# EARTH SYSTEMS OPTION

This option is offered within the following major(s):

- Environmental Sciences - College of Earth, Ocean, and Atmospheric Sciences

Also available via Ecampus.

With the Earth Systems option, students will obtain a solid base in the sciences and they would be able to apply that base in an integrative way in order to build a strong knowledge traditionally referred to as natural history.

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<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>GEO 202</td>
<td>*EARTH SYSTEMS SCIENCE</td>
<td>4</td>
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<tr>
<td>or GEO 221</td>
<td>*ENVIRONMENTAL GEOLOGY</td>
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### Earth Systems Core

Select a minimum of 11 credits of the following:

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<tr>
<th>Code</th>
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<tbody>
<tr>
<td>GEO 201</td>
<td>*PHYSICAL GEOLOGY</td>
<td></td>
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<tr>
<td>or SOIL 205</td>
<td>SOIL SCIENCE</td>
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<tr>
<td>GEO 203</td>
<td>*EVOLUTION OF PLANET EARTH</td>
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<tr>
<td>OC 201</td>
<td>*OCEANOGRAPHY</td>
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Select one of the following:

- GEOG 323 *CLIMATOLOGY
- ATS 310 METEROLOGY

### Electives

Select credits to total greater than or = 27 from at least two categories of the following:

#### Atmosphere

- ATS 411 THERMODYNAMICS AND CLOUD MICROPHYSICS
- ATS 412 ATMOSPHERIC RADIATION
- ATS 413 ATMOSPHERIC CHEMISTRY
- ATS 420 PRINCIPLES OF CLIMATE: PHYSICS OF CLIMATE AND CLIMATE CHANGE
- ATS 421 CLIMATE MODELING
- GEO 484 INTRODUCTION TO BIOGEOCHEMISTRY

#### Earth History

- GEO 308 *GLOBAL CHANGE AND EARTH SCIENCES
- GEO 370 STRATIGRAPHY AND SEDIMENTOLOGY
- GEO 481 GLACIAL GEOLOGY
- GEO 486 QUATERNARY PALEOClimatOLogy
- GEO 488 QUATERNARY Stratigraphy of NORTH AMERICA

#### Earth’s Surface

- FE 430 WATERSHED PROCESSES
- GEO 322 SURFACE PROCESSES
- GEO 340 STRUCTURAL GEOLOGY
- GEO 432 APPLIED GEOMORPHOLOGY
- GEO 433 COASTAL GEOMORPHOLOGY
- GEO 487 HYDROGEOLOGY
- GEOG 423 SNOW HYDROLOGY

#### Oceans

- FW 434 ESTUARINE ECOLOGY
  or OC 434 ESTUARINE ECOLOGY
- OC 332 COASTAL OCEANOGRAPHY
- OC 333 OCEANS, COATS, AND PEOPLE
- OC 334 *POLAR OCEANOGRAPHY
- OC 430 PRINCIPLES OF PHYSICAL OCEANOGRAPHY
- OC 433 COASTAL AND ESTUARINE OCEANOGRAPHY
- OC 440 BIOLOGICAL OCEANOGRAPHY
- OC 450 CHEMICAL OCEANOGRAPHY
- OC 460 GEOLOGICAL OCEANOGRAPHY

#### Soils

- SOIL 366 ECOSYSTEMS OF WILDLAND SOILS
- SOIL 435 ENVIRONMENTAL SOIL PHYSICS
- SOIL 445 ENVIRONMENTAL SOIL CHEMISTRY
- SOIL 455 BIOLOGY OF SOIL ECOSYSTEMS
- SOIL 466 SOIL MORPHOLOGY AND CLASSIFICATION
- SOIL 468 SOIL LANDSCAPE ANALYSIS

#### Human-Environment Interaction

- GEO 306 *MINERALS, ENERGY, WATER, AND THE ENVIRONMENT
- GEO 307 *NATIONAL PARK GEOLOGY AND PRESERVATION
- GEOG 324 GEOGRAPHY OF LIFE: SPECIES DISTRIBUTIONS AND CONSERVATION
- GEOG 430 RESILIENCE-BASED NATURAL RESOURCE MANAGEMENT
- GEOG 450 LAND USE IN THE AMERICAN WEST
- GEOG 441 INTERNATIONAL WATER RESOURCES MANAGEMENT
- GEOG 440 WATER RESOURCES MANAGEMENT IN THE UNITED STATES
- GEOG 431 GLOBAL RESOURCES AND DEVELOPMENT

#### Methods

- GEOG 201 *FOUNDATIONS OF GEOSPATIAL SCIENCE AND GIS
- GEOG 360 GISCIENCE I: GEOGRAPHIC INFORMATION SYSTEMS AND THEORY
- GEOG 370 GEOVISUALIZATION: CARTOGRAPHY
- GEOG 480 REMOTE SENSING I: PRINCIPLES AND APPLICATIONS

**Total Hours:** 27

1 Students should select an additional course in atmosphere, hydrosphere, and geosphere from the approved list in the Environmental Sciences and Humanities core (minimum of 11 credits).

* Baccalaureate Core Course (BCC)
^ Writing Intensive Course (WIC)

Option Code: 848