GEOGRAPHY (GEOG)

GEOG*1200 Society and Space Fall Only (LEC: 3, LAB: 1) [0.50]
This course introduces key concepts in contemporary Human Geography. The course applies a spatial perspective in exploring a wide ranging series of processes and issues in society. Topics include population growth and migration, models and challenges of urban and rural development, interpretation of cultural landscapes and selected issues relating to social welfare.
Offering(s): Also offered through Distance Education format.
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*1220 Explaining Environmental Change Fall and Winter (LEC: 3) [0.50]
This course introduces foundational concepts for understanding how the world's most pressing environmental problems, such as climate change, biodiversity loss, and water pollution, have their roots in societal structures and processes. It integrates perspectives from both earth system and social sciences and contrasts issues, drivers, and governance approaches from around the world, but with emphasis on Canadian and US examples.
Offering(s): Also offered through Distance Education format.
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*1300 Introduction to the Biophysical Environment Fall and Winter (LEC: 3, LAB: 2) [0.50]
This course provides an introduction to physical geography, focusing on the principles and processes governing climate, landforms, and vegetation systems and their interrelationships and will examine natural and human-induced changes to environmental systems. Laboratories will address techniques of measurement, representation and analysis of environmental systems using maps and satellite imagery, laboratory techniques, and field observation.
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*1350 Earth: Hazards and Global Change Fall and Winter (LEC: 3) [0.50]
This course investigates physical aspects of natural hazards that affect people and society and will focus on the natural systems and processes that cause climate variability and change, floods, earthquakes, volcanoes, landslides, hurricanes, tornadoes and other natural disasters.
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*2000 Geomorphology Fall Only (LEC: 3, LAB: 2) [0.50]
This is an introduction to geomorphology emphasizing weathering, slope and fluvial processes within drainage basins, and glacial and periglacial processes. Field and laboratory techniques will be applied.
Prerequisite(s): 1 of ENGG*1100, ENVS*1050, ENVS*1060, GEOG*1300, GEOG*1350, GEOL*1050, GEOL*1100
Restriction(s): This is a Priority Access Course. Enrolment may be restricted to particular programs or specializations.
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*2030 Environment, Justice and Society Fall Only (LEC: 3) [0.50]
This course examines the ways in which power shapes human-environment relationships at local, regional and global scales. Key topics include environmental justice, colonialism, development, knowledge claims, conflict and cooperation, inequality, and environmental movements. Concepts will be illustrated using cases from the Global South and experiences of racialized communities and Indigenous peoples.
Prerequisite(s): 4.00 credits, GEOG*1220 is recommended
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*2110 Climate and the Biophysical Environment Winter Only (LEC: 3, LAB: 1) [0.50]
The interrelationships between the atmosphere, lithosphere, hydrosphere, and biosphere to produce distinct physical landscapes (climates, soils, vegetation). Emphasis on the role of climate and the flows of energy, water, and biogeochemicals.
Prerequisite(s): GEOG*1300 or GEOG*1350
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*2210 Environment and Resources Winter Only (LEC: 3) [0.50]
This course examines the interrelationships between people and biophysical processes. The main themes are: 1) characteristics of natural resources and processes through which they are developed and used and 2) human response to environmental conditions, including natural hazards and global change. Contemporary Canadian case studies will be presented at the regional and national scales.
Offering(s): Also offered through Distance Education format.
Prerequisite(s): GEOG*1220 is recommended
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*2230 Commodity Chains and Cultures of Consumption Fall Only (LEC: 3) [0.50]
An introduction to the spatial distribution of economic activity. The course examines patterns, processes and problems in extractive activities, manufacturing, marketing and the service sector, including the transportation of commodities and people. The principles of economic location are applied to regional economic analysis and development.
Prerequisite(s): GEOG*1200 or GEOG*1220
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*2260 Applied Human Geography Winter Only (LEC: 3, LAB: 2) [0.50]
This course introduces students to the geographical research process, guiding them through key methodological issues and techniques in human geography. The lab component of the course focuses on data collection using secondary documents, surveys, interviews, and participant observation, as well as both quantitative and qualitative analysis techniques. Lab assignments and class illustrations draw on a range of topics in human geography.
Prerequisite(s): 1 of GEOG*1200, IDEV*1000, (ANTH*1150, GEOG*1220)
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*2420 The Earth From Space Fall Only (LEC: 3, LAB: 2) [0.50]
Students will explore the nature and acquisition of remotely sensed data, including aerial photography and satellite imagery. Various Earth Observation (EO) platforms are introduced, including drones, piloted aircraft and orbital platforms. Students learn about the capabilities and applications of common EO sensors, such as multispectral sensors, radar systems, thermal imaging and scanning LiDAR, and gain practical experience using these data in the lab component.
Prerequisite(s): 0.50 credits in Geography
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*2460 Analysis in Geography Fall Only (LEC: 3, LAB: 2) [0.50]
This course exposes students to quantitative methods used in the study and interpretation of geographic phenomena. Course material and assessments build experience in statistical techniques and their use in research. Major honours students in Geography must complete this course by the end of semester 4.
Prerequisite(s): 0.50 credits at the 1000 or 2000 level in Geography
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*2480 Mapping and GIS Fall and Winter (LEC: 3, LAB: 2) [0.50]
An introduction to the theory and techniques of manipulating and displaying spatial data in a GIS (Geographic Information System). Mapping concepts such as scale, co-ordinate systems, map projections, symbolization and vector data encoding are introduced. Major honours students in Geography must complete this course by the end of semester 4.
Prerequisite(s): 5.00 credits
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*2510 Considering Canada: a Regional Approach Winter Only (LEC: 3) [0.50]
In this course, students consider Canada through a regional lens. It begins by introducing physical landscapes, Indigenous histories, and then settler arrival, colonialism and nation-building. The core of the course explores the country region-by-region, focusing on key human, resource and social-economic geographies. To conclude, students reflect on present-day regional politics and different approaches that may be used to evaluate regional well-being.
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*3000 Fluvial Processes Fall Only (LEC: 3, LAB: 2) [0.50]
This course examines processes and landforms associated with rivers. Particular emphasis is placed on the interaction between water and sediment movement and channel morphology. Case studies of human impact on river systems are presented.
Prerequisite(s): GEOG*2000, (1 of GEOG*2460, STAT*2040, STAT*2120, STAT*2230)
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*3020 Global Environmental Change Summer and Fall (LEC: 3) [0.50]
This course studies the social drivers of global environmental change focusing on dynamic interactions among socio-economic systems, governance institutions, and biophysical processes. Specific attention is given to the causes of climate change, its intersections with other global environmental changes and issues, and implications for people and the places they call home.
Offering(s): Also offered through Distance Education format.
Prerequisite(s): 7.50 credits
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*3030 Media, Digital Technology and Environment Fall Only (LEC: 3) [0.50]
This course examines contemporary transformations in how human-environment relations are monitored and communicated. In particular, it will explore how media firms, digital technologies, and technology users shape responses to challenges like climate change and biodiversity loss. Topics may include media representations of nature, social media and digital devices in environmental campaigns, and new technologies for environmental assessment. Students will develop skills in areas such as discourse analysis, data visualization, and/or social media analytics.
Offering(s): Offered in even-numbered years.
Prerequisite(s): GEOG*2030
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*3050 Development and the City Winter Only (LEC: 3) [0.50]
This course examines different theoretical and policy perspectives of urbanization and urban development, as well as social, economic and environmental living conditions in cities of the global "south". It refers to concrete examples of cities in their national and international context, paying due attention to diversity and the fluidity of urban-rural boundaries. Specific urban development issues, including migration, housing, employment, health and environment are also addressed.
Offering(s): Offered in even-numbered years.
Prerequisite(s): GEOG*2030 or IDEV*2400
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*3090 Gender and Environment Fall Only (LEC: 3) [0.50]
This course introduces feminist scholarship and perspectives to explore men and women's experiences with both the natural and built environment. The course draws on case studies from developing and developed countries to demonstrate the importance of gender difference in understanding human interactions with the environment. Students will observe gendered use, access, knowledge, responsibility and control in rural and urban landscapes.
Offering(s): Offered in odd-numbered years.
Prerequisite(s): 7.50 credits
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*3110 Biogeography Fall Only (LEC: 3) [0.50]
This course focuses on the ecological basis for resource management through the study of the distribution of plants and animals across the Earth's surface. Biogeography expands upon principles from Ecology, Biology, and Physical Geography. Students in this course will learn about ecosystem processes that impact both fauna and flora. Topics may include succession, disturbance, old-growth forests, biodiversity, island biogeography, habitat fragmentation, species introductions, biological control, and climatic change. For each topic, past and current theories, controversies, empirical evidence and implications for resource management are examined.
Prerequisite(s): (1 of GEOG*2460, STAT*2040, STAT*2230), (1 of BIOL*2060, ENVS*2030, GEOG*2110)
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*3210 Indigenous-Settler Relationships in Environmental Governance Summer and Fall (LEC: 3) [0.50]
This course seeks to understand the rationales for, and evolution of, the changing relationship between Indigenous Peoples and the Canadian state in environmental governance. Case studies cover different approaches to management including command and control, co-management, co-governance, biocultural and a variety of legislative and policy tools such as endangered species legislation, environmental impact assessments, and as Indigenous stewardship of traditional territories under natural law. Cases will be drawn from different resource management sectors, from governance to intra-community disputes and legal precedents. Traditional ecological knowledge, as well as our understandings of knowledge systems, will provide an analytical frame for assessing conflict as it arises in environmental governance.
Offering(s): Also offered through Distance Education format.
Prerequisite(s): 1 of GEOG*2030, GEOG*2210, SOC*2280
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*3320 Food Systems: Issues in Security and Sustainability Fall Only (LEC: 3) [0.50]
Many argue that current food systems are unsustainable and will be unable to provide adequate and appropriate nutrition for the global society in the 21st century. This course will explore this issue by taking a global and historic perspective to understand the structure and functioning of agriculture and food systems. We will pay particular attention to the interaction of farms with social, economic, institutional and environmental forces that combine to shape patterns of agricultural activity. In particular, we will explore ways of assessing the extent to which different kinds of food systems are "sustainable" as well as assess how resilient and robust these food systems are to environmental problems (such as climate change) and economic upheaval.
Prerequisite(s): 7.50 credits
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*3420 Remote Sensing of the Environment Winter Only (LEC: 3, LAB: 2) [0.50]
This course provides students with the concepts and technical expertise used to analyze satellite imagery in the field of remote sensing. Students will gain hands-on experience processing multispectral, thermal, and radar images and LiDAR 3D point clouds using advanced analytical software to study environmental processes and systems. The integration of remote sensing and Geographical Information Systems (GIS) is emphasized.
Prerequisite(s): 10.00 credits including GEOG*2420
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*3430 Geomatics for Environmental Analysis Fall Only (LEC: 3, LAB: 2) [0.50]
This course enables students to explore the theory and techniques of GIS and remote sensing in applications related to the study of environmental processes. Focus will be on geomorphometry, spatial hydrology and catchment process modelling. Students reflect on the impacts of uncertainty in source data and the role of digital elevation model data processing techniques in geomatics-based analysis. Students will be trained in application areas including catchment mapping, stream network analysis, soil moisture modelling, automated soils mapping techniques, among other applications.
Offering(s): Offered in odd-numbered years.
Prerequisite(s): GEOG*2420 or GEOG*2480
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*3440 GIS for Decision-Making Fall Only (LEC: 3, LAB: 2) [0.50]
This course trains students to use geomatics techniques as part of a decision-making process, and to critically reflect on the relationship between geospatial analysis and policy decisions in government, community, and corporate settings. Topics may include: public and participatory GIS; webmapping and data visualization; database design; multi-criteria evaluation; scenario mapping. Students will gain familiarity with open and industry mapping software, apply these in practice to issues such as habitat conservation and sea level rise, and reflect on subjects such as uncertainty that challenge spatial data-driven decision-making.
Offering(s): Offered in even-numbered years.
Prerequisite(s): GEOG*2480
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*3480 GIS and Spatial Analysis Fall and Winter (LEC: 3, LAB: 2) [0.50]
This course focuses on the use of raster and vector-based geographic information systems to analyze spatial data. Topics include map digitizing, data query and overlay, spatial interpolation, multi-criteria evaluation, least cost pathway determination and digital elevation models. This course requires some familiarity with numerical methods and computer operations.
Prerequisite(s): 10.00 credits, including GEOG*2480
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*3490 Tourism and Sustainability Winter Only (LEC: 3) [0.50]
An integrative perspective on tourism as a multi-scalar phenomenon, addressing diverse interactions between people and places. Emphasis is on the environmental, economic and cultural impacts of various types of tourism, and approaches to managing these impacts, drawing on geographical theories.
Offering(s): Offered in odd-numbered years. Also offered through Distance Education format.
Prerequisite(s): 7.50 credits
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*3600 Geography of a Selected Region Unspecified (LEC: 3) [0.50]
The study of an area which will include topics in physical, economic, social and historical aspects of geography.
Prerequisite(s): 7.50 credits
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*3610 Environmental Hydrology Winter Only (LEC: 3, LAB: 1) [0.50]
An introductory course in hydrology, the study of water in the environment. Emphasis is placed on understanding and modeling the hydrologic cycle. Topics include hydrologic processes, water resources, and case studies of freshwater systems.
Prerequisite(s): 7.50 credits, including (GEOG*2000 or GEOG*2110), (1 of GEOG*2460, STAT*2040, STAT*2230)
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*4110 Environmental Systems Analysis Fall Only (LEC: 3, LAB: 6) [1.00]
This course takes an integrated systems approach to solving issues of environmental evaluation, impact and development. It focuses on the biophysical and biocultural components of the environment, with attention to disturbance and the influence of scale in integrated systems. A variety of examples will be examined, with the opportunity for students to explore one or more in-depth.
Prerequisite(s): GEOG*3110 or GEOG*3610
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*4150 Catchment Processes Winter Only (LEC: 3, LAB: 2) [0.50]
This course examines and applies advanced geomorphology concepts and theories that are used to explain and understand how water shapes the Earth's surface. Fluid mechanics in fluvial environments are evaluated through discussions, computational modeling, and lab experiments.
Prerequisite(s): GEOG*3000
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*4200 Social Life of Cities Winter Only (LEC: 3) [0.50]
This course will investigate the ways that the forms and functions of modern cities contribute to urban social life in the Global North by examining spatial patterns and processes of economic restructuring, social dynamics and political change in Canadian and non-Canadian cities. Students discuss and interpret evolving urban forms from a geographical perspective. The central questions in the course are as follows: How are societal values and power relationships expressed through the built environment? How are social relationships influenced by urban systems and spaces, and how do human interactions in turn influence the fabric of the city?
Prerequisite(s): GEOG*2260, (GEOG*3050 recommended)
Restriction(s): GEOG*3400
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*4210 Environmental Governance Fall Only (LEC: 3, LAB: 1) [0.50]
This course builds knowledge and experience in the processes, politics and institutional arrangements that society uses to make decisions about the environment. Designed for emerging environmental professionals, it incorporates advanced study of contemporary approaches to environmental governance with consideration for strengths, weaknesses and criticisms of environmental governance as it is designed and applied at various scales.
Prerequisite(s): GEOG*3210
Restriction(s): Restricted to students in BAH.EGOV, BAH.EGOV:C, BAH.GEOG, BAH.GEOG:C, BSCH.EG, BSCH.EG:C, BSES.ECOL, BSES.ECOL:C, BSES.ERM and BSES.ERM:C.
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*4220 Local Environmental Management Winter Only (LEC: 3) [0.50]
This course explores local environmental management from two perspectives: state-driven (where local government agencies or forums created by governments are used) and non-state driven (where local actors come together in new governance arrangements to undertake environmental management). Through comparing and contrasting these broad perspectives in an experiential learning setting, the course builds understanding of a key trend in environmental governance.
Prerequisite(s): GEOG*3210
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*4230 Environmental Impact Assessment Winter Only (LEC: 3) [0.50]
This course examines environmental impact assessment (EIA) from philosophical, methodological and institutional perspectives. The evolution of EIA in Canada will be the focus. Case studies illustrating major issues and applications will be presented at a variety of geographical scales. The preparation and presentation of a research project is an integral component.
Prerequisite(s): GEOG*3210
Equate(s): ENVS*4220
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*4390 Seminar in Rural Geography Winter Only (LEC: 3) [0.50]
This course surveys themes and issues in contemporary rural geography. Specific attention is given to the processes of restructuring and change in rural systems in Canada and other developed economies. Themes include transformations in the use of rural land, the new rural economy, restructuring in service delivery, and the sustainability of rural communities and systems.
Prerequisite(s): GEOG*2260, GEOG*3320
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*4480 Applied Geomatics Winter Only (LEC: 3, LAB: 6) [1.00]
This course adopts a project-oriented approach to the application of Geographic Information Systems (GIS) and remote sensing in spatial analysis. Students will have the opportunity to design and implement a research project using geomatics techniques to investigate a problem in any area of Geography.
Prerequisite(s): GEOG*3420 or GEOG*3480
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*4690 Geography Field Course Fall Only (LEC: 3, LAB: 6) [1.00]
This course provides an opportunity for upper-year students to further enhance their learning experience through place-based learning and the lens of Geography, Environment and Geomatics. This course focuses on developing research proposals and project design for a particular topic related to the place-based learning location for a particular offering. Students build on geographical research methods introduced and developed in second and third year courses. This course can include on-campus and off-campus learning, with field locations varying by offering. Examples of previous locations, as well as information on the location and cost of the field course is available from the department in the winter semester prior to each fall offering.
Prerequisite(s): 12.50 credits
Restriction(s): Restricted to students in BSCH.EG, BAH.EGOV, BAH.GEOG and BSES with an overall average of at least 70% at the time of registration. Instructor consent required.
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*4880 Contemporary Geographic Thought Winter Only (LEC: 3) [0.50]
A critical overview of the evolution and current status of Geography. Particular emphasis will be given to the variety of approaches and convergence and divergence within the discipline. The interaction between human and physical geographers and their approaches to issues and the subject will be analyzed.
Restriction(s): Restricted to major honours students in Geography at semester 6 or above.
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph

GEOG*4990 Independent Study in Geography Summer, Fall, and Winter (LAB: 3) [0.50]
The independent study option is designed to provide senior undergraduate students with an opportunity to pursue library or field research under faculty supervision and to prepare a research report. Formal agreement between the student and the faculty supervisor is required, as is approval of the department chair.
Restriction(s): Restricted to students in BSCH.EG, BSCH.EG:C, BAH.EGOV, BAH.GEOG and BSES with an overall average of at least 70% at the time of registration. Instructor consent required.
Department(s): Department of Geography, Environment and Geomatics
Location(s): Guelph