

# GEOGRAPHY/ ENVIRONMENTAL STUDIES (GES)

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## GES 105 - World Regional Geography

This course provides an introduction to the regional concept, classification of major culture regions throughout the world and a description of the physiocultural character of those regions.

Credits: 3

Term(s) Typically Offered: Offered as Needed

## GES 115 - Introduction to Geospatial Technologies

Provides fundamental concepts and basic skills regarding map use and interpretation. Overview of major geospatial technologies, including geographic information systems, global positioning systems, spatial visualization, and remote sensing.

Credits: 3

Term(s) Typically Offered: Offered Fall & Spring Terms

Thematic Thread(s): Conservation, Technology & Imagination, Institutions & Human Innovations, Transfer Thread Completion Course, United States in Global Context

## GES 135 - Introduction to Environmental Problems

An introduction to some of the more crucial environmental problems and alternative solutions that are available.

Credits: 3

Term(s) Typically Offered: Offered Every Term

Thematic Thread(s): Citizenship & Social Problems, Conservation, Technology & Imagination, Transfer Thread Completion Course, United States in Global Context

## GES 139 - Foundations of Academic Discovery

Foundations of Academic Discovery serves as the entry point to the Rock Integrated Studies Program. With its strong faculty-student interaction, the course promotes intellectual inquiry, critical and creative thinking, and academic excellence. Through varied content, the course introduces students to academic discourse and information literacy while exploring topics such as diversity and inclusion and global awareness. This course will set students along the path to becoming engaged with issues and scholarship important to a 21st century education while they learn about themselves and their place in the world.

Credits: 3

Term(s) Typically Offered: Offered Fall Terms

Enrollment limited to students with a semester level of Freshman 1 or Freshman 2.

Enrollment limited to students with the ROCK STUDIES 2 STUDENT or ROCK STUDIES STUDENT attributes.

## GES 150 - The Natural Environment

An introduction to interrelationships among the physical elements of the environment, including the study of vegetation, soils and landforms.

Credits: 3

Term(s) Typically Offered: Offered Fall Terms

Enrollment is limited to students with a program in Environmental Studies or Geography.

## GES 170 - Discover Geography

An inquiry course that examines why people live differently in different parts of the world, with respect to political and economic systems, culture, demographics, and relationships with the natural world. This course introduces students to topics and methods of human geography, and enables students to apply them to addressing important global, regional, and local social issues.

Credits: 3

Term(s) Typically Offered: Offered Every Term

## GES 190 - Experimental

A unique and specifically focused course within the general purview of a department which intends to offer it on a "one time only" basis and not as a permanent part of the department's curriculum.

Credits: 1-3

Term(s) Typically Offered: Offered as Needed

## GES 195 - Workshop

A workshop is a program which is usually of short duration, narrow in scope, often non-traditional in content and format, and on a timely topic.

Credits: 1-6

Term(s) Typically Offered: Offered as Needed

## GES 198 - Selected Topics

A Selected Topics course is a normal, departmental offering which is directly related to the discipline, but because of its specialized nature, may not be able to be offered on a yearly basis by the department.

Credits: 1-3

Term(s) Typically Offered: Offered as Needed

## GES 201 - Latin America and the Caribbean

Consideration is given to physical, historical, cultural, political, and economic patterns in Latin America and the Caribbean.

Credits: 3

Term(s) Typically Offered: Offered as Needed

## GES 202 - United States and Canada

An introductory course that surveys the patterns, connections, and evolution of environments, cultures, and economies of the U.S. and Canada.

Credits: 3

Term(s) Typically Offered: Offered as Needed

## GES 204 - Post-Soviet Union

Study of the Soviet Union and Soviet-bloc nations with emphasis on economic, physical, political, and cultural aspects.

Credits: 3

Term(s) Typically Offered: Offered as Needed

## GES 205 - Cultural Geography

This course serves as an introduction to human, social and cultural geography. Course content will cover cultural landscapes and place identity, discourses and cultural interpretation of the environment, the cultural and spatial impacts of demographic and economic changes, and cultural contestation over space and place.

Credits: 3

Term(s) Typically Offered: Offered Fall Terms Odd

**GES 215 - Planning for Sustainable Communities**

An introduction to social and physical planning for rural areas, towns and cities.

Credits: 3

Term(s) Typically Offered: Offered Fall Terms

Thematic Thread(s): Cultural Literacy & Community Building, Conservation, Technology & Imagination, Transfer Thread Completion Course

**GES 220 - General Methods of Fieldwork**

A survey of how field research is done in geography, including designing a research question, data collection techniques, and qualitative and quantitative data analysis.

Prerequisite: GES 115 (may be taken concurrently)<sup>D</sup>

<sup>D</sup> Requires minimum grade of D.

Credits: 3

Term(s) Typically Offered: Offered Fall Terms

**GES 235 - Conservation**

An examination of the earth's complex resource base which places special emphasis on the geographic location of resources and on conservation/preservation practices.

Credits: 3

Term(s) Typically Offered: Offered Spring Terms

Thematic Thread(s): Citizenship & Social Problems, Conservation, Technology & Imagination, Transfer Thread Completion Course

**GES 242 - Geography of Religion**

The distribution and arrangement of world religions, giving consideration to the comparative influence of religion on the cultural landscape and on regional development.

Credits: 3

**GES 245 - Population and Resources**

Basic demographic principles and their relationship to regional development.

Credits: 3

**GES 290 - Experimental**

A unique and specifically focused course within the general purview of a department which intends to offer it on a "one time only" basis and not as a permanent part of the department's curriculum.

Credits: 1-3

Term(s) Typically Offered: Offered as Needed

**GES 295 - Workshop**

A workshop is a program which is usually of short duration, narrow in scope, often non-traditional in content and format, and on a timely topic.

Credits: 1-6

Term(s) Typically Offered: Offered as Needed

**GES 298 - Selected Topics**

A Selected Topics course is a normal, departmental offering which is directly related to the discipline, but because of its specialized nature, may not be able to be offered on a yearly basis by the department.

Credits: 1-3

Term(s) Typically Offered: Offered as Needed

**GES 301 - Geography of Rural Areas**

Analyzes the structure and primary functional patterns of rural areas, with an emphasis on agricultural and industrial land use, problems of rural development, and population shifts.

Credits: 3

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 303 - Asia**

A survey of the major regions of Asia emphasizing their physical, cultural, and political characteristics. Several countries are selected for special emphasis.

Credits: 3

Term(s) Typically Offered: Offered Spring Terms Even

Thematic Thread(s): Human Diversity & Well-Being, Transfer Thread Completion Course, United States in Global Context

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 305 - Environmental Economic Geography**

Environmental economic geography takes a geographical approach to the interface between nature and the economy, with an emphasis on patterns and trends in environmental services and resource management.

Credits: 3

Term(s) Typically Offered: Offered as Needed

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 307 - Australia**

This course will introduce students to the environments and peoples of Australia. Australia's natural environment, Aboriginal and white culture, economy, politics, and major current public issues will be covered.

Credits: 3

Term(s) Typically Offered: Offered as Needed

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 308 - Europe**

The evolution of nations, the cultural landscape, and the spatial-economic organization of Europe.

Credits: 3

Term(s) Typically Offered: Offered as Needed

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 309 - Africa**

This course surveys the patterns, connections, and evolution of environments, cultures, nations, and economies of Africa, with an emphasis on maps, regions, and images.

Credits: 3

Term(s) Typically Offered: Offered as Needed

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 310 - Urban Geography**

The course is designed to provide insights into the nature of cities and smaller urban places.

Credits: 3

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 315 - Cartography I**

Basic elements of computer-assisted thematic map design are discussed. Cartographic projects serve as a means of applying major concepts such as map projections, data classification, color theory, and qualitative/quantitative symbology. Includes a lab.

Prerequisite: GES 115<sup>D</sup>

<sup>D</sup> Requires minimum grade of D.

Credits: 3

Term(s) Typically Offered: Offered Fall Terms

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 321 - Introduction to UAS for Remote Sensing and Monitoring**

This course introduces students to Unmanned Aerial Systems and their use in acquisition of remotely sensed data. Course content will cover topics necessary for students to sit for the FAA Part 107 Commercial Remote Pilot Certification examination. Students will also be introduced to basic concepts of remote sensing and aerial imaging, UAS mission planning and spatial data processing.

Prerequisite: GES 115<sup>D</sup>

<sup>D</sup> Requires minimum grade of D.

Credits: 3

Term(s) Typically Offered: Offered Spring Terms

Students with a semester level of Freshman 1 or Freshman 2 may **not** enroll.

**GES 324 - Environmental Law and Policy**

The study of political control of the environment. Focus on the roles played by individuals and groups. Cross-listed with POLS 324.

Credits: 3

Term(s) Typically Offered: Offered Spring Terms

Thematic Thread(s): Conservation, Technology & Imagination, Institutions & Human Innovations, Transfer Thread Completion Course, United States in Global Context

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 325 - Introduction to Geographic Information Science**

This course introduces students to integrated computer tools for the capture, storage, manipulation, analysis, and printout of earth-referenced data. Computers are used to store maps, analyze maps, and produce new maps along with their attributes to address societal issues. Includes a lab.

Prerequisite: GES 115<sup>D</sup>

<sup>D</sup> Requires minimum grade of D.

Credits: 3

Term(s) Typically Offered: Offered Fall & Spring Terms

Thematic Thread(s): Transfer Thread Completion Course

Students with a semester level of Freshman 1 or Freshman 2 may **not** enroll.

**GES 330 - Political Geography**

The effects of politics on geography and the effects of geographic factors on politics.

Credits: 3

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 331 - Economic Geography**

Examines human use and economic organization of the earth.

Credits: 3

Term(s) Typically Offered: Offered Spring Terms Odd

Thematic Thread(s): Transfer Thread Completion Course

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 344 - Environmental Justice**

This course will teach students to evaluate situations as just or unjust according to well-understood principles of environmental justice. Students will apply this analysis to important environmental justice topics such as unequal distribution of environmental harms and resources, treatment of indigenous people, animal and ecosystem rights and international environmental negotiations.

Credits: 3

Term(s) Typically Offered: Offered Spring Terms Odd

Thematic Thread(s): Citizenship & Social Problems, Human Diversity & Well-Being, Transfer Thread Completion Course, United States in Global Context

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 345 - Population Analysis**

A study of the techniques of population analysis with respect to growth, distribution, fertility, migration, and other demographic characteristics. Some background in algebra or statistics.

Credits: 3

Term(s) Typically Offered: Offered Spring Terms Odd

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 355 - Earth's Changing Climate**

This course examines the interrelationship between climate and human activities. We will study the processes that control Earth's climate with a focus on the flow of energy through the Earth system and a study of the interactions between the atmosphere, the ocean, and the land surface. We will investigate climate change on variable time scales with a focus on how climate affects humans and the environment. Further, we will examine which factors influence society's decisions in response to climate change.

Credits: 3

Term(s) Typically Offered: Offered Fall Terms

Thematic Thread(s): Conservation, Technology & Imagination, Transfer Thread Completion Course, United States in Global Context

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 356 - Earth's Changing Climate Laboratory**

This course examines Earth's climate changes through an investigation of climate data and climate models. We will investigate climate change on variable time scales and in different geographic regions with a quantitative focus.

Prerequisite: GES 355 (may be taken concurrently)<sup>D</sup>

<sup>D</sup> Requires minimum grade of D.

Credits: 1

Term(s) Typically Offered: Offered Fall Terms

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

Enrollment limited to students with department of Geography, Geology & Environm.

**GES 361 - Gender and the Environment**

Gender and the Environment will explore the ways that human interaction with the natural environment is shaped by gender roles and gender inequality in cultures around the world. Topics covered will include gender differences in resource access, connections between environmental degradation and women's oppression, cultural metaphors that link nature and gender (e.g. "mother earth") and the way that gender shapes environmental movements.

Credits: 3

Term(s) Typically Offered: Offered Fall Terms Even

Thematic Thread(s): Human Diversity & Well-Being, Transfer Thread Completion Course, United States in Global Context

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 362 - Applications in Sustainability**

This course explores the history of the sustainability movement, and the current and emerging science and practices of sustainability. Students will also be introduced to the research tools and methods needed to evaluate the sustainability of energy systems, technology, the built environment and environmental regulations and policy.

Credits: 3

Term(s) Typically Offered: Offered Spring Terms

Thematic Thread(s): Citizenship & Social Problems, Conservation, Technology & Imagination, Institutions & Human Innovations, Transfer Thread Completion Course

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 363 - Energy and Society**

Students will develop a working knowledge of energy technologies and policies, and their impacts on both the environment and society. Discussions and case studies will include analysis of current and emerging energy sources and consumption.

Credits: 3

Term(s) Typically Offered: Offered as Needed

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 375 - Geography of Intolerance**

Analyzes cross-culturally the impact on resource allocation and the spatial implications of gender, racial, religious, political and class discrimination.

Credits: 3

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 390 - Experimental**

A unique and specifically focused course within the general purview of a department which intends to offer it on a "one time only" basis and not as a permanent part of the department's curriculum.

Credits: 1-3

Term(s) Typically Offered: Offered as Needed

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 395 - Workshop**

A workshop is a program which is usually of short duration, narrow in scope, often non-traditional in content and format, and on a timely topic.

Credits: 1-6

Term(s) Typically Offered: Offered as Needed

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 398 - Selected Topics**

A Selected Topics course is a normal, departmental offering which is directly related to the discipline, but because of its specialized nature, may not be able to be offered on a yearly basis by the department.

Credits: 1-3

Term(s) Typically Offered: Offered as Needed

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 410 - Remote Sensing**

Covers the electromagnetic and thermal properties of earth objects, principles and operations of sensors, and the practical applications of remote sensing. Lectures will be supplemented with exercises requiring computer processing of satellite data.

Credits: 3

Term(s) Typically Offered: Offered Fall Terms

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 415 - Cartography II**

Advanced issues and theory of cartographic design are discussed. Cartographic applications include flow maps, bivariate statistical mapping, cartograms, interactive maps, and map animation. Includes a lab.

Prerequisite: GES 315<sup>D</sup>

<sup>D</sup> Requires minimum grade of D.

Credits: 3

Term(s) Typically Offered: Offered Spring Terms Even

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 420 - Historical Geography of Anglo-America**

A study of settlement patterns, land utilization, and sequent occupancies for selected periods since 1500. A student is expected to have background in geography and American history.

Credits: 3

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 425 - Advanced Geographic Information Systems**

This course investigates and applies advanced Geographic Information Systems (GIS) techniques. Students will learn current techniques for the collection, evaluation, input, analysis, and output of spatial data with various GIS tools. Students will apply these techniques to real world problems in areas such as environmental monitoring, environmental modeling, urban planning, and economic location. Includes a lab.

Prerequisites: (GES 325<sup>D</sup> or GES 410<sup>D</sup>) and GES 315<sup>D</sup>

<sup>D</sup> Requires minimum grade of D.

Credits: 3

Term(s) Typically Offered: Offered Spring Terms Odd

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 426 - Environmental Modeling**

Environmental models quantify processes such as runoff generation, water pollution, erosion, landscape change, and change of biodiversity. In this course, these models will be applied to real-world examples. Includes a lab.

Prerequisite: GES 325<sup>D</sup>

<sup>D</sup> Requires minimum grade of D.

Credits: 3

Term(s) Typically Offered: Offered Spring Terms Even

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 435 - Preservation Planning**

A study of the American preservation movement as it relates to features of the cultural landscape. The origin and diffusion of building styles and the methods and problems associated with their preservation are emphasized.

Credits: 3

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 444 - World Environmental Cultures**

Students will explore and evaluate geographic and environmental ideas from western and non-western cultures.

Credits: 3

Term(s) Typically Offered: Offered Spring Terms Even

Thematic Thread(s): Transfer Thread Completion Course

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 445 - Regional Planning**

Deals with planning for the future of regions that are larger than any single local government. Consideration is given to economic development, land use, transportation, and other regional planning concerns. Cross-listed with PUBA 445.

Prerequisites: GES 215<sup>D</sup> or PUBA 215<sup>D</sup>

<sup>D</sup> Requires minimum grade of D.

Credits: 3

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 450 - Internship**

Supervised placement and field experience in a selected public or private agency.

Credits: 1-12

Term(s) Typically Offered: Offered as Needed

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 469 - Field Investigations in the Geosciences**

This course will provide students with the opportunity to practice the nature of fieldwork by observing, interpreting, collecting data and analyzing physical and human landscapes, and the natural, cultural and economic forces that are shaping them.

Credits: 1-3

Term(s) Typically Offered: Offered Summer Terms

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 489 - Applied Geospatial Technologies**

This course involves the application of geospatial technologies in humanities, social sciences, and natural and environmental sciences.

Credits: 3

Term(s) Typically Offered: Offered as Needed

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 490 - Independent Study**

In-depth reading and/or research with the guidance of a faculty member in an area selected by the student. Independent Study courses give students the opportunity to pursue research and/or studies that are not part of the university's traditional course offerings. Students work one on one or in small groups with faculty guidance and are typically required to submit a final paper or project as determined by the supervising professor.

Credits: 1-3

Term(s) Typically Offered: Offered as Needed

**GES 495 - Workshop**

A workshop is a program which is usually of short duration, narrow in scope, often non-traditional in content and format, and on a timely topic.

Credits: 1-6

Term(s) Typically Offered: Offered as Needed

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.

**GES 498 - Selected Topics**

A Selected Topics course is a normal, departmental offering which is directly related to the discipline, but because of its specialized nature, may not be able to be offered on a yearly basis by the department.

Credits: 1-3

Term(s) Typically Offered: Offered as Needed

Students with a semester level of Freshman 1, Freshman 2 or Sophomore 1 may **not** enroll.