

# GEOGRAPHY (GEO)

 - General Education Course

## **GEO 100** **Intro to Human Geography (CT)** **3 Credit hours**

This critical thinking course provides a systematic examination of contemporary concepts and processes of human geography in global perspective, including economics, geopolitics, culture, nationalism, urbanization, governance, agriculture, population, and migration.

**Attributes:** Critical Thinking, International, Core II Social Sciences

**Grade Mode:** Normal Grading Mode

## **GEO 101** **Physical Geography (CT)** **4 Credit hours**

Study of Earth's natural systems, including the atmosphere, landforms/soils, ecosystems/biomes, hazards, and the hydrosphere, and the interactions between them and human activities using hands-on labs, geospatial technologies, and fieldwork.

**Attributes:** Critical Thinking, Natural Sciences, Core II Natural Sciences

**Grade Mode:** Normal Grading Mode

## **GEO 101L** **Physical Geography Lab** **1 Credit hour**

Lab to accompany Physical Geography lecture exploring earth-sun relationships, maps, atmosphere, climate, weather, hydrologic cycle, the biosphere, soils, landforms, erosion, vulcanism, and rivers.

**Pre-req:** GEO 100 (may be taken concurrently).

**Concurrent PR:** GEO 100

**Attributes:** Natural Sciences, Core II Natural Sciences

**Grade Mode:** Normal Grading Mode

## **GEO 110 Basic GIS** **1 Credit hour**

Introduction to GIS concepts including GIS components, spatial and tabular data, database elements, data formats, and map design; hands-on experience with a GIS.

**Attributes:** Digital Humanities

**Grade Mode:** Normal Grading Mode

## **GEO 111 Air Photos & Satellite Imagery** **1 Credit hour**

Introduction to photogrammetry and remote sensing through the hands-on investigation of aerial photographs and satellite imagery using the latest technology.

**Attributes:** Digital Humanities

**Grade Mode:** Normal Grading Mode

## **GEO 112 Smartphone GPS** **1 Credit hour**

Principles of Global Navigation Satellite Systems (GNSS); using your smartphone for Global Positioning Systems (GPS)/GNSS orientation, and data collection.

**Attributes:** Digital Humanities

**Grade Mode:** Normal Grading Mode

## **GEO 113 Web GIS** **1 Credit hour**

Students learn to build web maps, share GIS data on the internet, and create web GIS applications.

**Attributes:** Digital Humanities

**Grade Mode:** Normal Grading Mode

## **GEO 203** **Economic Geography (CT)** **3 Credit hours**

A systematic examination of world economic geography with a focus on population, agriculture, transportation, land use, urbanization, industry, energy, and the environment.

**Attributes:** Critical Thinking, International, Core II Social Sciences

**Grade Mode:** Normal Grading Mode

## **GEO 206** **Geography West Virginia** **3 Credit hours**

A survey of the geography of West Virginia including landforms, climate, settlement patterns, population, economics, resources, politics, and environmental changes.

**Attributes:** American Institutions, Core II Social Sciences

**Grade Mode:** Normal Grading Mode

## **GEO 207** **Biblical Geography** **3 Credit hours**

Students explore the physical and human geography of ancient Palestine and assess how geography informs our understanding of people, events, and places described by Jewish and Christian scriptures.

**Attributes:** Core II Humanities

**Grade Mode:** Normal Grading Mode

## **GEO 222** **Global Environment Issues (CT)** **3 Credit hours**

Environmental issues have great emotional, political, and economic significance. The dynamics of global environmental problems, their complex interactions, and effects on potential stakeholders will be examined at the international scale.

**Attributes:** Critical Thinking, International, Core II Social Sciences

**Grade Mode:** Normal Grading Mode

## **GEO 223 Mapping Our World** **4 Credit hours**

Students use GIS, GPS, Remote Sensing, and Drones for map data collection, map creation, map analysis, and to investigate how these tools function for studying human and physical Earth systems.

**Grade Mode:** Normal Grading Mode

## **GEO 230** **Intro to Meteorology (CT)** **4 Credit hours**

Introduction to the composition of the atmosphere and weather phenomena, including thunderstorms, tornadoes, and hurricanes.

**Attributes:** Critical Thinking, Core II Natural Sciences

**Grade Mode:** Normal Grading Mode

## **GEO 256 Remote Pilot Ground School** **1 Credit hour**

This course provides the fundamental knowledge to take the FAA Part 107 Remote Pilot exam and how to safely operate as a remote pilot-in-command (RPIC).

**Grade Mode:** Normal Grading Mode

## **GEO 280 Special Topics** **1-4 Credit hours**

**Grade Mode:** Normal Grading Mode

## **GEO 281 Special Topics** **1-4 Credit hours**

**Grade Mode:** Normal Grading Mode

## **GEO 282 Special Topics** **1-4 Credit hours**

**Grade Mode:** Normal Grading Mode

## **GEO 283 Special Topics** **1-4 Credit hours**

**Grade Mode:** Normal Grading Mode

## **GEO 300 Methods in Geography** **3 Credit hours**

Provides an introduction to research methods in geography. Topics addressed include: data sources; sampling; data collection, storage, and management; descriptive measures and data visualization techniques; qualitative and quantitative analysis.

**Pre-req:** STA 225 with a minimum grade of D or STA 150 with a minimum grade of D or STA 150B with a minimum grade of D or MGT 218 with a minimum grade of D or PSY 223 with a minimum grade of D or SOC 345 with a minimum grade of D or GEO 440 with a minimum grade of D.

**Grade Mode:** Normal Grading Mode

- GEO 305 🌳 Geog of USA & Canada** **3 Credit hours**  
 Survey of physical, historical, population, economic, political, cultural, and regional geographies of Canada and the United States, including an analysis of the multi-cultural nature of the societies.  
**Attributes:** American Institutions, Multicultural  
**Grade Mode:** Normal Grading Mode
- GEO 317 🌳 World Regional Geography** **3 Credit hours**  
 World regions examined using a synthesis of physical and human geographical themes including environment, culture, landscape, climate, landforms, globalization, population patterns, urbanization, economies, and political geography.  
**Attributes:** International  
**Grade Mode:** Normal Grading Mode
- GEO 326 Geographic Information Systems** **4 Credit hours**  
 Geographic Information Systems (GIS) principles, techniques, and applications for the social and natural sciences, emphasizing core geographic concepts through an integrated lecture and lab format.  
**Grade Mode:** Normal Grading Mode
- GEO 355 Aviation Weather** **3 Credit hours**  
 A study of atmospheric conditions on aeronautical operations. Topics include atmospheric properties, aviation hazards including thunderstorms, wind shear, turbulence, and icing, and weather flight resources.  
**Pre-req:** GEO 230 with a minimum grade of D.  
**Grade Mode:** Normal Grading Mode
- GEO 402 Geography of Appalachia** **3 Credit hours**  
 A study of the geography of Appalachia, including landforms, climate, settlement patterns, population, economics, resources, politics, and environmental changes.  
**Attributes:** American Institutions  
**Grade Mode:** Normal Grading Mode
- GEO 404 🌳 Geography of Europe** **3 Credit hours**  
 An examination of the geography of Europe focusing on contemporary issues, including climate, culture, economics, environmental change, everyday life, international relations landforms, language, politics, population, religion, and urbanization.  
**Attributes:** International  
**Grade Mode:** Normal Grading Mode
- GEO 405 🌳 Political Geography** **3 Credit hours**  
 A systematic and regional survey of world political problems and international relations stressing current geopolitical conflicts.  
**Attributes:** International  
**Grade Mode:** Normal Grading Mode
- GEO 406 🌳 Population Geography** **3 Credit hours**  
 An examination of contemporary patterns, processes, and problems of population geography in global perspective, including fertility, mortality, demographic change, migration, malnutrition, urbanization, natural resource sustainability, and future projections.  
**Attributes:** International  
**Grade Mode:** Normal Grading Mode
- GEO 408 🌳 Geog of South & Middle America** **3 Credit hours**  
 A study of settlement, transportation, manufacturing, agriculture, geopolitics, and natural resources of South and Middle American countries.  
**Attributes:** International  
**Grade Mode:** Normal Grading Mode
- GEO 410 Urban Geography** **3 Credit hours**  
 Study of the evolution, morphology and land use, functions, and problems of urban areas, with emphasis on governance, planning, and the social and environmental impacts of urbanization.  
**Attributes:** American Institutions  
**Grade Mode:** Normal Grading Mode
- GEO 411 Medical Geography** **3 Credit hours**  
 An examination of contemporary issues and problems in health and medical geography, including the spatial aspects of global health, health care policy, and disease origins, diffusion, and ecology.  
**Grade Mode:** Normal Grading Mode
- GEO 414 Principles Methods of Planning** **3 Credit hours**  
 An examination of contemporary planning focusing on principles, methods, techniques, and tools; and the political, legal, and ethical contexts of planning.  
**Attributes:** American Institutions  
**Grade Mode:** Normal Grading Mode
- GEO 418 Geography For Educators** **3 Credit hours**  
 A study of geographic concepts, methods, and technologies essential for effective teaching of geographic content for K-12 social studies teachers and college educators.  
**Grade Mode:** Normal Grading Mode
- GEO 422 🌳 Environmental Geography** **3 Credit hours**  
**Attributes:** International  
**Grade Mode:** Normal Grading Mode
- GEO 423 Cartography & GIS** **3 Credit hours**  
 This course is an introduction to cartography and is the cornerstone of Geographic Information Science. In this class you will learn basic map design, map interpretation and appreciation. We will explore the nature of spatial data, and learn what maps can and cannot represent. We will study maps as a data source for Geographic Information Systems, and as a graphic tool for scientific visualizations.  
**Grade Mode:** Normal Grading Mode
- GEO 424 Transportation Geography** **3 Credit hours**  
 A geographic analysis of transportation and its spatial organization. Concepts, models, and analytical methods related to traffic demand, network configuration, and allocation of transport facilities are covered.  
**Grade Mode:** Normal Grading Mode
- GEO 425 Climatology** **4 Credit hours**  
 A study of elements of weather and climate, methods of climatic classification, and the distribution and characteristics of world climate regions.  
**Grade Mode:** Normal Grading Mode
- GEO 426 Principles of GIS** **4 Credit hours**  
 Introduction to Geographic Information Systems (GIS) principles, techniques, and applications for the social and natural sciences with emphasis on foundational geographic principles in a lecture/lab format.  
**Attributes:** Digital Humanities  
**Grade Mode:** Normal Grading Mode

<p><b>GEO 427 Programming GIS</b> <b>4 Credit hours</b>                  Students automate GIS analyses and workflows by building repeatable models, programming with Python, and using other concepts and techniques within both desktop and web GIS applications.  <b>Pre-req:</b> GEO 423 with a minimum grade of D or GEO 426 with a minimum grade of D or GEO 429 with a minimum grade of D or GEO 430 with a minimum grade of D or NRRM 423 with a minimum grade of D or NRRM 433 with a minimum grade of D.  <b>Grade Mode:</b> Normal Grading Mode</p>	<p><b>GEO 480 Special Topics</b> <b>1-4 Credit hours</b>  <b>Grade Mode:</b> Normal Grading Mode</p>
<p><b>GEO 429 GIS Location Analytics</b> <b>3 Credit hours</b>                  This course explores how Geographic Information Systems (GIS) are used in business for market analysis, site selection, logistics, and data-driven decision-making.  <b>Grade Mode:</b> Normal Grading Mode</p>	<p><b>GEO 481 Special Topics</b> <b>1-4 Credit hours</b>  <b>Grade Mode:</b> Normal Grading Mode</p>
<p><b>GEO 430 Environmental Raster GIS</b> <b>4 Credit hours</b>                  Environmental Applications of GIS raster analysis, including local, neighborhood, and zonal operations, terrain analysis, distance modeling, and surface interpolation, data collection and input, and advanced spatial analysis using GIS.  <b>Pre-req:</b> GEO 426 or GEO 429 or IST 423.  <b>Grade Mode:</b> Normal Grading Mode</p>	<p><b>GEO 482 Special Topics</b> <b>1-4 Credit hours</b>  <b>Grade Mode:</b> Normal Grading Mode</p>
<p><b>GEO 431 Remote Sensing &amp; Photogram</b> <b>4 Credit hours</b>                  Scientific study of the earth using images and data captured using satellite- or aircraft-borne sensors, with emphasis on issues of acquisition, photogrammetric interpretation, spatial analysis and application.  <b>Pre-req:</b> GEO 426 with a minimum grade of D or GEO 429 with a minimum grade of D or GEO 430 with a minimum grade of D or IST 423 with a minimum grade of D.  <b>Grade Mode:</b> Normal Grading Mode</p>	<p><b>GEO 483 Special Topics</b> <b>1-4 Credit hours</b>  <b>Grade Mode:</b> Normal Grading Mode</p>
<p><b>GEO 434 Floods Hazards and GIS</b> <b>3 Credit hours</b>                  Application of principles of flood hazards preparation, disaster management, and mitigation using Geographic Information Systems (GIS).  <b>Grade Mode:</b> Normal Grading Mode</p>	<p><b>GEO 485 Independent Study</b> <b>1-4 Credit hours</b>  <b>Attributes:</b> No Textbook Required  <b>Grade Mode:</b> Normal Grading Mode</p>
<p><b>GEO 440 Spatial Statistics using GIS</b> <b>4 Credit hours</b>                  This course equips students with the skills to understand, apply, and critically evaluate geostatistical methods in GIS, emphasizing spatial data analysis, model development, visualization, and real-world problem-solving.  <b>Pre-req:</b> GEO 426 with a minimum grade of C or GEO 423 with a minimum grade of C or NRE 423 with a minimum grade of C.  <b>Grade Mode:</b> Normal Grading Mode</p>	<p><b>GEO 486 Independent Study</b> <b>1-4 Credit hours</b>  <b>Attributes:</b> No Textbook Required  <b>Grade Mode:</b> Normal Grading Mode</p>
<p><b>GEO 450 Extreme Weather</b> <b>4 Credit hours</b>                  Basics of extreme weather phenomena including hurricanes, tornadoes, floods, droughts, blizzards, and how to mitigate the impacts.  <b>Grade Mode:</b> Normal Grading Mode</p>	<p><b>GEO 487 Independent Study</b> <b>1-4 Credit hours</b>  <b>Grade Mode:</b> Normal Grading Mode</p>
<p><b>GEO 454 Drones: Remote Sensing &amp; GIS</b> <b>3 Credit hours</b>                  Learn FAA rules and safety procedures; prepare for Remote Pilot licensing exam; operate drones to collect remote sensing data; process imagery for analysis; integrate sUAS imagery with existing GIS data.  <b>Grade Mode:</b> Normal Grading Mode</p>	<p><b>GEO 488 Independent Study</b> <b>1-4 Credit hours</b>  <b>Grade Mode:</b> Normal Grading Mode</p>
<p><b>GEO 460 Weather Analysis</b> <b>4 Credit hours</b>                  Introduction to reading weather maps and meteorological analysis techniques including satellite and radar image interpretation and numerical weather prediction.  <b>Grade Mode:</b> Normal Grading Mode</p>	<p><b>GEO 490 Internship</b> <b>1-6 Credit hours</b>                  Cooperative learning experience with regional employer/government agency.  <b>Attributes:</b> No Textbook Required, Onsite Learning Experience  <b>Grade Mode:</b> Credit/No Credit Grade Only</p>
	<p><b>GEO 498 Senior Capstone</b> <b>2 Credit hours</b>                  This senior capstone course combines research methods, data collection, and analysis to produce original research on questions and problems in geography. Par I: Pilot Project.  <b>Pre-req:</b> GEO 300 with a minimum grade of D and (GEO 423 with a minimum grade of D or GEO 426 with a minimum grade of D).  <b>Attributes:</b> Capstone Course  <b>Grade Mode:</b> Normal Grading Mode</p>
	<p><b>GEO 499 Senior Capstone II</b> <b>1-3 Credit hours</b>                  This senior capstone course combines research methods, data collection, and analysis to produce original research on questions and problems in geography. Part II.  <b>Pre-req:</b> GEO 426 with a minimum grade of D and (MTH 225 with a minimum grade of D or GEO 440 with a minimum grade of D or MGT 218 with a minimum grade of D or PSY 223 with a minimum grade of D or SOC 345 with a minimum grade of D or ANT 301 with a minimum grade of D or EDF 417 with a minimum grade of D).  <b>Attributes:</b> American Institutions, Capstone Course  <b>Grade Mode:</b> Normal Grading Mode</p>