Department of earth, Environmental and Geographical Sciences

Winter 2026 Advising for Fall 2026 Registration

Welcome prospective, current, and graduating EEGS students

Department Mission

We prepare students for their future careers by cultivating critical thinking and science-based inquiry skills. Students develop foundations in earth, environmental, and geographical sciences to analyze local and global issues challenging the human-environment relationship. EEGS faculty members engage in active research, professional development, and service to enhance quality teaching and provide an interdisciplinary curriculum.

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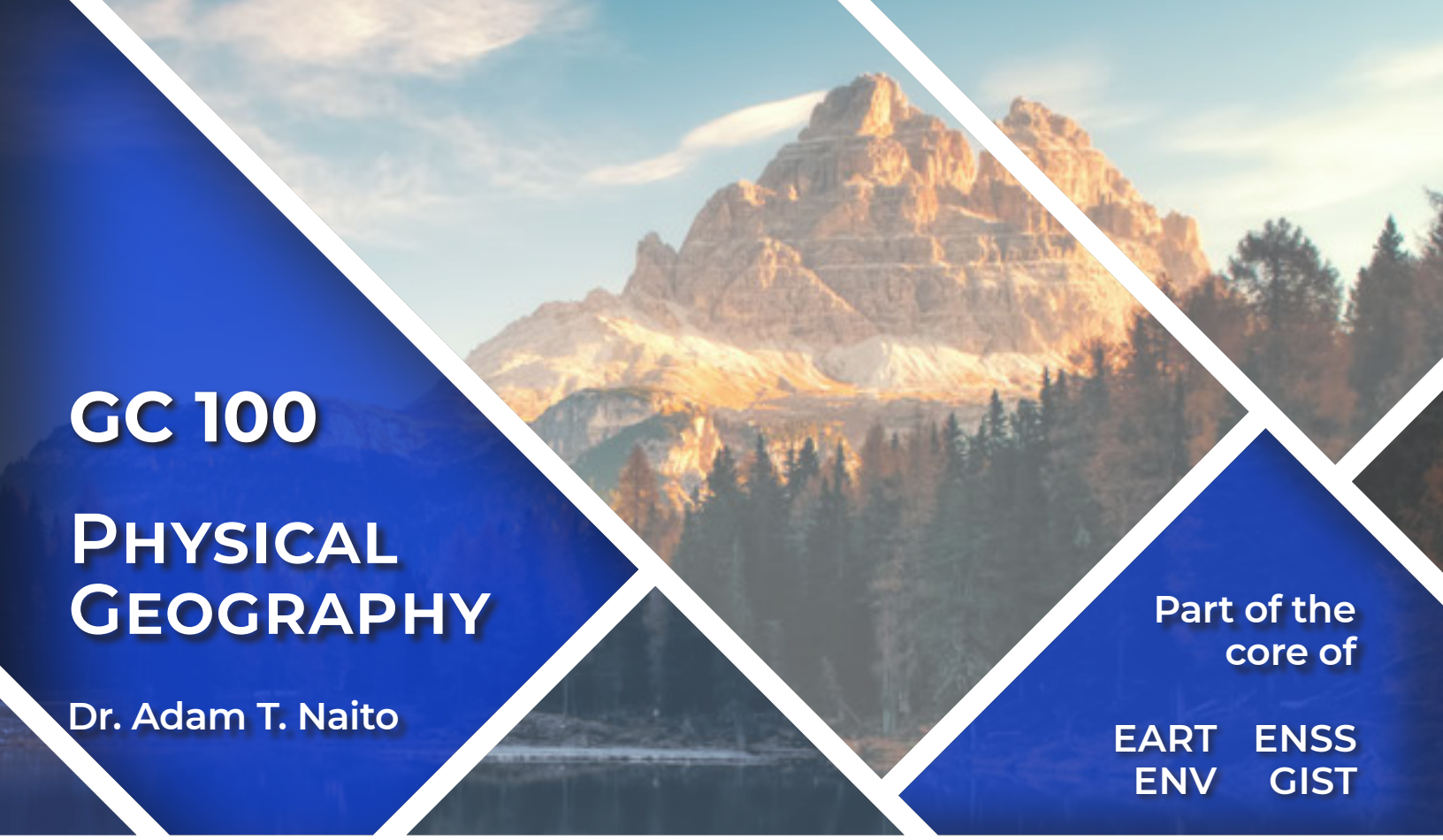

GC 100

Physical Geography

Dr. Adam T. Naito

Part of the core of

EART ENSS
ENV GIST

Course Description

This course examines interactions between the atmosphere, the Earth's surface, water, and living things, as well as the role of humans in those interactions. Students will be able to explain the processes that drive Earth's seasons, weather, climates, biomes, and landforms, and how they are impacted by human activities. Students will learn how to develop research questions, collect data, and produce and interpret graphs, maps, and figures relating to major geographic patterns and their processes.

Satisfies: Scientific Inquiry (SCII) General Education requirement.

Prerequisites: none

01: MTWR 9:00 AM-9:50 AM

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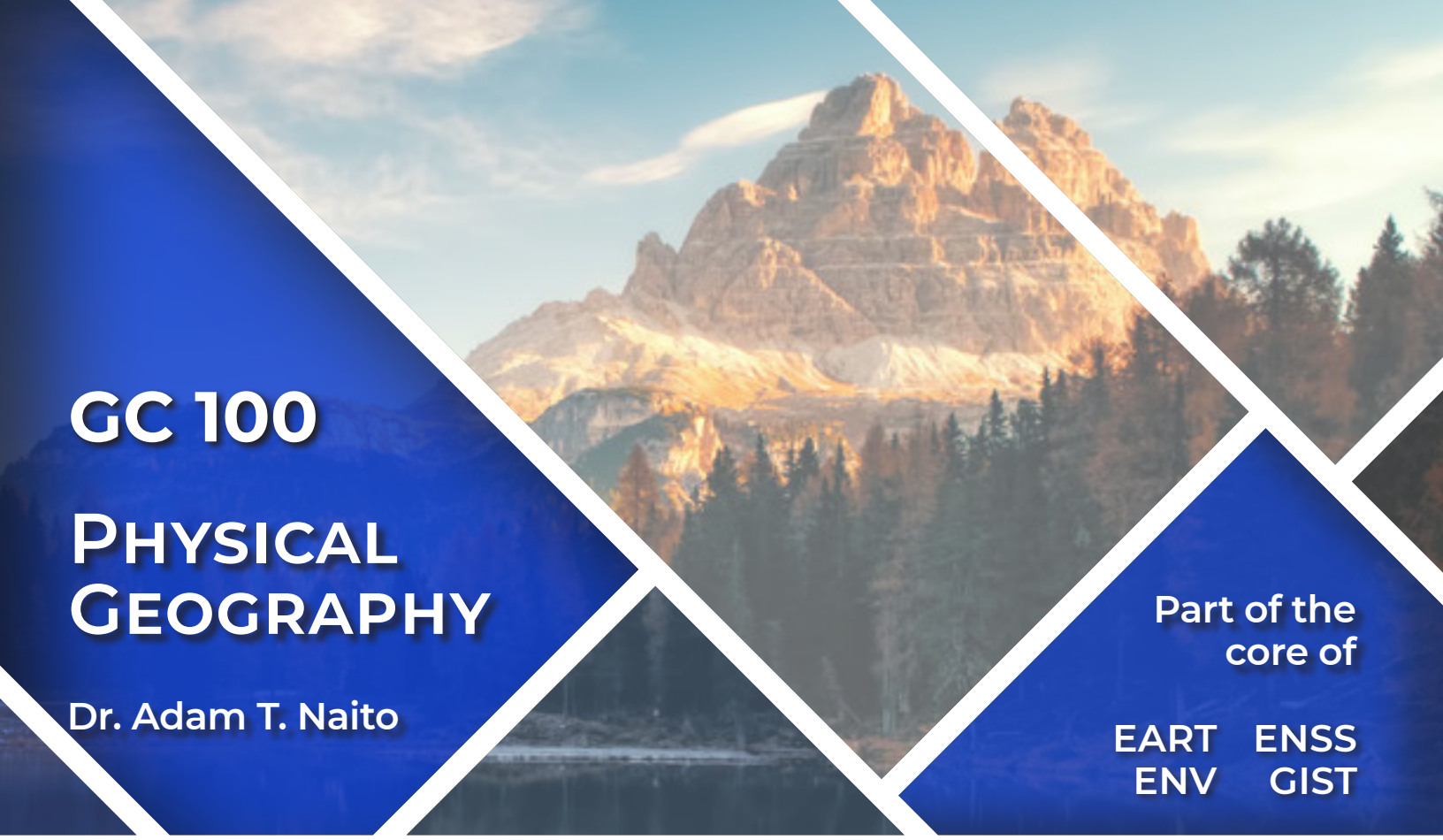

GC 100

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Course Description

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Satisfies: Scientific Inquiry (SCII) General Education requirement.

Prerequisites: none

02: MTWR 12:00 PM-12:50 PM

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GC 101

Intro to Environmental Science

Staff

Part of the core of

EART ENSS
ENV GIST

Course Description

This course introduces students to Environmental Science and its role in ensuring a sustainable future. Students will discuss and synthesize complex environmental issues while drawing from their own experiences and other disciplines. Students also examine the science behind those issues involving both social and ecological systems. Course assignments strive to show students how to make decisions based upon their own assessment of scientific evidence.

Satisfies: Integrative Thinking (INTT) General Education requirement.

Prerequisites: none

01: MW 6:00 PM-7:40 PM

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GC 164

Human Geography

Dr. Jelili Adebiyi

Part of the core of

ENSS

Course Description

Human Geography introduces students to the systematic study of locations, patterns, and processes that shape human understanding, use, and alteration of Earth's surface and their environments. Students will explore human activities around the world and in their own environments. They will explain how people affect places, how places affect people, and how geography impacts aspects of their daily lives. Students will also learn about the methods and tools geographers use in their research and practice.

Satisfies: Social Responsibility in a Diverse World (SOCR) and Global Citizenship (GCIT) General Education requirements.

Prerequisites: none

01: TR 3:00 PM - 4:40 PM

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GC 164

Human Geography

Dr. Weronika Kusek

Part of the core of

ENSS

Course Description

Human Geography introduces students to the systematic study of locations, patterns, and processes that shape human understanding, use, and alteration of Earth's surface and their environments. Students will explore human activities around the world and in their own environments. They will explain how people affect places, how places affect people, and how geography impacts aspects of their daily lives. Students will also learn about the methods and tools geographers use in their research and practice.

Satisfies: Social Responsibility in a Diverse World (SOCR) and Global Citizenship (GCIT) General Education requirements.

Prerequisites: none

50: Online Asynchronous

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GC 202

Soils

Dr. Matt Van Grinsven

Elective option for
ir and Water Resources,
Applied Geology, and
Natural Hazards
concentrations of EART

Part of the
core of ENV

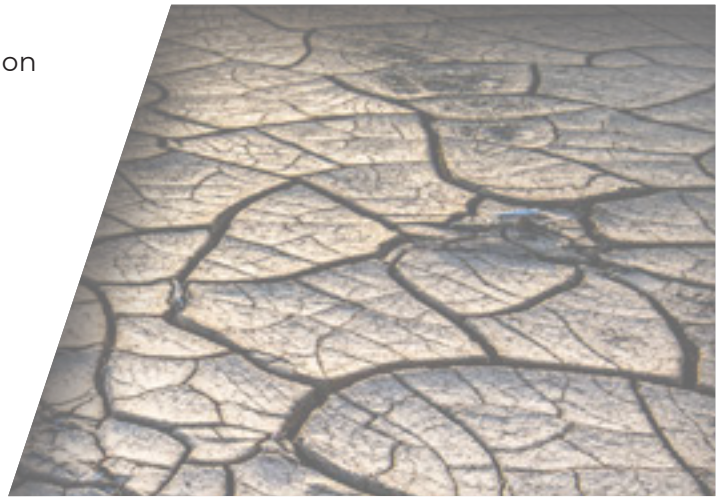
Elective option for ENSS

Course Description

This course is designed to provide a comprehensive and applied understanding of soil physical, biological, and chemical properties useful for environmental science, natural resource management, and agronomy related outcomes. This course will use a variety of professional measurement, assessment and analysis methods to examine soil biogeochemical processes that support conservation and management of soil resources.

Notes: Field work may be required. Contact instructor for more information.

Prerequisites: GC 100 or GC 101; or instructor's permission



70: Hybrid: W 5:00 PM-6:40 PM
01: Lab: R 9:00 AM-10:50 AM
02: Lab: R 12:00 PM-1:50 PM
03: Lab: F 9:00 AM-10:50 AM
04: Lab: F 12:00 PM-1:50 PM

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GC 205
Intro to Geographic Research

Dr. Ryan Stock

Part of the core of

EART ENSS
ENV GIST

Course Description

This course is designed to provide a basic introduction to the field of geography and related environmental fields. Students will learn the history of geography and its major theoretical paradigms and will engage in methodological approaches to study geographical phenomena. Students will build essential skill-sets including data collection methods, data analysis, research design, data visualization and scientific communication.

Notes: Field work may be required. Contact instructor for more information.

Prerequisites: EN 211, and either GC 100 or GC 164

01: TR 10:00 AM-11:40 AM

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GC 220

Economic Geography

Dr. Ryan Stock

Part of the core of

ENSS

Course Description

This course is designed to provide students an exploration of the social, political and spatial dimensions of economic phenomena. Students will examine the environmental aspects of economic and political systems, inequality, international development, power relations, commodity chains and economic change. Students will also study global problems and develop local solutions through project-based assignments.

Prerequisites: none

01: MW 10:00 AM-11:40 AM

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GC 225

Intro to Maps

Mr. Richard Ziegler

Part of the core of

EART ENSS
ENV GIST

Course Description

This course introduces students to map reading, analysis and interpretation, with special emphasis on USGS topographic maps. Students will develop foundational knowledge regarding map data types, map development, map reading and analysis. Additionally, they will learn to create topographic profiles, work with scale, become familiar with three different coordinate systems, determine bearings, calculate distance and areal extents manually and with GPS, and examine land partitioning using the Public Land Survey System.

Notes: Field work may be required. Contact instructor for more information..

Prerequisites: MA 100 or higher

01: Lec: F 11:00 AM-11:50 AM
02: Lab: T 9:00 AM-10:40 AM
03: Lab: T 12:00 PM-1:40 PM
04: Lab: F 9:00 AM-10:40 AM

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GC 235

Quantitative Methods

Dr. Robert Legg

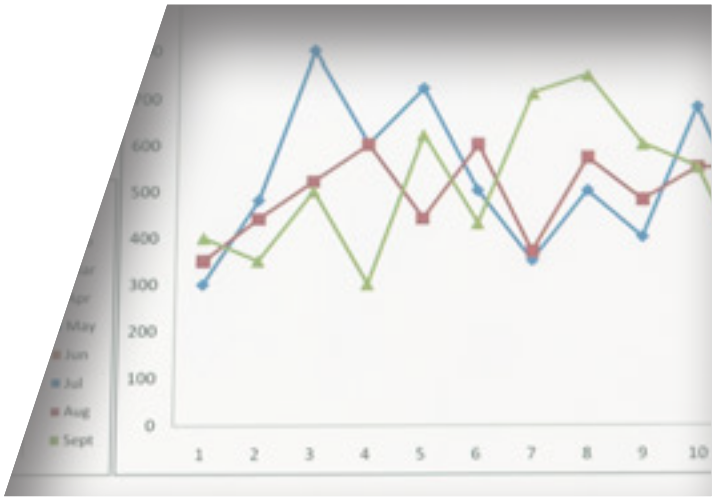
Part of the core of

EART ENSS
ENV GIST

Course Description

This course introduces students to classic and spatial statistical concepts and techniques relevant to and used by environmental scientists, geographers, and geoscientists. Students will examine statistical concepts and methods and their theoretical underpinnings, and then apply their quantitative skills using computer-based tools and software. Students will assemble and analyze data sets and summarize their interpretations.

Prerequisites: DATA 109, or MA 111, or mathematics placement at MA 115 or higher.



01: MW 3:00 PM-4:40 PM

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GC 255

Physical Geology

Staff

Part of the core of

EART ENV

Course Description

This course introduces students to geology, the study of Earth's structure and composition, its history and the processes that shape it. Students will learn to identify minerals and rocks, investigate rock formation processes, plate tectonics, volcanism, earthquakes and the development of various topographic landforms. Additionally, students will learn to read topographic and bedrock geologic maps, and evaluate stream and groundwater flow, seismic data and sand dune movement.

Notes: Field work may be required. Contact instructor for more information.

Satisfies: Scientific Inquiry (SCII) and Laboratory (LAB) General Education requirement.

Prerequisites: none

01: Lec: M 11:00 AM-12:40 AM
W 11:00 AM-11:50 AM
02: Lab: W 12:00 PM-1:40 PM

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GC 269

Intro to Sustainability

Dr. Sarah Mittlefehldt

Part of the core of

ENSS

Course Description

This course helps students answer urgent questions about sustainability, such as: “How can we meet the needs of our current population without sacrificing the needs of future generations?” Students will investigate environmental problems while also designing and implementing sustainable solutions. This course includes field-based experiences and a community-based project, allowing students to contemplate global sustainability while implementing local solutions.

Notes: Field work may be required. Contact instructor for more information.

Prerequisites: EN 211, GC 164, and at least one of GC 100, GC 101 or GC 255.

01: TR 1:00 PM-2:40 PM

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GC 310

Urban Geography

Dr. Weronika Kusek

Part of the core of

ENSS

Course Description

Urban Geography introduces students to concepts pertinent to the city, its origins, contemporary form, and urban challenges. Students will examine the city and urban phenomena in both the American context and international setting, and will be able to explain social, economic, demographic, and political forces that alter urban environments. Students will explore sustainability initiatives introduced by cities to address environmental challenges. Students will also apply methods and tools geographers use in research and practice.

Prerequisites: GC 164 or GC 220, and GC 205

01: MW 8:00 AM-9:40 AM

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GC 317

Geography of Food Systems

Dr. Jelili Adebiyi

Elective option for ENSS

Course Description

This course is designed to provide a broad understanding of the global agrifood system. We focus on the social and environmental aspects of food production systems and commodity chains, inequality and access and economic and policy dimensions. Students will also engage in field-based experiences and group projects that enable them to interact with and impact the global food system at the local scale.

Prerequisites: EN 211 or GC 205 or instructor permission.

01: TR 12:00 PM-1:40 PM

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GC 320

Environmental Policy & Regulation

Dr. Sarah Mittlefehldt

Part of the core of

ENSS ENV

Course Description

This course introduces students to public policy and regulatory processes in the United States with a focus on federal and state involvement in environmental decision-making. Students will examine the history of environmental policy and relevant environmental laws. Students will also explore issues related to international environmental law with an emphasis on climate policy.

Prerequisites: GC 100 or GC 101 or junior standing

01: MW 10:00 AM-11:40 AM

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GC 335
Geographic Information Systems

Dr. Robert Legg

Part of the core of

EART ENSS
ENV GIST

Course Description

This course introduces students and professionals to foundational ideas underpinning the growing field of Geographic Information Systems (GIS). Students will examine fundamental concepts related to the creation, management, analysis, and visualization of geographic information. Students will then apply these concepts using industry-standard software to assemble and analyze data, and develop visualizations to communicate, solve problems, and make decisions. These skills will prepare students for work in a variety of job sectors.

Prerequisites: GC 225 or junior standing or instructor permission

01: TR 3:00 PM-4:40 PM

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GC 335
Geographic Information Systems

Dr. Robert Legg

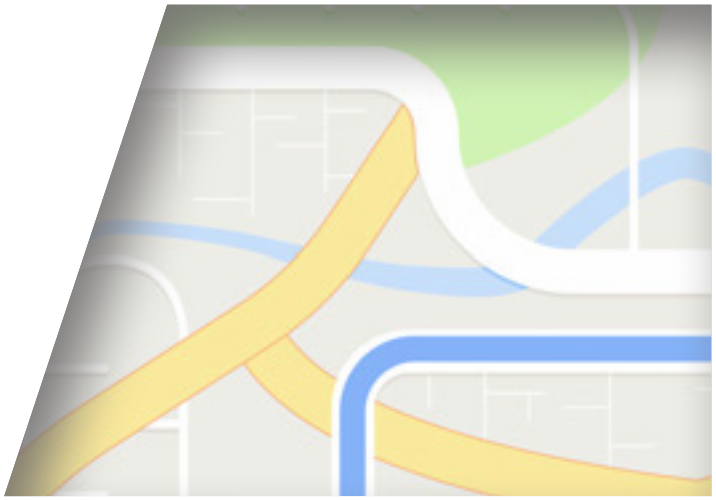
Part of the core of

EART ENSS
ENV GIST

Course Description

This course introduces students and professionals to foundational ideas underpinning the growing field of Geographic Information Systems (GIS). Students will examine fundamental concepts related to the creation, management, analysis, and visualization of geographic information. Students will then apply these concepts using industry-standard software to assemble and analyze data, and develop visualizations to communicate, solve problems, and make decisions. These skills will prepare students for work in a variety of job sectors.

Prerequisites: GC 225 or junior standing or instructor permission



50: Online Asynchronous

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GC 337

Cartographic Design

Dr. Robert Legg

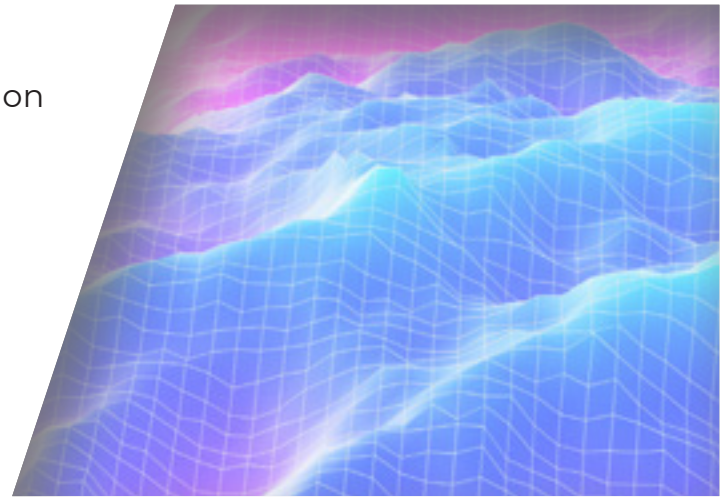
Elective option for Earth Systems Analysis concentration of EART

Part of the core of GIST

Course Description

This course explores the art and science of representing a geographical area on a map. With GIS software, students analyze and visualize spatial data using traditional and cutting-edge techniques. Students apply principles of cartographic design to further their technical expertise in spatial science by creating web maps, thematic maps, cartographic figures for reports, and topographic maps using GIS data from various sources. Students develop portfolios of maps that are aesthetically appealing, practical, and effective.

Prerequisites: GC 335, or instructor's permission



01: Lec: M 11:00 AM-11:50 AM
Lec: W 12:00 PM-1:40 PM
02: Lab: M 12:00 PM-1:40 PM

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GC 376

Field Geology

Mr. Richard Ziegler

Part of the core of

EART

Course Description

This course provides students with the opportunity to learn and experience field data collection techniques to supplement their knowledge of geology, geologic processes, petrology and geomorphology. Students will travel to geological sites in Marquette County to learn to describe rock outcrops, collect strike and dip data, conduct level loop surveys, prepare field maps, sample soil on a drill rig, collect depth-to-groundwater data, and perform groundwater pump tests.

Field work may be required. Contact instructor for more information.

Offered: Contact department for information.

Prerequisites: GC 225 and GC 255.

01: Lec: M 8:00 AM-9:40 AM
W 8:00 AM-8:50 AM
02: Lab: W 9:00 AM-10:40 AM

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GC 385

Weather & Climate

Staff

Part of the core of EART

Elective option for Pollution Control and Water Resources concentrations of ENV

Course Description

This course provides students with an advanced examination of the science of the Earth's atmosphere. Students will develop their knowledge relating to the processes in the atmosphere that are responsible for weather and longer term climate patterns. In addition, students will examine and interpret different types of scientific and meteorological data, the natural and human-made causes of climate variations and change, as well as the interactions between the atmosphere and human activities.

Prerequisites: GC 100, MA 111 or higher, or instructor permission

01: Lec: T 10:00 AM-11:40 AM
Lec: R 10:00 AM-10:50 AM
02: Lab: R 11:00 AM-12:40 PM

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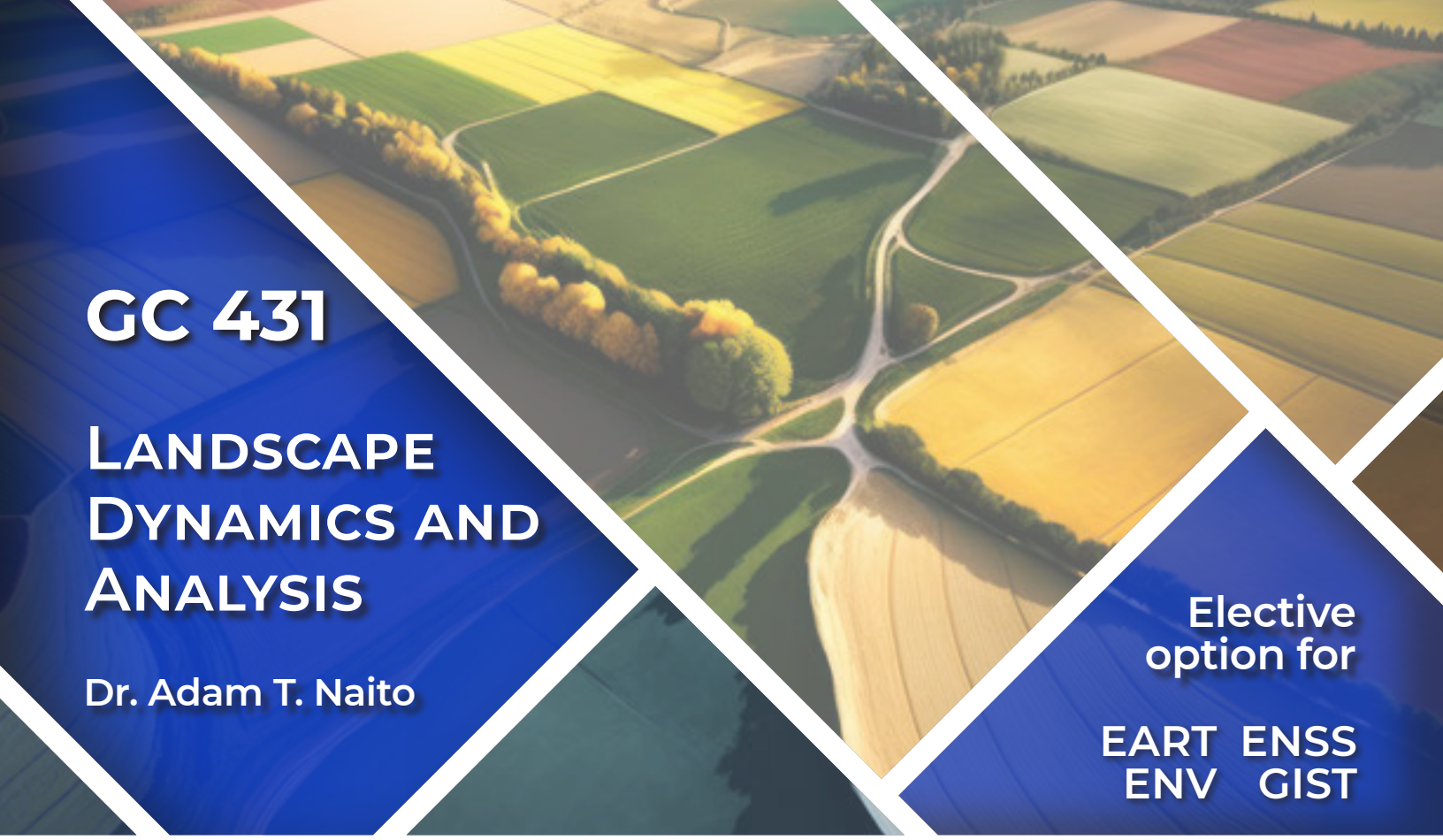

GC 431

Landscape Dynamics and Analysis

Dr. Adam T. Naito

Elective option for

EART ENSS
ENV GIST

Course Description

This course introduces students to fundamental topics in landscape ecology, the field concerned with the analysis of the relationship between ecological processes and spatial patterns on the Earth's surface at landscape scales. Students will become proficient with key concepts, methods of analysis, and their importance in land management and conservation. Students will use analysis operations and their theoretical underpinnings to explore pattern-process relationships relating to vegetation, climate, habitat fragmentation, fire, and invasive species.

Notes: Field work may be required.

Prerequisites: GC 100 or BI 112, and GC 335, or instructor permission

01: Lec: M 3:00 PM-3:50 PM
W 3:00 PM-4:40 PM
02: Lab: M 4:00 PM-5:40 PM

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GC 444
GN 444

Gender and Environment

Dr. Ryan Stock

Elective option for

ENSS

Course Description

This course explores gender and the environment from an intersectional perspective. Through case studies ranging from the local to the global scale, we will discuss power, politics, identities, inequalities, social movements and ecological crises. This interdisciplinary course is for environmentalists, feminists, and any student curious about the interconnections between global environmental change and gender relations.

01: TR 1:00 PM-2:40 PM

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GC 465

Hydrology

Dr. Matt Van Grinsven

Required for Air and Water Resources concentration of EART

Elective option for Applied Geology, Natural Hazards, and Earth Systems Analysis concentrations of EART

Required for Water Resources concentration of ENV

Elective option for Pollution Control and Remediation and Natural Resources concentrations of ENV

Course Description

Hydrology provides students with an advanced understanding of physical and chemical water properties and how they relate to the Earth and environmental sciences. This course examines storage and transport of water in the ground, on the surface, and in the atmosphere, as well as the human dimensions of water resources, including management, water quality and natural hazards. Students will be able to perform professional hydrological sample collection, data analysis and resource assessment techniques. Students will attend formal lectures infused with informal discussions and applied exercises, and will gain professionally relevant knowledge skills and abilities through field-, analytical-, and computation-based labs.

Notes: Field work is required. Contact instructor for more information.

Prerequisites: GC 100 or GC 101 or BI 210, MA 111 or higher, and junior standing, or instructor permission.

70: Hybrid: R 1:00 PM-2:40 PM

01: Lab: R 3:00 PM-4:40 PM

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GC 488

Earth and Environment Capstone Research

Staff

Part of the core of

EART ENSS
ENV GIST

Course Description

The Earth and Environmental Science Capstone Research course enables students to leverage upon the knowledge, skills, and abilities they have accumulated as majors in Earth Science or Environmental Science. Through formal lectures, discussions, exercises, and hands-on activities, students will learn how to execute a research design, identify data collection strategies, interpret and evaluate scientific data, and comprehend peer-reviewed research, culminating in the execution and presentation of their own professional research project.

Notes: Field work may be required. Contact instructor for more information.

Prerequisites: GC 205, GC 235, GC 335, 24 GC credit hours, and junior standing, or instructor permission

01: F 9:00 AM-12:20 PM

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GC 489

Human-Environment Capstone

Dr. Sarah Mittlefehldt

Part of the core of

EART ENSS
ENV GIST

Course Description

The Human-Environment Capstone course enables students to apply the knowledge, skills and abilities they have developed as majors in geography- and environmental-related disciplines. Through lectures, discussions, exercises and hands-on activities, students will examine peer-reviewed research relating to human-environment relationships. Students will develop a research question, design a project, collect data, interpret and evaluate information and summarize the findings of their final capstone project orally and in writing. This course also includes professional development opportunities.

Notes: Field work may be required. Contact instructor for more information.

Prerequisites: GC 205, GC 235, 24 GC credit hours, and junior standing, or instructor permission

01: TR 10:00 AM-11:40 AM

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GC 501

Seminar in Sustainability

Dr. Jelili Adebiyi

Part of the requirements of

MS, SUSTAINABILITY program

Course Description

This seminar course provides a broad survey of sustainability science, the discipline that explores how interactions between humans and the environment affect our ability to meet the needs of current and future generations. Students will be introduced to the field's fundamental themes, current developments and debates, and unresolved questions through critical discussion of literature and presentations. They will begin to integrate ideas from disciplines such as Earth System Science, resource economics, geography, and development studies.

Prerequisites: Graduate standing or senior standing with instructor permission.

Co-requisites: None

01: TR 12:00 PM-1:40 PM

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GC 531

Landscape Dynamics and Analysis

Dr. Adam T. Naito

GC elective for the following tracks

Natural Resource Management
Community Development & Planning
Spatial Data Science
Individualized

Course Description

This course introduces students to fundamental topics in landscape ecology, the field concerned with the analysis of the relationship between ecological processes and spatial patterns on the Earth's surface at landscape scales. Students will become proficient with key concepts, methods of analysis, and their importance in land management and conservation. Students will use analysis operations and their theoretical underpinnings to explore pattern-process relationships relating to vegetation, climate, habitat fragmentation, fire, and invasive species.

Notes: Field work may be required.

01: Lec: M 3:00 PM-3:50 PM
W 3:00 PM-4:40 PM
02: Lab: M 4:00 PM-5:40 PM

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GC 544

Gender and Environment

Dr. Ryan Stock

GC elective for the following tracks

Community Development & Planning

Sustainability Leadership

Individualized

Course Description

This graduate-level course explores gender and the environment from an intersectional perspective. Through case studies ranging from the local to the global scale, we will discuss power, politics, identities, inequalities, social movements and ecological crises. Building upon critical debates and theoretical frameworks from the fields of political ecology, feminist geography, gender and women's studies, ecological anthropology and environmental sociology, this course strives to engender your analytical and creative abilities to solve gender-based environmental problems at the local scale. In the process, we will further develop professional skill-sets that include communications, writing, programming, design, debate, research. and public speaking.

Prerequisites: Graduate standing
Co-requisites: None

01: TR 1:00 PM-2:40 PM

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