BA IN GEOGRAPHY
(Geographic Information Systems and Analysis)

Units required for Major: 46
Total units required for BA: 120

Program Description
The Bachelor of Arts in Geography with a concentration in Geographic Information Systems and Analysis emphasizes student development of geospatial skills. Geographic Information Science, cartography, remote sensing, and quantitative methods prepare students to tackle any problem with a spatial dimension—from advising an individual firm on good locations for a new branch or supplier to modeling the spread of wildfires across a region to analyzing the global spread of diseases or new technologies.

Note:
• Every candidate must complete all of the Geography Core and one Concentration.
• Courses cannot double count for the core and the concentration.
• Students must take at least FOUR courses, with at least one each from Data Analysis and Data Output categories.

Program Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 1</td>
<td>Physical Geography: The Distribution of Natural Phenomena 1</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 2</td>
<td>Cultural Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 3</td>
<td>Introduction to Maps and Geographic Technologies</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 11</td>
<td>Laboratory in Physical Geography</td>
<td>1</td>
</tr>
<tr>
<td>GEOG 102</td>
<td>Ideas and Skills in Geography</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 118</td>
<td>Earth Transformed</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 190</td>
<td>Senior Research Seminar in Geography ✶</td>
<td>3</td>
</tr>
</tbody>
</table>

Geography Core (12 Units)
Select one course from each of the following four areas: 12

Geographic Techniques
- GEOG 105 Computer Cartography
- GEOG 107 Remote Sensing
- GEOG 109 Geographic Information Systems
- GEOG 110 Advanced Geographic Information Systems
- GEOG 150 Programming for GIS
- GEOG 151 Programming for GIS II (Geog 151 course proposal is submitted concurrently with these program changes.)
- GEOG 163 Applied GIS
- GEOG 181 Quantitative Methods in Geography
- GEOG 193A Field Geography: Urban-Metropolitan
- GEOG 193B Field Geography: Suburban-Rural

Human Geography
- GEOG 141 Geography of Economic Activity
- GEOG 143 Environmental Hazards and Society
- GEOG 145 Population Geography
- GEOG 147 Urban Geography
- GEOG 148 Urban and Regional Planning
- GEOG 149 Transportation Geography
- GEOG 163 Applied GIS

Physical Geography
- GEOG 111 Elements Of Meteorology
- GEOG 113 Climate
- GEOG 115 Biogeography
- GEOG 116 Global Climate Change
- GEOG 117 Landforms
- GEOG 161 California’s Water Resources

Regional Geography
- GEOG 121 United States and Canada
- GEOG 125 Geography Of East Asia
- GEOG 127 Geography Of Africa
- GEOG 128 Geography Of Europe
- GEOG 129A Special Topics in Regional Geography A
- GEOG 129B Special Topics in Regional Geography B
- GEOG 129C Special Topics in Regional Geography C
- GEOG 131 California

Concentrations (15 Units)
Select a concentration from the following: 15
- Geographic Information Systems and Analysis Concentration
- Human Geography Concentration
- Metropolitan Area Planning Concentration
- Physical Geography Concentration

Total Units: 46

1 Course also satisfies General Education (GE)/Graduation Requirement.

Concentration in Geographic Information Systems and Analysis (15 units)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 109</td>
<td>Geographic Information Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

Select four of the following: 12
- GEOG 105 Computer Cartography
- GEOG 107 Remote Sensing
- GEOG 110 Advanced Geographic Information Systems
- GEOG 150 Programming for GIS
- GEOG 151 Programming for GIS II
- GEOG 163 Applied GIS
- GEOG 181 Quantitative Methods in Geography
- GEOG 199 Special Problems

Total Units: 15

It is recommended that students take the following to satisfy their Geographic Techniques core area requirement:
### General Education Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>GEOG 193A</td>
<td>Field Geography: Urban-Metropolitan</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 193B</td>
<td>Field Geography: Suburban-Rural</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 193C</td>
<td>Field Geography: Physical</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Area A: Basic Subjects (9 Units)

- A1 - Oral Communication: 3 units
- A2 - Written Communication: 3 units
- A3 - Critical Thinking: 3 units

#### Area B: Physical Universe and Its Life Forms (9 Units)

- B1 - Physical Science: 2 units
- B2 - Life Forms: 3 units
- B3 - Lab (Note: Lab experience to be taken with one of the following: B1, B2 or B5): 0 units
- B4 - Math Concepts: 3 units
- B5 - Additional Course (Any B to reach 12 units) - Take upper-division course to complete Area & upper division requirements: 3 units

#### Area C: Arts and Humanities (12 Units)

- C1 - Arts: 3 units
- C2 - Humanities: 3 units
- C1/C2 - Area C Course: 3 units

#### Area D: The Individual and Society (6 Units)

- Area D Course: 3 units
- Area D Course: 3 units
- Area D Course - Take upper-division course to complete Area & upper division requirements: 3 units

#### Area E: Understanding Personal Development (3 Units)

- Area E Course: 3 units

#### Area F: Ethnic Studies (3 Units)

- Area F Course: 3 units

**Total Units:** 42

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1. To help you complete your degree in a timely manner and not take more units than absolutely necessary, there are ways to use single courses to meet more than one requirement (overlap). For further information, please visit the General Education page (http://catalog.csus.edu/colleges/academic-affairs/general-education/).

2. Required in Major; also satisfies GE.

3. Required in Major; also satisfies GE.

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### Graduation Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td></td>
<td>Graduation Requirements (required by CSU) (6 Units)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>American Institutions: U.S. History</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>American Institutions: U.S. Constitution &amp; CA Government</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Writing Intensive (WI)</td>
<td>0</td>
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</table>

**Graduation Requirements (required by Sacramento State) (12 Units)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
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<tbody>
<tr>
<td></td>
<td>English Composition II</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Race and Ethnicity in American Society (RE)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Foreign Language Proficiency Requirement</td>
<td>6</td>
</tr>
</tbody>
</table>

1. Required in Major; also satisfies GE.

2. If not satisfied before entering Sacramento State, it may be satisfied in General Education Area C2 (Humanities). “C- or better required.”

3. The alternative methods for satisfying the Foreign Language Proficiency Requirement are described here: [https://www.csus.edu/college/arts-letters/world-languages-literatures/foreign-language-requirement.html](https://www.csus.edu/college/arts-letters/world-languages-literatures/foreign-language-requirement.html)