GEOGRAPHY (GEO)

GEO 500 Topics in Geography (1-6 Credits)
Maxwell
In-depth studies of selected topics.
Repeatable

GEO 537 Environmental Policy in a Development Context (3 Credits)
Maxwell
Cross-listed with LAS 537
Offered only in Santiago. Examines historical/intellectual/ material processes that transformed nature into natural resources to be exploited; ways global political process has guided global responses to environmental problems; Chilean environmental policy over the last 20 years.

GEO 561 Global Economic Geography (3 Credits)
Maxwell
Globalization, world economic processes, international development, and policy issues; emphasizing geographical perspectives.

GEO 563 The Urban Condition (3 Credits)
Maxwell
Contemporary cities. Economic growth and decline. Social polarization. Construction of the built environment. Case studies from around the world.

GEO 564 Urban Historical Geography (3 Credits)
Maxwell
Cities in western civilization through classical, medieval, mercantile, and industrial eras to 1945. Historical geographic meanings of urbanism; social construction of the built environment; and relationships between power, social justice, and urban spatial form.

GEO 572 Landscape, Law, and Culture (3 Credits)
Maxwell
Analysis of landscapes as legal and cultural constructs. Examples and theory include public space, zoning, gender, built environment, and urban development.
Shared Competencies: Scientific Inquiry and Research Skills (https://coursecatalog.syracuse.edu/shared-competencies/scientific-inquiry-and-research-skills/)

GEO 573 The Geography of Capital (3 Credits)
Maxwell
In-depth reading of Marx's Capital to understand: (a) the relationship between political economy and the geographical landscape; (b) the formative role of "Capital" in contemporary geographic theory.
Shared Competencies: Critical and Creative Thinking (https://coursecatalog.syracuse.edu/shared-competencies/critical-and-creative-thinking/); Civic and Global Responsibility (https://coursecatalog.syracuse.edu/shared-competencies/civic-and-global-responsibility/)

GEO 580 Research on Cartographic Techniques (1-12 Credits)
Maxwell
Reading and special work.
Repeatable

GEO 583 Environmental Geographical Information Science (3 Credits)
Maxwell
Data types, collection techniques, and processing strategies in natural resource survey. Monitoring and environmental sciences. Basic concepts of GIS data structures and algorithms. Data quality issues. User requirements, management aspects, and implementation experience.
Prereq: GEO 383 or 683

GEO 600 Selected Topics (1-6 Credits)
Maxwell
Exploration of a topic (to be determined) not covered by the standard curriculum but of interest to faculty and students in a particular semester.
Repeatable

GEO 602 Research Design in Geography (3 Credits)
Maxwell
Approaches to research, alternative philosophies, and research designs. Research procedures, information gathering. Collection of original data. Formulation of individual research topics.

GEO 603 Development of Geographic Thought (3 Credits)
Maxwell
Historical survey of development of Geography. Emphasis on 20th century: regionalism, positivism, humanism, Marxism, feminism, post-structuralism/post-colonialism

GEO 605 Writing Geography (3 Credits)
Maxwell
Workshop on academic writing for geographers. Students exposed to the techniques of scholarly writing and practices of creative nonfiction.

GEO 606 Development and Sustainability (3 Credits)
Maxwell
Critical analysis of international development and sustainability. Focuses on the complex political, economic, cultural, and ecological processes involved in development discourse and practice. Readings and case studies drawn from Latin America, Africa, and Asia.

GEO 609 Readings and Special Work in Advanced Geography (1-3 Credits)
Maxwell
Topics to be selected in conference with advisor for individual program of study and research.

GEO 610 Qualitative Methods in Geography (3 Credits)
Maxwell
This course provides an overview of qualitative methods in human geography. It examines the relationship between methodology, epistemology, and politics, compares different qualitative methods, and gives students hands-on experience with a range of methodological tools.

GEO 622 Water: Environment, Society and Politics (3 Credits)
Maxwell
Double-numbered with GEO 422
Critical geographical analyses of inter-connected and cross-scalar role of water in environment, society, politics and economy globally. Investigates various water-society relationships, water governance, policies, crises, struggles, controversies, conflicts, and water justice, in theory and practice. Additional work required of graduate students.
Shared Competencies: Scientific Inquiry and Research Skills (https://coursecatalog.syracuse.edu/shared-competencies/scientific-inquiry-and-research-skills/)

GEO 623 Quantitative Methods in Human Geography (3 Credits)
Maxwell
Double-numbered with GEO 323
Critical examination, creative exploration, and application of quantitative methods in human geography. Creative use of quantitative geographic analysis on various social and environmental justice issues, covering various methods in spatial statistics, categorical data analysis, research design, and visualization. Additional work for graduate students.
Shared Competencies: Critical and Creative Thinking (https://coursecatalog.syracuse.edu/shared-competencies/critical-and-creative-thinking/); Information Literacy and Technological Agility (https://coursecatalog.syracuse.edu/shared-competencies/information-literacy-and-technological-agility/); Scientific Inquiry and Research Skills (https://coursecatalog.syracuse.edu/shared-competencies/scientific-inquiry-and-research-skills/)

GEO 626 Environmental Change in the Anthropocene (3 Credits)
Maxwell
Double-numbered with GEO 426
Investigation of the roots of the Anthropocene as a concept and a geologic epoch; examination of human drivers of and interactions with global environmental change. Additional work required of graduate students.
Advisory recommendation Prereq: GEO 103 or GEO 155 or GEO 215
Shared Competencies: Scientific Inquiry and Research Skills (https://coursecatalog.syracuse.edu/shared-competencies/scientific-inquiry-and-research-skills/)

GEO 655 Biogeography (3 Credits)
Maxwell
Double-numbered with GEO 455
Exploration of the environmental factors that influence the distribution of organisms. Emphasis is on plant distributions and dynamics, and consideration includes both natural and human factors. Additional work required of graduate students.

GEO 659 Pyrogeography: Wildfire in a Changing World (3 Credits)
Maxwell
Double-numbered with GEO 459
Comprehensive treatment of the geography of wildfire. Topics include fire behavior, approaches to firefighting, ecological and human impacts of wildfire, geographic and historical variation in fire regimes, and the impacts of climate change on wildfire. Additional work required of graduate students.

GEO 670 Experience Credit (1-6 Credits)
Maxwell
Participation in a discipline- or subject-related experience. Student must be evaluated by written or oral reports or an examination. Limited to those in good academic standing.
Repeatable

GEO 672 Geopolitics and the State (3 Credits)
Maxwell
Survey of political geographic research on states, nations, territories, and their connection with geopolitical theories and the practice of foreign policy; focus on critical approach to applied geopolitical thinking.

GEO 673 Geography of Memory (3 Credits)
Maxwell
Double-numbered with GEO 473
Memories play a key role in shaping how individuals and communities narrate their identities. Memories are also geographical, embedded in specific places, spaces, and landscapes. This seminar examines how those geographies are made through a wide range of social, cultural, and political practices. Additional work required for graduate students.
Shared Competencies: Critical and Creative Thinking (https://coursecatalog.syracuse.edu/shared-competencies/critical-and-creative-thinking/); Civic and Global Responsibility (https://coursecatalog.syracuse.edu/shared-competencies/civic-and-global-responsibility/); Ethics and Integrity (https://coursecatalog.syracuse.edu/shared-competencies/ethics-and-integrity/)

GEO 676 Advanced GIS Analysis and Applications (3 Credits)
Maxwell
Double-numbered with GEO 476
This course introduces students to (i) concepts and methodologies of 3D GIS (Geographic Information System) analysis; (ii) typical applications of 3D analysis in urban design and planning; and (iii) basic interface and operations in ArcGIS pro. Additional work required for graduate students.
Advisory recommendation Prereq: GEO 383/683 or equivalent
Shared Competencies: Critical and Creative Thinking (https://coursecatalog.syracuse.edu/shared-competencies/critical-and-creative-thinking/); Information Literacy and Technological Agility (https://coursecatalog.syracuse.edu/shared-competencies/information-literacy-and-technological-agility/)

GEO 677 GIS for Public Health (3 Credits)
Maxwell
Cross-listed with PHP 677
Double-numbered with GEO 477, PHP 477
Explores the intersection of geography and public health, using Geographic Information Systems (GIS) to analyze and visualize health phenomena. Introduces core GIS concepts and skills through case studies, hands-on lab exercises, and independent projects. Additional work required for graduate students.
Shared Competencies: Information Literacy and Technological Agility (https://coursecatalog.syracuse.edu/shared-competencies/information-literacy-and-technological-agility/); Scientific Inquiry and Research Skills (https://coursecatalog.syracuse.edu/shared-competencies/scientific-inquiry-and-research-skills/)

GEO 678 Spatial Storytelling (3 Credits)
Maxwell
Double-numbered with GEO 478
Techniques and impacts of spatial storytelling from a geohumanities perspective. Ways of conceptualizing space, time, and realities. Study and practice with maps, texts, images, video, and other visualization techniques. Additional work required of graduate students.

GEO 679 Introduction to Unmanned Aerial Vehicles: Research & Applications (3 Credits)
Maxwell, Arts & Sciences
Cross-listed with EAR 679
Double-numbered with GEO 479
Introduction to UAV operations, including FAA airspace, platforms and sensors; flight planning, data collection, image processing, and data analysis for geospatial mapping. Applications and societal impacts, including legal, safety, privacy, ethical issues. Additional work required of graduate students.

GEO 681 Map Design (3 Credits)
Maxwell, Arts & Sciences
Double-numbered with GEO 381
Introduction to map design that brings cartographic theory and graphic design principles into hands-on technical practice through self-directed mapping projects. Reflection on power and ethics throughout mapping processes. Additional work required of graduate students.
Shared Competencies: Civic and Global Responsibility (https://coursecatalog.syracuse.edu/shared-competencies/civic-and-global-responsibility/); Information Literacy and Technological Agility (https://coursecatalog.syracuse.edu/shared-competencies/information-literacy-and-technological-agility/)

GEO 682 Remote Sensing and GeoAI (3-4 Credits)
Maxwell, Arts & Sciences
Double-numbered with GEO 482
Principles and applications of modern remote sensing, with hands-on labs and project work to address real-world challenges. Emphasis on data acquisition, image processing and analyses, and emerging technologies including sensors, platforms, and GeoAI methods. Additional work required of graduate students.
Shared Competencies: Information Literacy and Technological Agility (https://coursecatalog.syracuse.edu/shared-competencies/information-literacy-and-technological-agility/); Scientific Inquiry and Research Skills (https://coursecatalog.syracuse.edu/shared-competencies/scientific-inquiry-and-research-skills/)

GEO 683 Geographic Information Systems (3-4 Credits)
Maxwell
Double-numbered with GEO 383
Introductory GIS course emphasizing geospatial concepts, mapping, and analysis. Students develop skills in data collection, visualization, analysis, and interpretation using GIS software, applying them to real-world problems. Laboratory required. Additional work required of graduate students.
Shared Competencies: Information Literacy and Technological Agility (https://coursecatalog.syracuse.edu/shared-competencies/information-literacy-and-technological-agility/); Scientific Inquiry and Research Skills (https://coursecatalog.syracuse.edu/shared-competencies/scientific-inquiry-and-research-skills/)

GEO 684 GIS for Urban Environments (3 Credits)
Maxwell
Double-numbered with GEO 484
Intermediate GIS methods for the study of urban environments and systems. Emphasis on practical and applied uses of GIS, project management and spatial analysis. Laboratory exercises, case studies, and course projects use real world data. Additional work required of graduate students.
Advisory recommendation Prereq: GEO 683
Shared Competencies: Communication Skills (https://coursecatalog.syracuse.edu/shared-competencies/communication-skills/); Information Literacy and Technological Agility (https://coursecatalog.syracuse.edu/shared-competencies/information-literacy-and-technological-agility/)

GEO 685 Community Geography (3 Credits)
Maxwell
Double-numbered with GEO 485
Introduces community-based and participatory research methods and participatory GIS, including origins, ethics and challenges. Examines how and why grassroots organizations use GIS and geospatial technologies. Students conduct local research projects. Additional work required of graduate students.
Shared Competencies: Civic and Global Responsibility (https://coursecatalog.syracuse.edu/shared-competencies/civic-and-global-responsibility/); Communication Skills (https://coursecatalog.syracuse.edu/shared-competencies/communication-skills/)

GEO 686 Quantitative Geographic Analysis (3 Credits)
Maxwell
Double-numbered with GEO 386
Descriptive and inferential statistics for use geo-referenced data, spatial autocorrelation, and geostatistics. Geographic examples. Weekly labs. Individualized advanced work and term project.

GEO 687 Environmental Geostatistics (3 Credits)
Maxwell
Cross-listed with CEE 687
Statistical analysis of spatial patterns in environmental data. Exploratory data analysis; estimation, modeling, and interpretation of variograms; prediction using driging. Applications in engineering, geography, earth science and ecology. Use of geostatistical software.

GEO 688 Geographic Information and Society (3 Credits)
Maxwell
Double-numbered with GEO 388
Effects of geographic information technologies on governments, communities, and individuals. Mapping as an information industry, a political process, a surveillance technology, and a communication medium. Copyright, access, hazard management, national defense, public participation, and privacy.

GEO 689 Internship in Community Geography (1-3 Credits)
Maxwell
Double-numbered with GEO 489
Supervised internship in community-based and participatory action research. Students collaborate with community-based organizations to conduct geographic research on community issues. Students contribute to ongoing projects or introduce their own. Additional work required of graduate students. Permission to enroll required.
Repeatable 4 times for 12 credits maximum
Shared Competencies: Civic and Global Responsibility (https://coursecatalog.syracuse.edu/shared-competencies/civic-and-global-responsibility/)

GEO 690 Independent Study (1-6 Credits)
Maxwell
Exploration of a problem, or problems, in depth. Individual independent study upon a plan submitted by the student. Admission by consent of supervising instructor(s) and the department.
Repeatable

GEO 700 Selected Topics (1-6 Credits)
Maxwell
Exploration of a topic (to be determined) not covered by the standard curriculum but of interest to faculty and students in a particular semester. *
Repeatable

GEO 705 Theories of Development (3 Credits)
Maxwell
Cross-listed with SOS 705
Review of theories of development, economic growth, and social change. Comparison of explanatory power and limits of each theory. Review of prospects for synthesis and implications for empirical research in geography and other social sciences.

GEO 720 Seminar: Latin America (3 Credits)
Maxwell
Research seminar on contemporary problems in human and regional geography, emphasizing development and socio-economic issues.
Repeatable

GEO 730 Political Economy of Nature (3 Credits)
Arts & Sciences, Maxwell
Explores the complex relationships between capitalism and the natural environment. It covers both classical and contemporary debates within political economy and geography.

GEO 750 Seminar: Physical Geography (3 Credits)
Maxwell
Advanced work in climatology, land forms, and other aspects of physical geography.
Repeatable

GEO 752 Climate Change: History, Geography, Politics (3 Credits)
Maxwell
Cross-listed with HST 752
Social dimensions of climate change from geographical and historical perspectives. Influence of climate change on society, history of climate science, culture and climate, climate movements and climate justice.

GEO 754 Seminar in Environmental History (3 Credits)
Maxwell
Origins of field, key debates, research methods relating to the historical geography of humans and the environment.

GEO 755 Seminar in Political Ecology (3 Credits)
Maxwell
Conceptual origins, theoretical influences, and current debates in political-economic and cultural aspects of nature-society relations. Topics include environmental social movements, theories of nature, environmental justice, environmental conflicts, gender and environment.

GEO 756 Gramsci: Hegemony, Consent and Labor (3 Credits)
Maxwell
This course is a critical review of Gramsci's contribution to political, cultural, and geographic thought and the interpretation of his work by scholars and activists in the Global North and South.

GEO 757 Environmental Sediment Mechanics (3 Credits)
Maxwell
Physical processes of sediment transport in the environment including fluid behavior, sediment properties, roughness of bed forms, resistance to flow, initiation of particle motion, bed-load transport, and relevant practical issues.

GEO 758 GIS-based Geostatistical Methods and Applications (3 Credits)
Maxwell
Using GIS tools to calculate spatial statistics, identify spatial patterns (local and global), and perform spatial modeling (GWR)
Advisory recommendation Prereq: GEO 683 and 686

GEO 759 Food and Society (3 Credits)
Maxwell
Introduction to selected foundational texts, research strategies, and disciplinary developments in geographic and social studies of food systems. Analyze historical and modern-day development of global and industrial agriculture and social movements for sustainable and socially just food.

GEO 764 Gender and Globalization (3 Credits)
Maxwell
Cross-listed with ANT 764, WGS 764
The impact of the increasing hypermobility of capital and culture flows across borders on gender relations.

GEO 772 Seminar: Cultural Geography (3 Credits)
Maxwell
Examination of major currents in western cultural theory from the industrial revolution to the present, their development and transformation in light of advances in spatial theory.
Repeatable

GEO 773 Seminar in Economic Geography (3 Credits)
Maxwell
Examination of contemporary debates in economic geography including the impact of the cultural and institutional turn. Also examines economic geography perspectives on globalization, labor, innovation, and restructuring. Permission of instructor.

GEO 774 Seminar: Historical Geography (3 Credits)
Maxwell
Research seminar on current historiographic issues and archival methodologies in historical geography.
Repeatable

GEO 781 Seminar: Cartography (3 Credits)
Maxwell
Research seminar devoted to topics of current interest in geospatial technology, cartographic communication, and the history of cartography in the twentieth-century.

GEO 800 Selected Topics (1-6 Credits)
Maxwell
Exploration of a topic (to be determined) not covered by the standard curriculum but of interest to faculty and students in a particular semester.
Repeatable

GEO 810 Political Geography Seminar (3 Credits)
Maxwell
Seminar focused on themes in political geography, broadly related to topics of space, government, territory, citizenship, nationalism, geopolitics, and political geographic theory.
Repeatable 2 times for 6 credits maximum

GEO 815 Seminar in Urban Geography (3 Credits)
Maxwell
Research seminar on theoretical and empirical issues in urban geography.

GEO 870 Seminar on Population Geography (3 Credits)
Maxwell
Specialized research topics dealing with the application of demographic measurements to geographic problems.
Repeatable

GEO 876 Feminist Geography (3 Credits)
Maxwell
Cross-listed with WGS 876
The relationships between gender, space, and place. Topics include the gendered spaces of everyday life, identity and spatial metaphor, geographies of the body and the border, human migration, gender and the city.

GEO 900 Selected Topics (1-6 Credits)
Maxwell
Exploration of a topic (to be determined) not covered by the standard curriculum but of interest to faculty and students in a particular semester.
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Repeatable

GEO 970 Experience Credit (1-6 Credits)
Maxwell
Participation in a discipline- or subject-related experience. Student must be evaluated by written or oral reports or an examination. Limited to those in good academic standing. Permission, in advance, of assigned instructor, department chair, or dean.
Repeatable

GEO 990 Independent Study (1-6 Credits)
Maxwell
Exploration of a problem, or problems, in depth. Individual independent study upon a plan submitted by the student. Admission by consent of supervising instructor(s) and the department.
Repeatable

GEO 997 Master's Thesis (1-6 Credits)
Maxwell
Repeatable

GEO 999 Doctoral Dissertation (1-15 Credits)
Maxwell
Repeatable