

GEOGRAPHY, SUSTAINABILITY, COMMUNITY AND URBAN STUDIES (GSCU)

GSCU 1000E. Introduction to Geography. (3 Credits)

Principles, concepts and methods of modern geography are developed both in general form and specific case studies. Examples pertaining to both the human and physical environment will be discussed. Formerly offered as GEOG 1000E.

Skill Codes: COMP: Environmental Literacy

Content Areas: CA2: Social Science

Topics of Inquiry: TOI4: Environmental Literacy, TOI5: Indiv Values Soc Inst

GSCU 1070E. Natural Disasters and Environmental Change. (3 Credits)

(Also offered as EARTH 1070E.) Climate change, global warming, natural hazards, earth surface processes, and the impact these have on human populations now and in the past. Students who complete both EARTH 1070 and EARTH 1052 may request that EARTH 1070 be converted to a CA 3 Laboratory course. Formerly offered as GEOG 1070E.

Enrollment Requirements: Not open for credit to students who have passed EARTH 1010, 1050, 1051, 1055.

Skill Codes: COMP: Environmental Literacy

Content Areas: CA3: Science & Technology

Topics of Inquiry: TOI4: Environmental Literacy, TOI6: Science & Empirical Inq

GSCU 1100. Global Urbanization. (3 Credits)

A broad discussion of the role and structure of cities around the world from the first cities to contemporary times. Special emphasis will be placed on the mechanisms by which cities and ideas about them have been diffused from one place to another and on the changing forces that have shaped cities over time and across space. Formerly offered as GEOG 1200 and URBN 1200.

Content Areas: CA1: Arts & Humanities, CA4INT: Div & Multi - Intl

Topics of Inquiry: TOI2: Cultural Dimen Human Exp, TOI3: Div, Equity, Soc Just

GSCU 1130. Exploring Your Community. (3 Credits)

Various aspects of urban and community life emphasizing the interplay of social justice, diversity, individual and social well being. Explores theories, concepts, and methods in community studies. May contain a service learning component. Formerly offered as URBN 1300.

Content Areas: CA2: Social Science, CA4: Diversity & Multicultural

Topics of Inquiry: TOI3: Div, Equity, Soc Just, TOI5: Indiv Values Soc Inst

GSCU 1130W. Exploring Your Community. (3 Credits)

Various aspects of urban and community life emphasizing the interplay of social justice, diversity, individual and social well being. Explores theories, concepts, and methods in community studies. May contain a service learning component. Formerly offered as URBN 1300W.

Enrollment Requirements: ENGL 1007 or 1010 or 1011.

Skill Codes: COMP: Writing Competency

Content Areas: CA2: Social Science, CA4: Diversity & Multicultural

Topics of Inquiry: TOI3: Div, Equity, Soc Just, TOI5: Indiv Values Soc Inst

GSCU 1200. Site and Sound: Understanding Cities Through Popular Music. (3 Credits)

Examination of urban issues and trends like race, gender, class, sexuality, place attachment, politics, economics, environmentalism, and social activism by interpreting the lyrics and videos of popular music. Formerly offered as URBN 1400.

Content Areas: CA2: Social Science, CA4: Diversity & Multicultural

Topics of Inquiry: TOI3: Div, Equity, Soc Just, TOI5: Indiv Values Soc Inst

GSCU 1200W. Site and Sound: Understanding Cities Through Popular Music. (3 Credits)

Examination of urban issues and trends like race, gender, class, sexuality, place attachment, politics, economics, environmentalism, and social activism by interpreting the lyrics and videos of popular music. Formerly offered as URBN 1400W.

Enrollment Requirements: ENGL 1007 or 1010 or 1011.

Skill Codes: COMP: Writing Competency

Content Areas: CA2: Social Science, CA4: Diversity & Multicultural

Topics of Inquiry: TOI3: Div, Equity, Soc Just, TOI5: Indiv Values Soc Inst

GSCU 1300E. Climate, Weather, and the Environment. (3 Credits)

Interactions between weather and climate and the human and natural environment. Emphasis on understanding the linkages between natural processes and societal/environmental issues. Formerly offered as GEOG 1300E.

Skill Codes: COMP: Environmental Literacy

Content Areas: CA3: Science & Technology

Topics of Inquiry: TOI4: Environmental Literacy, TOI6: Science & Empirical Inq

GSCU 1500. New Digital Worlds of Geographic Information Science. (3 Credits)

An overview of geospatial data and emerging technologies that are common in our everyday lives and how they are shaping society. Topics include the use of geospatial technologies like GPS, Google Earth, Satellite Imagery, and GIS, and how these technologies address environmental, societal, and political issues. Discussion of career opportunities in GIScience. Formerly offered as GEOG 1010.

Content Areas: CA3: Science & Technology

Topics of Inquiry: TOI6: Science & Empirical Inq

GSCU 1502E. GIS Modeling of Environmental Change. (4 Credits)

An introduction to environmental processes and patterns, especially assessing change in environmental systems using spatial analysis techniques. Students will map field sites using Global Positioning System technology and aerial photographs, collect field data on various environmental systems, and build and test a Geographical Information System-based environmental model. Formerly offered as GEOG 1302E.

Skill Codes: COMP: Environmental Literacy

Content Areas: CA3LAB: Science & Tech Lab

Topics of Inquiry: TOI4: Environmental Literacy, TOI6L: Science Emp Inq (Lab)

GSCU 1600. Cities of Imagination. (3 Credits)

Introduction to planned cities. Topics may include concepts in urban planning, past and present planned cities, considerations of ethics and inclusion in planning. Formerly offered as URBN 1600.

Content Areas: CA2: Social Science

Topics of Inquiry: TOI1: Creativity: Des, Expr, Innv, TOI3: Div, Equity, Soc Just

GSCU 1700. World Regional Geography. (3 Credits)

Study of geographic relationships among natural and cultural environments that help to distinguish one part of the world from another. Analysis of selected countries as well as larger regions, with specific reference to the non-western world. Formerly offered as GEOG 1700.

Content Areas: CA2: Social Science, CA4INT: Div & Multi - Intl

Topics of Inquiry: TOI2: Cultural Dimen Human Exp, TOI3: Div, Equity, Soc Just

GSCU 1993. International Study. (1-6 Credits)

Special topics are taken in an international study program. Consent of Department Head or advisor may be required prior to the student's departure. Formerly offered as GEOG 1093.

Enrollment Requirements: Consent of Department Head or advisor may be required prior to the student's departure.

May be repeated for credit

GSCU 1998. Variable Topics. (3 Credits)

May be repeated for credit with a change in subject matter. Formerly offered as URBN 1998.

May be repeated for credit

GSCU 2100. Survey Research Methods. (3 Credits)

(Also offered as PP 2100.) Theory and practice of surveys, including overall project design, questionnaire development, sampling, methods of data collection and data analysis. Formerly offered as URBN 2100.

GSCU 2101. Introduction to Urban and Community Studies. (3 Credits)

Introduction to the analysis of urban development with particular stress on those problems pertinent to the American central city. Formerly offered as URBN 2000.

GSCU 2200. Introduction to Human Geography. (3 Credits)

Geographic perspectives on the relationships between human behavior/activities, and the physical, economic, and cultural environments. Formerly offered as GEOG 2200.

Content Areas: CA2: Social Science, CA4INT: Div & Multi - Intl

Topics of Inquiry: TOI2: Cultural Dimen Human Exp, TOI3: Div, Equity, Soc Just

GSCU 2250. Economic Geography. (3 Credits)

Examination of the relationship among economic, cultural, and geographic processes which affect the patterns, structure, and growth or decline of economic activities. The global extent of the agricultural, manufacturing, and service sectors is presented with particular emphasis on the interdependency of non-western and western economies. Formerly offered as GEOG 2100.

Content Areas: CA2: Social Science

GSCU 2300E. Introduction to Physical Geography. (3 Credits)

The physical elements and processes of the lithosphere, hydrosphere, atmosphere, and biosphere in relation to one another and to the distribution of the world's environments. Emphasis on the basic concepts and theories of physical geography and relationships between humans and the physical environment they interact with every day. Formerly offered as GEOG 2300E.

Skill Codes: COMP: Environmental Literacy

Content Areas: CA3: Science & Technology

Topics of Inquiry: TOI4: Environmental Literacy, TOI6: Science & Empirical Inq

GSCU 2310E. Creating and Sustaining National Parks. (3 Credits)

(Also offered as EARTH 2310E.) Geologic processes that create the Earth's iconic landscapes through the study of National Parks, Monuments, and Seashores. Plate tectonics, climate and biotic change, natural hazards, Earth materials and resources, environmental conservation, and the interactions between human society and the natural world. Formerly offered as GEOG 2310E.

Skill Codes: COMP: Environmental Literacy

Topics of Inquiry: TOI4: Environmental Literacy

GSCU 2320E. Climate Change: Current Geographic Issues. (3 Credits)

The science, impacts, and politics of climate change from a geographic perspective. Examination of physical mechanisms, extreme weather events, impacts on water, food and energy systems, impacts on polar regions, energy strategies and solutions, policy and negotiations, and mitigation and adaptation strategies. Formerly offered as GEOG 2320E.

Skill Codes: COMP: Environmental Literacy

Content Areas: CA2: Social Science

Topics of Inquiry: TOI4: Environmental Literacy, TOI5: Indiv Values Soc Inst

GSCU 2400. City and Community in Film. (3 Credits)

(Also offered as AMST 2400.) Aesthetics, history, and contemporary relevance of American films that feature the urban, suburban, and/or small town landscape as a major "character" shaping plot and story. Films read closely as texts that make meaning through a range of tools, including narrative, mise-en-scene, editing, camera work, and genre conventions. Formerly offered as URBN 2400.

Content Areas: CA1: Arts & Humanities

Topics of Inquiry: TOI1: Creativity: Des, Expr, Innv, TOI2: Cultural Dimen Human Exp

GSCU 2410Q. Research Methods and Analysis in Urban and Community Studies. (3 Credits)

Introduction to research methods and analysis techniques useful in understanding urban issues and assessing public and non-profit social programs. Formerly offered as URBN 2301Q.

Enrollment Requirements: STAT 1000 or 1100. Open to sophomores or higher.

Skill Codes: COMP: Quantitative Competency

GSCU 2420. Qualitative Methods in Urban and Community Studies. (3 Credits)

An introduction to qualitative methods used in urban social research. Interdisciplinary techniques for data collection and analysis, including visual and narrative analysis, participant observation, interviewing, and archival research. Formerly offered as URBN 2302.

Enrollment Requirements: Open to sophomores or higher.

Content Areas: CA3: Science & Technology

Topics of Inquiry: TOI1: Creativity: Des, Expr, Innv, TOI6: Science & Empirical Inq

GSCU 2420W. Qualitative Analysis of Urban and Community Studies. (3 Credits)

An introduction to qualitative methods used in urban social research. Interdisciplinary techniques for data collection and analysis, including visual and narrative analysis, participant observation, interviewing, and archival research. Formerly offered as URBN 2302W.

Enrollment Requirements: ENGL 1007 or 1010 or 1011.

Skill Codes: COMP: Writing Competency

Content Areas: CA3: Science & Technology

Topics of Inquiry: TOI1: Creativity: Des, Expr, Innv, TOI6: Science & Empirical Inq

GSCU 2500. Introduction to Geographic Information Systems. (4 Credits)

(Also offered as CE 2500.) Fundamental principles of geographic information systems (GIS). Topics include history of the field, components of a GIS, the nature and characteristics of spatial data, methods of data capture and sources of data, database models, review of typical GIS operations and applications. Laboratory exercises provide experience with common computer-based systems. Formerly offered as GEOG 2500.

GSCU 2505. Applications of Geographic Information Systems. (3 Credits)

Applications of geographic information systems. Particular attention to land use planning and resource management. Formerly offered as GEOG 2505.

Enrollment Requirements: GSCU 2500.

GSCU 2541. The History of Urban America. (3 Credits)

(Also offered as HIST 2541.) The development of Urban America with emphasis on social, political, physical, and environmental change in the industrial city. Formerly offered as URBN 2541.

GSCU 2541W. The History of Urban America. (3 Credits)

(Also offered as HIST 2541W.) The development of Urban America with emphasis on social, political, physical, and environmental change in the industrial city. Formerly offered as URBN 2541W.

Enrollment Requirements: ENGL 1007 or 1010 or 1011.

Skill Codes: COMP: Writing Competency

GSCU 2545. The American Suburb: History, Power, Design. (3 Credits)

(Also offered as HIST 2545.) Examines the origins and development of American suburbs and their contemporary economic, social, and environmental dynamics. Particular attention is devoted to links between these dynamics and the history and future of suburban planning and design.

Content Areas: CA1: Arts & Humanities

Topics of Inquiry: TO11: Creativity: Des, Expr, Innv, TO13: Div, Equity, Soc Just

GSCU 2650. History of Urban Latin America. (3 Credits)

(Also offered as HIST 2650.) The development of Latin American cities with emphasis on social, political, physical and environmental change, from Spanish conquest to present. Formerly offered as URBN 2650.

Content Areas: CA1: Arts & Humanities

GSCU 2660. Work and Economic Justice. (3 Credits)

(Also offered as URBN 2600.) Interdisciplinary analysis of conservation and the human-environment relationship from a cross-cultural perspective. Major topics include sustainability, environmental ethics, climate change, natural disasters, health, and environmental justice.

Enrollment Requirements: Not open to students who have passed URBN 3998 when offered as Work and Economic Justice. Recommended preparation: GSCU 2101.

GSCU 2700. Globalization. (3 Credits)

Globalization as a complex-multidimensional process. Linkages and interconnectedness between spatial processes and social, cultural, economic, political, and environmental change around the world today. Theory and impacts of economic, social, political, and cultural globalization through case studies at the local, regional, national, and international scales. Formerly offered as GEOG 2000.

Content Areas: CA2: Social Science, CA4INT: Div & Multi - Intl

Topics of Inquiry: TO12: Cultural Dimen Human Exp, TO15: Indiv Values Soc Inst

GSCU 2800E. Introduction to Sustainable Cities. (3 Credits)

Pathways to make cities more sustainable from social, economic, and environmental perspectives. Topics include sustainable transportation, renewable energy, recycling of waste, and green infrastructure in contemporary metropolitan areas in developed and developing nations. Formerly offered as GEOG 2400E.

Skill Codes: COMP: Environmental Literacy

Content Areas: CA2: Social Science, CA4INT: Div & Multi - Intl

Topics of Inquiry: TO13: Div, Equity, Soc Just, TO14: Environmental Literacy

GSCU 2850E. Geography of Energy for Sustainability. (3 Credits)

Introduction to energy solutions for global sustainability. Topics may include the geographic context of global and local energy use, energy transition, renewable energy, solar, offshore wind, and energy justice. Formerly offered as GEOG 2350E.

Skill Codes: COMP: Environmental Literacy

Content Areas: CA2: Social Science, CA4INT: Div & Multi - Intl

Topics of Inquiry: TO14: Environmental Literacy, TO15: Indiv Values Soc Inst

GSCU 2901. Urban Sociology. (3 Credits)

(Also offered as SOCI 2901.) Social and physical organization of cities and suburbs. Formerly offered as URBN 2901.

GSCU 2901W. Urban Sociology. (3 Credits)

(Also offered as SOCI 2901W.) Social and physical organization of cities and suburbs. Formerly offered as URBN 2901W.

Enrollment Requirements: ENGL 1007 or 1010 or 1011.

Skill Codes: COMP: Writing Competency

GSCU 2996. Research. (1-6 Credits)

Primary research under faculty supervision. Formerly offered as GEOG 2996.

Enrollment Requirements: Instructor consent.

May be repeated for a total of 6 credits

GSCU 2998. Variable Topics. (3 Credits)

May be repeated for credit with a change in subject matter. Prerequisites and recommended preparation vary. Formerly offered as URBN 2998.

Enrollment Requirements: Prerequisites and recommended preparation vary.

May be repeated for credit

GSCU 3100. Urban Geography. (3 Credits)

Analysis of the growth, distribution, and functional patterns within and among Western cities. Application of urban geographical concepts to city planning problems. Formerly offered as GEOG 3200 and URBN 3200.

GSCU 3184. Seminar in Urban Problems. (3 Credits)

Discussions based upon assigned readings and led by faculty and invited speakers from outside and within the University. Formerly offered as INTD 3584.

Enrollment Requirements: Must be taken concurrently with GSCU 3190 and GSCU 3194/W; open to sophomores or higher.

Content Areas: CA4: Diversity & Multicultural

GSCU 3190. Urban Field Studies. (9 Credits)

Field experience for the Urban Semester program. Formerly offered as INTD 3590.

Enrollment Requirements: Must be taken concurrently with GSCU 3184 and GSCU 3194/W; open to sophomores or higher.

GSCU 3194. Urban Semester Field Work Seminar. (3 Credits)

Students make analytic presentations of their field experiences, relating these to the pertinent available literature. Particular issues are discussed with experts invited from inside and outside the University. Formerly offered as INTD 3594.

Enrollment Requirements: Must be taken concurrently with GSCU 3184 and GSCU 3190; open to sophomores or higher.

GSCU 3194W. Urban Semester Field Work Seminar. (3 Credits)

Students make analytic presentations of their field experiences, relating these to the pertinent available literature. Particular urban problems are discussed with invited experts from outside the University. Formerly offered as INTD 3594W.

Enrollment Requirements: ENGL 1007 or 1010 or 1011; must be taken concurrently with GSCU 3184 and GSCU 3190; open to sophomores or higher.

Skill Codes: COMP. Writing Competency

GSCU 3211. Indigenous Geographies in Abya Yala and Turtle Island (The Americas). (3 Credits)

(Also offered as NAIS 3211, WGSS 3211.) An examination of Indigenous spatial knowledges and their relations with history, place, gender, research work, and advocacy. Formerly offered as GEOG 3010.

GSCU 3240. Health Geography: Connecting People, Place, and Health. (3 Credits)

An exploration and understanding of the connection and interplay of physical and social geographies of places and their impact on physical and mental health. What we eat, the air we breathe, where we live, where we work, people we interact with, and the health services we have access to all play a part in our health. Formerly offered as GEOG 3240.

GSCU 3250. Race, Sex, Space, and Place. (3 Credits)

Focuses on cities, sexualities, and race relations through a study of racial segregation in American cities; emergence of gay neighborhoods; globalization; migration; and human rights. Formerly offered as GEOG 3000.

GSCU 3300. Climate and Weather. (3 Credits)

Analysis of atmospheric processes giving rise to weather systems and climatic patterns. The dynamic integration of atmospheric systems is emphasized. Formerly offered as GEOG 3400.

Enrollment Requirements: Recommended preparation: GSCU 1300E or GSCU 2300E.

GSCU 3320W. Environmental Evaluation and Assessment. (3 Credits)

Concepts and methods of environmental analysis in contemporary geography. Emphasis on the ecological impact of human activities and on the evaluation and assessment of existing and future environments. Formerly offered as GEOG 3320W.

Enrollment Requirements: ENGL 1007 or 1010 or 1011; open to juniors or higher. Recommended preparation: GSCU 2300E or GSCU 3810E.

Skill Codes: COMP. Writing Competency

GSCU 3350E. Global Change, Local Action: A Geography of Environmentalism. (3 Credits)

A systems thinking approach exploring global-local linkages of environmental politics and human-environmental interactions across scales using case studies and future modeling simulations. Emphasis will be placed on stakeholders and community-based initiatives to achieve environmental justice and sustainability. Formerly offered as GEOG 3350E.

Skill Codes: COMP. Environmental Literacy

Topics of Inquiry: TOI4: Environmental Literacy

GSCU 3420. Field Methods in Geography. (3 Credits)

Overview of field methods for collecting data relevant to physical, human, and technical areas of Geography. Methods include identification of existing data to support field studies, assessment of field sources for commonly used datasets, surveys, geospatial technologies, and integration of these data for further analysis. Formerly offered as GEOG 3420.

Enrollment Requirements: Recommended preparation: GSCU 2300E and GSCU 2500.

GSCU 3430. GIS and Remote Sensing for Geoscience Applications. (3 Credits)

(Also offered as EARTH 3430.) Application of Geographic Information Systems, remote sensing, and image interpretation to problems in geoscience. Data acquisition, processing and analysis of Digital Elevation Models and satellite imagery. Geologic materials, processes, landforms and landscapes. Formerly offered as EARTH/GEOG 4230 and GEOG 3430.

Enrollment Requirements: GEOG 2300, or EARTH 1050, or both EARTH 1052 and one of EARTH 1010 or 1051 or 1055 or 1070 or GEOG 1070.

GSCU 3439. Urban and Regional Economics. (3 Credits)

(Also offered as ECON 3439.) Economic problems of cities and regions: urban markets for land, labor, and housing; location decisions of businesses and households; metropolitan transportation problems; urban/suburban fiscal relations; urban and regional environmental quality; and the economics of crime. Formerly offered as URBN 3439.

Enrollment Requirements: ECON 2201 or 2211Q. Recommended preparation: ECON 1200 or 1202; MATH 1071Q or 1110Q or 1121Q or 1131Q or 1151Q.

GSCU 3500Q. Geographic Data Analysis. (3 Credits)

An introduction to the use of quantitative methods in conducting research, with particular emphasis on the processing and analysis of geographic data. Formerly offered as GEOG 3500Q.

Enrollment Requirements: Open to juniors or higher. Recommended preparation: 1000 level STAT course.

Skill Codes: COMP. Quantitative Competency

GSCU 3505. Remote Sensing of Marine Geography. (3 Credits)

(Also offered as MARN 3505.) Introduction to remote sensing applications in oceans and seas. Applications include image analysis of sea surface temperature, winds, altimetry, sea ice, chlorophyll, primary productivity, and bathymetry. Formerly offered as GEOG 3505.

Enrollment Requirements: Recommended preparation: GSCU 2300E or MARN 1002.

GSCU 3510. Cartographic Techniques. (3 Credits)

A laboratory-oriented introduction to computer-based map design and compilation. Concepts of scale, symbolization, map balance, and layout are emphasized for both general and thematic mapping. Formerly offered as GEOG 3510.

Enrollment Requirements: Recommended preparation: GSCU 2500 and 2505.

GSCU 3512. Introduction to Spatial Data Science. (3 Credits)

An introduction to the fundamentals of spatial data science. Application of a high-level programming language (R) for spatial data analysis, visualization, and modeling. Formerly offered as GEOG 3512.

Enrollment Requirements: GSCU/CE 2500 and GSCU 3500Q, or instructor consent.

GSCU 3530. Introduction to GeoComputing. (3 Credits)

Introduction to GIS programming and scripting to automate GIS and spatial analyses. Students will develop geospatial models using geoprocessing tools within ArcGIS, gain fundamental programming skills in the Python programming language, and employ Python scripting to solve geospatial problems. Formerly offered as GEOG 3530.

Enrollment Requirements: GSCU/CE 2500. Recommended preparation: GSCU 2505.

GSCU 3550. Geospatial Artificial Intelligence Applications in Geography and GIS. (3 Credits)

Introduction to the ways in which geographers use AI-driven solutions for a spectrum of challenges impacting society and the natural world. Emphasizes hands-on exercises to craft and implement machine learning models tailored for geospatial analysis and visualization.

Enrollment Requirements: Not open for credit to students who have passed GEOG 4095 when offered as Introduction to Geospatial Artificial Intelligence.

GSCU 3600. Urban and Regional Planning. (3 Credits)

Urban and regional planning, with emphasis on duties of local planners, especially land use planning, and the political context for planners' work. Legal and political issues in communities and organizations. Formerly offered as GEOG 4210.

Enrollment Requirements: Open to juniors or higher. Recommended preparation: GSCU 2250 or instructor consent.

GSCU 3632. Urban Politics. (3 Credits)

(Also offered as POLS 3632.) Political systems and problems confronting urban governments. Formerly offered as URBN 3632.

Enrollment Requirements: Open to juniors or higher.

GSCU 3632W. Urban Politics. (3 Credits)

(Also offered as POLS 3632W.) Political systems and problems confronting urban governments. Formerly offered as URBN 3632W.

Enrollment Requirements: ENGL 1007 or 1010 or 1011; open to juniors or higher.

Skill Codes: COMP. Writing Competency

GSCU 3650E. Urban Parks and Sustainability. (3 Credits)

(Also offered as URBN 3400E.) Historical and contemporary analysis of park issues related to the social, ecological, and economic sustainability of cities, such as the racial politics of park advocacy, the changing social practices of park use, the privatization of public space, urban resilience and green infrastructure, and the relationship between parks, gentrification, and urban sustainability.

Skill Codes: COMP. Environmental Literacy

Content Areas: CA2: Social Science

Topics of Inquiry: TOI4: Environmental Literacy, TOI5: Indiv Values Soc Inst

GSCU 3750. Global Dynamics of the Shipping Industry. (3 Credits)

(Also offered as MAST 3750.) Introduction to the global shipping industry and the essential role it plays in the conduct of world trade and the growth of the global economy. Formerly offered as GEOG 3600 and MAST 3600.

GSCU 3810E. Human Modifications of Natural Environments. (3 Credits)

A geographical and historical interpretation of the changing relationships between culture and environment. Emphasis on the modifications of the natural environment by preagricultural, agricultural, and urban societies. Formerly offered as GEOG 3410E.

Skill Codes: COMP. Environmental Literacy

Topics of Inquiry: TOI4: Environmental Literacy, TOI6: Science & Empirical Inq

GSCU 3840. Environmental Planning and Management. (3 Credits)

The basic elements of the conflict between human environments and natural systems are considered, along with the methods of analysis and resolution of problems caused by that conflict. Emphasis on public policy related to environmental issues. Formerly offered as GEOG 3340.

Enrollment Requirements: Open to juniors or higher. Recommended preparation: GSCU 3810E.

GSCU 3903. Urban Problems. (3 Credits)

(Also offered as SOCI 3903.) Social problems of American cities and suburbs, with emphasis on policy issues. Formerly offered as URBN 3276.

Enrollment Requirements: Open to juniors or higher.

GSCU 3903W. Urban Problems. (3 Credits)

(Also offered as SOCI 3903W.) Social problems of American cities and suburbs with emphasis on policy issues. Formerly offered as URBN 3276W.

Enrollment Requirements: ENGL 1007 or 1010 or 1011; open to juniors or higher.

Skill Codes: COMP. Writing Competency

GSCU 3995. Special Topics. (1-6 Credits)

Topics vary by semester. May be repeated with a change in topic.

Formerly offered as URBN 3995.

Enrollment Requirements: Prerequisites and recommended preparation vary.

May be repeated for credit

GSCU 4001W. Writing in GSCU. (1 Credit)

Techniques for, and practice in, research, writing, citation, and data presentation in geography. Formerly offered as GEOG 4001W.

Enrollment Requirements: One GSCU course at the 2000 level or higher; ENGL 1007 or 1010 or 1011; open to junior or higher Geography, GIS, and Urban and Community Studies majors. Corequisite: One GSCU course at the 3000 level or higher.

Skill Codes: COMP. Writing Competency

GSCU 4017. Understanding Your Community. (3 Credits)

Examination of an urban area or local community. Production of a detailed case study including historical perspective, analysis of issues and stakeholders, evaluation of internal strengths and weaknesses as well as external threats and opportunities. Proposal of strategies for addressing problems and advancing equity, growth, and development. Formerly offered as URBN 4000.

Enrollment Requirements: GSCU 2101; open to junior and senior Urban and Community Studies majors.

May be repeated for credit

GSCU 4018W. Capstone Seminar in Geography. (3 Credits)

Techniques for, and practice in, research, writing, citation, and data presentation in geography. Formerly offered as GEOG 4000W.

Enrollment Requirements: ENGL 1007 or 1010 or 1011; open to junior or higher Geography or Geographic Information Science majors, others by instructor consent. Prerequisite or corequisite: One GEOG or GSCU course at the 3000 level or higher.

Skill Codes: COMP. Writing Competency

GSCU 4130. Transportation Geography. (3 Credits)

Investigation of the role of transportation in global trade, spatial organization, economic development, and the natural and built environment. Application of GIS to the study of transport systems and modeling. Formerly offered as GEOG 4130.

Enrollment Requirements: Recommended preparation: GSCU 2250.

GSCU 4340. Biogeography. (3 Credits)

An examination of how physical environments, historical processes, and human activities shape current biogeographical patterns and influence future changes. Formerly offered as GEOG 4340.

Enrollment Requirements: GSCU 1000E or GSCU 2300E or EEB 2244E or EEB 2245 or NRE 1000E.

GSCU 4515. Web GIS. (3 Credits)

Introduction to Internet GIS. The basics of system architecture, geospatial web services, mashups, key elements of mobile GIS solutions, the functionality of geoportals and web technologies, web mapping interoperability using universal data standards such as OGC (Open Geospatial Consortium) web services, and the current state of e-business and e-government web mapping interests. Formerly offered as GEOG 4515.

Enrollment Requirements: GSCU 2500 and GSCU 2505 and instructor consent.

GSCU 4516. Fundamentals of Spatial Database Systems. (3 Credits)

The theories and principles behind the Spatial Database Systems. Students will learn how to design and implement spatial databases. Formerly offered as GEOG 4516.

Enrollment Requirements: GSCU 2500, or instructor consent.

GSCU 4518. Mobile GIS. (3 Credits)

This course covers how to develop, test, and publish mobile GIS web and native apps across multiple mobile platforms (Android, iOS, etc.). Formerly offered as GEOG 4518.

Enrollment Requirements: GSCU 2500 or instructor consent.

Recommended preparation: GSCU 4515.

GSCU 4519. Spatial Big Data Analytics. (3 Credits)

Covers the collection, analysis, and visualization of spatial big data to support better decision-making in geographic contexts. Formerly offered as GEOG 4519.

Enrollment Requirements: GSCU 2500 or instructor consent.

Recommended preparation: GSCU 4515.

GSCU 4840. Disaster Risk, Vulnerability, and Resilience. (3 Credits)

Overview of geographical perspectives on disaster risk, vulnerability, and resilience using an integrated environmental, social, and infrastructural approach. The theory, methods, metrics, and tools necessary to measure and understand risk, vulnerability, and the resilience of societies worldwide. Formerly offered as GEOG 4240.

Enrollment Requirements: Recommended preparation: Introductory course on natural hazards and disasters.

GSCU 4981. Internship: Field Study. (1-3 Credits)

Supervised field experience under the direction of a faculty member affiliated with GSCU. Hours by arrangement with host agency; 42 hours per semester per credit. Students taking this course will be assigned a final grade of S (satisfactory) or U (unsatisfactory). May be repeated for a total of 6 credits. Formerly offered as GEOG 4090.

Enrollment Requirements: If more than one credit of field study is being taken, then it must be taken concurrently with GSCU 4991. Open to juniors or higher, or with consent of instructor.

May be repeated for a total of 6 credits

GSCU 4991. Internship: Seminar. (1-3 Credits)

Description, analysis, and evaluation of the fieldwork portion (GSCU 4981) of the internship. Written reports are required. Formerly offered as GEOG 4091.

Enrollment Requirements: Must be taken concurrently with GSCU 4981; open to juniors or higher, or with consent of instructor.

GSCU 4993. International Study. (1-6 Credits)

Special topics in an international study program. Consent of instructor required, preferably prior to the student's departure. Formerly offered as GEOG 4093.

Enrollment Requirements: Open to juniors or higher, instructor consent required.

May be repeated for a total of 6 credits

GSCU 4995. Special Topics. (1-6 Credits)

Topics vary by semester. May be repeated with a change in topic. Formerly offered as GEOG 4095.

Enrollment Requirements: Open to juniors or higher.

May be repeated for credit

GSCU 4997. Senior Thesis. (3 Credits)

Formerly offered as GEOG 4096.

Enrollment Requirements: Open only to junior or higher students

majoring in Geography or Urban and Community Studies with the consent of the instructor.

Grading Basis: Honors Credit

GSCU 4997W. Senior Thesis. (3 Credits)

Senior thesis. Formerly offered as GEOG 4096W.

Enrollment Requirements: ENGL 1007 or 1010 or 1011; open only to

junior or higher students majoring in Geography or Urban and Community Studies with the consent of the instructor.

Skill Codes: COMP: Writing Competency

GSCU 4998. Variable Topics. (3 Credits)

Variable topics in GSCU. May be repeated with a change in topic.

Formerly offered as GEOG 4098.

Enrollment Requirements: Open only to juniors or higher. Prerequisites and recommended preparation vary by section.

May be repeated for credit

GSCU 4999. Independent Study. (1-6 Credits)

Formerly offered as GEOG 4099.

Enrollment Requirements: Open to juniors or higher.

May be repeated for credit