

# GEOGRAPHY B.S.

The B.S. in Geography is designed to accommodate those students who are interested in pursuing more science-based and technical areas of study and work in the field of Geography, such as aspects involving physical geography and geospatial technologies, or environmental planning. Those pursuing a geography B.S. degree (with or without an option) must complete 6-10 additional credits (a two-course sequence) of science coursework. The classes must be selected and approved by the student and advisor as appropriate to individual student goals (e.g., B100 105N , BIOE 172N) .

## Bachelor of Science - Geography

### College Humanities & Sciences

Degree Specific Credits: 36

Required Cumulative GPA: 2.5

### Catalog Year: 2017-2018

**Note:** Depending on the courses selected, the degree requirements vary from 36 to 39 credits.

## General Education Requirements

Information regarding these requirements can be found in the General Education Section (<http://catalog.umn.edu/academics/general-education-requirements>) of the catalog.

## Summary

|                                     |              |
|-------------------------------------|--------------|
| Introduction to Geography           | 7            |
| Regional Geography Course           | 3            |
| Geographic Methods                  | 6            |
| Upper Division Systematic Geography | 9            |
| Physical Geography                  |              |
| Geography and Society               |              |
| Human Environment Interaction       |              |
| Degree Electives                    |              |
| Capstone                            | 1            |
| Upper Division Writing              | 3            |
| Science Electives                   | 6-10         |
| Biology                             |              |
| Chemistry                           |              |
| College Chemistry                   |              |
| College Physics                     |              |
| Physics with Calculus               |              |
| Statistics Course                   | 3-7          |
| Math Fundamentals                   |              |
| Advanced Math                       |              |
| <b>Total Hours</b>                  | <b>38-46</b> |

## Introduction to Geography

**Rule:** Must complete all of the following courses:

|           |                             |   |
|-----------|-----------------------------|---|
| GPHY 111N | Intro to Physical Geography | 3 |
| GPHY 112N | Intro to Phys Geography Lab | 1 |

|                    |                 |          |
|--------------------|-----------------|----------|
| GPHY 121S          | Human Geography | 3        |
| <b>Total Hours</b> |                 | <b>7</b> |

Minimum Required Grade: C-

## Regional Geography Course

|                                       |                                       |          |
|---------------------------------------|---------------------------------------|----------|
| Select at least one of the following: |                                       | 3        |
| GPHY 141S                             | Geography of World Regions            |          |
| GPHY 144                              | Glacier National Park in Winter       |          |
| GPHY 241                              | Montana                               |          |
| GPHY 245X                             | The Middle East                       |          |
| GPHY 342                              | North America                         |          |
| GPHY 344                              | Crown of the Continent                |          |
| GPHY 347                              | Regional Geography (Multiple Regions) |          |
| GPHY 348                              | Field Studies in Geography            |          |
| GPHY 444                              | High Asia                             |          |
| <b>Total Hours</b>                    |                                       | <b>3</b> |

Minimum Required Grade: C-

## Geographic Methods

**Rule:** Must complete all of the following courses

|                    |                              |          |
|--------------------|------------------------------|----------|
| GPHY 284           | Intro to GIS and Cartography | 3        |
| GPHY 385           | Field Techniques             | 3        |
| <b>Total Hours</b> |                              | <b>6</b> |

Minimum Required Grade: C-

## Upper Division Systematic Geography

**Rule:** Must complete the following subcategories of courses

Minimum Required Grade: C-

9 Total Credits Required

### Physical Geography

|                                       |                              |          |
|---------------------------------------|------------------------------|----------|
| Select at least one of the following: |                              | 3        |
| ERTH 303N                             | Weather and Climate          |          |
| GPHY 311N                             | Biogeography                 |          |
| GPHY 314                              | Global Mountain Environments |          |
| GPHY 317                              | Geomorphology                |          |
| GPHY 438                              | Mountain Field Study         |          |
| GPHY 525                              | Advanced Physical Geography  |          |
| <b>Total Hours</b>                    |                              | <b>3</b> |

Minimum Required Grade: C-

### Geography and Society

|                                       |                                   |          |
|---------------------------------------|-----------------------------------|----------|
| Select at least one of the following: |                                   | 3        |
| GPHY 323S                             | Economic Geography of Rural Areas |          |
| GPHY 421                              | Sustainable Cities                |          |
| GPHY 434                              | Food and Famine                   |          |
| <b>Total Hours</b>                    |                                   | <b>3</b> |

Minimum Required Grade: C-

### Human Environment Interaction

Select at least one of the following: 3

|             |                                 |   |
|-------------|---------------------------------|---|
| GPHY 335    | Water Policy                    |   |
| GPHY 338    | Mountains and Society           |   |
| GPHY 432    | Human Role Environmental Change |   |
| GPHY 433    | Cultural Ecology                |   |
| Total Hours |                                 | 3 |

Minimum Required Grade: C-

### Degree Electives

**Rule:** 36 Geography credits are required for the major. May require additional Geography elective credits to fulfill the major.

### Capstone

**Rule:** Seniors must complete the following course

**Note:** Seniors must enroll in GPHY 400 in fall, attend GPHY 500 in fall, and complete course requirements in spring.

|             |                    |   |
|-------------|--------------------|---|
| GPHY 400    | Geography Capstone | 1 |
| Total Hours |                    | 1 |

Minimum Required Grade: C-

### Upper Division Writing

**Rule:** Must complete 1 of the following courses

**Note:**

- GPHY 335 will also count toward the upper division core requirements
- GPHY 499 will also count toward upper division elective credits.

Other science-based writing courses (e.g. GEO 320, GEO 499, B100 470, B100 475) may be approved by the advisor.

|             |                          |   |
|-------------|--------------------------|---|
| GPHY 335    | Water Policy             | 3 |
| or GPHY 499 | senior thesis / capstone |   |
| Total Hours |                          | 3 |

Minimum Required Grade: C-

### Science Electives

**Rule:** Must complete 1 of the following science categories

**Note:** Science sequence must be approved by advisor as appropriate to individual student's goals. Different science sequences may be approved by the advisor.

6-10 Total Credits Required

### Biology

**Rule:** May complete the following courses

|             |                        |   |
|-------------|------------------------|---|
| BIOE 172N   | Introductory Ecology   | 3 |
| B100 105N   | Introduction to Botany | 3 |
| Total Hours |                        | 6 |

Minimum Required Grade: C-

### Chemistry

**Rule:** May complete the following courses

|             |  |   |
|-------------|--|---|
| CHMY 121N   | Introduction to General Chemistry        | 3 |
| CHMY 123    | Introduction to Organic and Biochemistry | 3 |
| Total Hours |  | 6 |

Minimum Required Grade: C-

### College Chemistry

**Rule:** May complete the following courses

|             |                      |   |
|-------------|----------------------|---|
| CHMY 141N   | College Chemistry I  | 4 |
| CHMY 143N   | College Chemistry II | 4 |
| Total Hours |                      | 8 |

Minimum Required Grade: C-

### College Physics

**Rule:** May complete the following courses

|             |                               |    |
|-------------|-------------------------------|----|
| PHSX 205N   | College Physics I             | 4  |
| PHSX 206N   | College Physics I Laboratory  | 1  |
| PHSX 207N   | College Physics II            | 4  |
| PHSX 208N   | College Physics II Laboratory | 1  |
| Total Hours |                               | 10 |

Minimum Required Grade: C-

### Physics with Calculus

**Rule:** May complete the following courses

|             |                              |    |
|-------------|------------------------------|----|
| PHSX 215N   | Fund of Physics w/Calc I     | 4  |
| PHSX 216N   | Physics Laboratory I w/Calc  | 1  |
| PHSX 217N   | Fund of Physics w/Calc II    | 4  |
| PHSX 218N   | Physics Laboratory II w/Calc | 1  |
| Total Hours |                              | 10 |

Minimum Required Grade: C-

### Statistics Courses

**Rule:** Must complete 1 of the following subcategories

**Note:** GenEd credits do not count towards degree credits.

**Note:** Students take a statistics course; M 115 and STAT 216, OR just one of M 162, M 171, or STAT 451. M 171 is recommended.

3-7 Total Credits Required

### Math Fundamentals

**Rule:** May complete all of the following courses

|             |                                    |   |
|-------------|------------------------------------|---|
| M 115       | Probability and Linear Mathematics | 3 |
| STAT 216    | Introduction to Statistics         | 4 |
| Total Hours |                                    | 7 |

Minimum Required Grade: C-

**Advanced Math**

**Rule:** May complete 1 of the following courses

**Note:** M 171 is recommended.

|                              |                          |     |
|------------------------------|--------------------------|-----|
| Select one of the following: | 3-4                      |     |
| M 162                        | Applied Calculus         |     |
| M 171                        | Calculus I (recommended) |     |
| STAT 451                     | Statistical Methods I    |     |
| Total Hours                  |                          | 3-4 |

Minimum Required Grade: C-