in residence at UW–Madison. “In residence” means on the UW–Madison campus with an undergraduate degree classification. “In residence” credit also includes UW–Madison courses offered in distance or online formats and credits earned in UW–Madison Study Abroad/Study Away programs.

**Quality of Work**

Undergraduate students must maintain the minimum grade point average specified by the school, college, or academic program to remain in good academic standing. Students whose academic performance drops below these minimum thresholds will be placed on academic probation.

**RESIDENCE AND QUALITY OF WORK**

- 2.000 GPA in GEOG and major courses
- 2.000 GPA on 15 upper-level credits, taken in residence
- 15 credits in GEOG, taken on the UW–Madison campus

**HONORS IN THE MAJOR**

Students may declare Honors in the Cartography and GIS Major in consultation with the Geography undergraduate advisor.