# GEO: GEOGRAPHY AND PLANNING

## Courses

**GEO 101. World Geography. 3 Credits.**
The scope of geography and understanding of the world's regions generated by it. Human society is examined in a frame of spatial, environmental, and resource factors. Map skills and other 'tools' of geography are introduced.
Gen Ed Attribute: Behavioral & Social Science, Global Awareness Pathway
Distance education offering may be available.

**GEO 102. Physical Geography. 3 Credits.**
The study of basic principles of physical geography and of relationships between components of the total earth environment.

**GEO 103. Human Geography. 3 Credits.**
An inquiry into the theoretical and applied approaches to the study of human spatial behavior and the distribution of social problems.
Gen Ed Attribute: Behavioral & Social Science, Global Awareness Pathway
Distance education offering may be available.

**GEO 104. Introduction to Geospatial Technology and Analytics. 3 Credits.**
This course develops critical thinking skills through the exploration of the fundamental components of data analytics in terms of spatial data and geospatial technologies. This includes the basic concepts and skills related to the 3 core areas of analytics, 1) data, 2) analysis, and 3) visualization. Data structures and skills are examined within the context of Geographic Information Systems (GIS). Spreadsheets, database tools, GIS software, and geospatial technology are used to capture, manage, and store spatial data. Analysis tools, such as spreadsheet functions, scripts, and GIS software are used to investigate data sets related to discipline-specific projects. Geovisualization of results are communicated using map applications, dash boards, and story maps.
Gen Ed Attribute: Digital Literacy Pathway, Science Distributive
Distance education offering may be available.

**GEO 199. Geography and Planning Transfer Credits. 1-10 Credits.**
Transfer Credits
Repeatable for credit.

**GEO 200. Global Cities. 3 Credits.**
This course introduces students to historical and current spatial patterns within global cities. This class will discuss the major concepts of urban development and growth, globalization, and city systems using lectures, class discussion, and videos. The goal of the course is to provide the students with an understanding of the basic principles of geography and apply those principles to the study of cities across the globe. The course emphasizes the environmental and human characteristics that make cities distinctive collectively and individually.
Gen Ed Attribute: Behavioral & Social Science
Distance education offering may be available.

**GEO 204. Introduction to Urban Studies. 3 Credits.**
An examination of the breadth of urban studies from the perspectives of many social science disciplines. Philadelphia is emphasized as an object of perception, as a place of life and livelihood, and as an example of continual change in the urban environment.
Gen Ed Attribute: Diverse Community(select both), Interdisciplinary Requirement
Distance education offering may be available.

**GEO 213. GIS for Social Justice. 3 Credits.**
In this course, students will apply an ethical lens to explore maps, Geographic Information Systems (GIS), and other location-enabled technologies, with an eye towards (1) understanding the ways that they have been used (and abused) to promote inequality and (2) examining recent efforts to use GIS to combat this past and promote social justice. This course will combine readings and discussion with GIS lab activities that engage students in map-making to promote social change. Students will ultimately focus on the questions "What does justice look like?" and "How can GIS help us get there?" This is an introductory course with hands-on technology experience.
Gen Ed Attribute: Ethics Requirement

**GEO 215. GIS for Criminal Justice Careers. 3 Credits.**
A course in crime mapping and the analysis of maps of crime patterns, police services, locations of criminal incidents, offenders' geographical behaviors, and spatial trends in crime.
Equivalent courses: CRJ 215

**GEO 225. Introduction to Maps and Remote Sensing. 3 Credits.**
Introduction to mapping and remote sensing. Thorough exposure to grid coordinate systems, representative fractions/scale, map projections, and mapping systems. Also, aerial photographs, digital orthophotos, satellite images, and computers as tools.

**GEO 230. Environmental Conservation and Sustainability. 3 Credits.**
An inquiry into the problems of resources protection, management and sustainability. Emphasis is placed on the United States.
Gen Ed Attribute: Behavioral & Social Science, Sustainability Pathway
Distance education offering may be available.

**GEO 235. Geography of Agriculture, Food & Sustainability. 3 Credits.**
Human beings eat food daily and this necessity has led to conversion of half of the Earth's land surface to agricultural use. This course introduces students to the spatial patterns of agricultural systems on the planet, the physical geography related to them. Students will investigate the impacts of modern agriculture on the environment, and human culture and health. This will be followed by an introduction to sustainable alternatives including local small scale organic agriculture, urban gardening, and resilient diverse food cropping systems. Students will choose a region of the world to study sustainable agricultural systems and prepare a regional food dish to share with the class.
Gen Ed Attribute: Behavioral & Social Science, Sustainability Pathway
Distance education offering may be available.
Equivalent courses: GEO 205

**GEO 301. Geography of United States and Canada. 3 Credits.**
An examination of the complexity and diversity of the physical and human landscapes of the U.S. and Canada. Both rural and urban geography are studied with an emphasis on recent geographic changes of influence: such as the shift from an emphasis on production to one on service and consumption, the growing importance of cities, and increasing racial and ethnic diversity.

**GEO 302. Geography of Latin America. 3 Credits.**
Central and South America are studied with emphasis on geographic understanding of the major sources of change in recent times. The course focuses on selected individual countries in addition to presentation of the region as a whole.
Gen Ed Attribute: Spanish CC (select both)
Distance education offering may be available.

**GEO 303. Geography of Europe. 3 Credits.**
A survey course focusing on the regional geography of Europe. The course includes and examination of the physical environment, cultural traditions, lifestyles, economies, urban environment and political change throughout the region.
Gen Ed Attribute: FRA/Franco Area CC (SLCT both), Germany CC (select both), Italian CC (Select both)
Distance education offering may be available.

**GEO 304. Geography of Asia. 3 Credits.**
This course is a survey course focusing on the geography of Asia. This course utilizes a systematic approach to understanding Asia's geography and includes an examination of the physical environment, the cultural traditions, lifestyles, economies, development, and urban environment throughout the Asia region. The course focuses on the regions of South, Central, East, and Southeast Asia. Russia and the eastern countries of the former Soviet Union are also covered.
Gen Ed Attribute: RUS/East Europe CC (SLCT both)

**GEO 307. Fundamentals of Unmanned Aerial Systems and Image Analysis. 3 Credits.**
This course prepares students with essential understanding and skills related to the appropriate and legal use of UAS systems to plan and perform drone-related missions to properly collect, manage, analyze, and visualize imagery data. Basic FAA UAS flight and safety procedures are studied. Students will become familiar with basic drone components, operations, and use for data acquisition. The course covers the use of GIS and flight management software for flight planning, image processing, and visualization. Image classification and analysis assignments include the use of basic Machine Learning modules for supervised and unsupervised image classification and object extraction. This course will prepare students to take the FAA Part 107 (b) Small Unmanned Aircraft Systems License exam. Course materials and assignments will also prepare students to meet emerging UAS workforce needs.

**GEO 310. Population Geography. 3 Credits.**
This course examines the processes of population change (fertility, mortality, health, and migration) and the changes in population distribution and composition from the international to the local scale. In addition to a substantive study of these topics, students are introduced to the use of primary data sources, such as the US Census for demographic description and policy recommendations.
Gen Ed Attribute: Writing Emphasis (select both)

**GEO 312. Urban Geography. 3 Credits.**
Analysis of patterns, processes, and consequences of urban growth and development. Theory of systems, size, spacing, and functions of cities. Students will conduct outside analysis using real data.
Gen Ed Attribute: Diverse Community(select both)

**GEO 316. Planning for Resilient Communities and Natural Disasters. 3 Credits.**
This course will focus on urban planning practices that help mitigate the impacts of various disasters to make resilient cities. It will provide students with the capacity to develop planning and public service skills to understand, diagnose and address causes, consequences, and mitigation and adaptation measures for a wide variety of emergencies and disasters. The course is both international and place-based in scope, with an emphasis on identifying best practices to help local communities survive the impact of major disasters. Geographic Information Systems will be used to understand the spatial patterns and to identify areas of high risk and vulnerability to natural disasters.
Equivalent courses: PLN 316

**GEO 318. Economic Geography. 3 Credits.**
This course is concerned with the spatial patterns of economic activities, including production, consumption, and settlement. It provides an understanding of their location and the processes of change. The course is both international and place-based in scope, with an emphasis on economic concepts and the global economy, and the local impacts of global economic forces, as well as the role that the local public sector plays in generating economic development (jobs, employment, and tax base).
Distance education offering may be available.

**GEO 324. Intro to Geographic Information Systems. 3 Credits.**
This course reviews the principles of cartography and geographic information systems (GIS.) It is also a study of how GIS software is used to enhance the decision-making process. Using ESRI's ArcGIS software, students will add demographic, environmental, political, economic, and other types of data to computerized maps.
Distance education offering may be available.

**GEO 325. Intro Business GIS. 3 Credits.**
This course provides a conceptual overview of geographical information systems as well as hands-on experience of software systems used in developing business management and marketing strategies. Attention is focused on using GIS technology as an analysis tool to improve decision making. Designed primarily for marketing majors.
Distance education offering may be available.

**GEO 326. Quantitative Analysis in Geography and Planning. 3 Credits.**
Applications of basic statistical techniques to problems of spatial significance, emphasizing the adaptation of technique to problem, and the understanding and interpretation of specific analytical methods as applied to real-world situations.
GEO 326 Prerequisite: Successful completion of MAT 103, MAT 113, MAT 115, MAT 121, MAT 131, MAT 143, MAT 161, or MAT 199, with minimum grades of D-.
Equivalent courses: PLN 326

**GEO 328. Computer Cartography. 3 Credits.**
This course provides an overview of a variety of computer mapping programs and hands-on experience utilizing those programs. The course is structured to develop design skills related to the effective creation of maps. Graphic techniques are emphasized that relate to the effective display and communication of spatial phenomena.

**GEO 331. Transportation Planning. 3 Credits.**
Transportation planning is a key component of our communities and regions. This course addresses the various components of the transportation system of an urban area and the planning processes to provide transportation facilities as integral elements of the urban community. The primary geographical focus is the metropolitan area. The student will consider the various modes of the transportation system: automobile, rail, mass transit, air, water, bikeways and pedestrian components. Each mode is addressed in terms of systems elements: governance, financing, the planning process, environmental aspects and sustainability. The course is appropriate for the student new to community planning as well as the student who has focused interest in transportation planning and considerations it encompasses. The course serves as a base for career building in community planning; transportation planning; or serving as a base of knowledge for the informed citizen and user of the transportation system in a sustainable manner.
Equivalent courses: PLN 331

**GEO 332. Environmental Crises. 3 Credits.**
The nature and dimensions of environmental problems with an emphasis on endangered life-support systems. Aspects of natural and social environment systems and their mutual interrelationships.

**GEO 333. Sustainable Cities. 3 Credits.**
This course will explore the economic, social, and environmental dimensions of sustainable development and how they have been applied to urban development in the quest to achieve the UN Sustainable Development Goal of making cities "inclusive, safe, resilient and sustainable."
Gen Ed Attribute: Speaking Emphasis, Sustainability Pathway

**GEO 334. Sustainable Living. 3 Credits.**
Practical solutions and innovative thinking in how students can adopt a more sustainable lifestyle personally and professionally. Three interconnected objectives of sustainability- economic vitality, environmental integrity, and social equity- will serve as core themes in the course.
Distance education offering may be available.

**GEO 336. Environmental Planning. 3 Credits.**
Introduction to the concepts and tools of environmental planning, which include landscape form and function in planning. Applications to local and regional issues are stressed.
Equivalent courses: PLN 336

**GEO 338. Environmental Application of Geographic Information Systems (GIS). 3 Credits.**
This course reviews the principles of cartography and GIS in terms of environmental applications. Using ESRI's and ArcGIS software, students will add environmental, political, economic, and other types of data to computerized maps to explore environmental analysis. These data will then be spatially examined and manipulated to review the process of mapmaking and decision-making.

**GEO 341. Landscape Ecology. 3 Credits.**
The study of contemporary geographical patterns of plants and animals, and the overall processes which influence landscape development and characteristics, such as climatic and geomorphic events, and anthropogenic activities.

**GEO 352. Geopolitics. 3 Credits.**
A study of the casual relations between geographical phenomena and political or military power.

**GEO 354. Housing and Planning in America. 3 Credits.**
This course provides an overview of the physical, social, economic, and political forces that shape current housing conditions of the United States. The course introduces key concepts and institutions that influence the production, distribution, and maintenance of housing in the U.S. and other select countries. The Philadelphia metropolitan area is emphasized as a case study for understanding the implications of present and future housing plans, geography, and policies in the U.S.
Distance education offering may be available.
Equivalent courses: PLN 354

**GEO 400. Senior Seminar In Geography. 3 Credits.**
The study of historical and contemporary trends in geography; the design, preparation, and defense of a research proposal.
Gen Ed Attribute: Speaking Emphasis, Writing Emphasis (select both)

**GEO 401. Internet Mapping. 3 Credits.**
This course reviews principles and applications of cartography and geographic information systems (GIS) in terms of internet and mobile mapping technologies. Web-distributed maps, internet map services, navigation/Global Positioning Systems (GPS) and cell phone based applications are examined through the use of ArcGIS Internet map server, Google Earth, Google APIs and cell phone applications.
GEO 401 Prerequisite: Successful completion of GEO 225 with minimum grade of D-.

**GEO 402. Topical Seminar. 3 Credits.**
Intensive examination of a selected area of study in the field of geography. Topics will be announced at the time of offering. Course may be taken more than once when different topics are presented.
Repeatable for credit.

**GEO 403. Planning and Design. 3 Credits.**
Selected experiences designed to assist the student (either as an individual or as a member of a group) in developing proficiency in information-providing techniques.
Equivalent courses: PLN 403

**GEO 404. Senior Project in Geography. 3 Credits.**
The execution of the research proposal (designed in GEO 400) as an acceptable departmental senior research paper.
GEO 404 Prerequisite: Successful completion of GEO 400 with minimum grade of D-.

**GEO 410. Independent Study in Geography. 3 Credits.**
Research projects, reports, and readings in geography.
Repeatable for credit.

**GEO 415. Internship in Geography and Planning. 1-12 Credits.**
Practical job experience in applying geographic theory, executing substantive research, and engaging in community service in selected off-campus situations. Open only to upper-division B.S. majors and minors in geography/planning with permission of department chairperson.
Repeatable for credit.

**GEO 424. Geographic Information Systems Application. 3 Credits.**
A course to advance the student's knowledge of the design and implementation of geographic information systems.
GEO 424 Prerequisite: Successful completion of GEO 324 with minimum grade of D-.

**GEO 425. Business GIS Applications. 3 Credits.**
Intensive use of Geographical Information Systems (GIS) in the business environment to aid in better sales and marketing decisions. Course provides a conceptual overview of database management systems from MIS to geodatabases and their integration with a GIS. Case studies draw numerous examples from various businesses. Student tutorials provide hands-on opportunities for students to experience and learn how to use GIS within a business problem-solving framework.
GEO 425 Prerequisite: Successful completion of GEO 325 with minimum grade of D-.

**GEO 427. Geodatabase System. 3 Credits.**
The course teaches students the concepts and design of geographic database systems in the process of geographic analysis.
Distance education offering may be available.