

Environment & International Affairs (ENIA)

ENIA 4000 Global Envr PoliticsSecurity 3 Credits

This course examines environmental politics from an international perspective. It will include an introduction to key theories, actors, and institutions. It will also introduce students to key ethical debates and principles of international environmental justice. Ultimately, it will familiarize students with the politics of environmental problems including climate change, biodiversity loss, and pollution and how these problems affect various dimensions of security.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

ENIA 5000 Global Envr PoliticsSecurity 3 Credits

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Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

ENIA 5050 Sci of Glb Envr Challenges I 0-4 Credits

This foundational science course includes fundamentals of chemical, physical and the natural sciences, and applications to key global policy challenges. The course includes an introduction to the scientific method and students will gain a science-based understanding of topics relevant to the MS-EIA program such as transboundary air pollution, ozone depletion, climate change, and changes in the cryosphere and the biosphere. It also includes an applied laboratory component with experiential and immersive learning opportunities.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

ENIA 5051 Sci of Glb Envr Challenges II 0-4 Credits

This foundational science course includes fundamentals of chemical, physical and the natural sciences, and applications to key global policy challenges. The course includes an introduction to the scientific method and students will gain a science-based understanding of topics relevant to the MS-EIA program such as transboundary air pollution, ozone depletion, climate change, and changes in the cryosphere and the biosphere. It also includes an applied laboratory component with experiential and immersive learning opportunities.

Level: Graduate, Undergraduate

Prerequisites: ENIA 5050

Grading: Main Campus (UGrad, Grad)

ENIA 5100 Environmental GIS 1.5 Credits

Environmental GIS is an introductory course covering the theory and practical skills known as Geographic Information Systems (GIS) in the context of environmental science, management, and conservation. This class combines geography and computer science to address contemporary environmental challenges using spatial analysis techniques. Students will explore the fundamental concepts of GIS, including spatial data acquisition, manipulation, analysis, and visualization, with a specific focus on environmental applications. They will learn to critically evaluate maps and environmental datasets. They will use QGIS software to analyze data and create maps, plots, and statistics for a range of audiences.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to students with a program in Environment Int'l Affairs, Environment Int'l Affairs, Environment Int'l Affairs or Environment Int'l Affairs.

Enrollment is limited to Graduate level students.

ENIA 5101 Environmental GIS 3 Credits

Geographic Information Science (GIS) has emerged as a powerful data visualization and analysis discipline. This course investigates how GIS is currently being used to understand better and address environmental problems, as well as manage and conserve natural resources. Specific topics include air pollution, climate change, biodiversity conservation, forest management, soils management and agriculture, natural hazards, water resources, environmental challenges in the urban environment, and alternative energy production. This course introduces the key concepts and skills of GIS, including coordinate and project systems, building geodatabases, and collecting spatial data, with a specific focus on environmental applications. The students will learn to critically evaluate maps and environmental datasets. Students will have the opportunity to conduct their independent research or work on case studies relevant to the course topics, using GIS data.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Equivalent to ENIA 5100

ENIA 5110 Environmental Remote Sensing 1.5 Credits

Environmental Remote Sensing explores the world of imagery and other data captured by satellites, and how those data are used to understand, monitor, and protect our planet. Students will learn the basic physics of how sensors placed in orbit are able to collect many types of data and how the growing fleet of earth observing satellites is changing science, policy, and international relations. Google Earth Engine will be used to analyze datasets and create maps and other visualizations. Focus will be placed on the current, historic, and potential applications of remote sensing data through student-selected research projects.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to students with a program in Environment Int'l Affairs, Environment Int'l Affairs, Environment Int'l Affairs or Environment Int'l Affairs.

Enrollment is limited to Graduate level students.

ENIA 5115 Sustainable Resilient Systems 1.5 Credits

This seminar course provides an interdisciplinary exploration of sustainable and resilient systems, with a focus on extreme events and climate change. Through the lens of systems thinking, we will move beyond isolated problems to understand the interconnectedness of social, ecological, and technological systems. The course is structured as a series of discussions, case studies, and conversations with guest speakers. Students will engage with a variety of perspectives and methodologies, developing the skills to understand complex systems and contribute to building a more sustainable and resilient future.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

ENIA 5120 Data Science and Analytics 3 Credits

This course introduces students to several core data science concepts. It teaches students how to synthesize disparate, possibly unstructured data to better understand and characterize the world, and to draw meaningful inferences especially related to policy. Topics covered include: the history of data science, successes and failures in data analytics, the data analytics life cycle, data/web scraping, and data characterization. Previous coding experience in the R language is not required.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment limited to students in the MS-ENIA program.

ENIA 5125 Global Policy and Sustainability 1.5 Credits

This graduate course examines how multinational private-sector organizations shape and respond to public policy—especially in food and agriculture—with a focus on sustainability. Students will explore the intersection of corporate strategy, international governance, and global advocacy on climate change and business resiliency. Through case studies, policy design exercises, and analysis of key global forums, students will learn how companies engage governments, multilateral institutions, and civil society to advance business agendas while addressing sustainability challenges.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

ENIA 5130 Arctic Security in 21st Century 3 Credits

During the last decade, the Arctic has been transformed from a scientific backwater to a key strategic area for the United States. This course will elucidate the domestic and international security issues in the Arctic, starting with the Cold War, as part of the global recognition of extensive Arctic resources and challenges due to rapid climate change. In the context of this abruptly evolving strategic environment, the course will cover emerging opportunities in energy, shipping, and mineral extraction as well as challenges such as maintaining effective domain awareness, border security, human displacement, food security, drug trafficking, and national sovereignty claims between allies and competitors of the United States. The course material will be covered from a variety of perspectives including high-level diplomats, government officials, indigenous leaders, law enforcement officers, military leaders, and managers of multi-national corporations. Students will work to solve emergent problems through coursework and a capstone project that will require innovative, multi-disciplinary thinking. The course will have a strong emphasis on international diplomacy and negotiating strategies as most of the future activities in the Arctic will take place in countries like Canada and Russia that share the Arctic Coastline with the United States as well as with non-Arctic nations like China that are looking to take advantage of emerging opportunities.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to students with a program in Environment Int'l Affairs, Environment Int'l Affairs, Environment Int'l Affairs, Environment Int'l Affairs, Science, Tech, Int'l Affairs, Science, Tech, Int'l Affairs, Science, Tech, Int'l Affairs or Science, Tech, Int'l Affairs.

ENIA 5140 Negotiating Environmental Agreements 3 Credits

This course provides an in-depth examination of negotiated instruments as a means of addressing international environmental problems. It focuses on legally binding agreements between states but also explores other types of negotiated instruments which may be non-binding or involve non-state actors. At the end of the course students will apply what they have learned in a mock negotiation.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

ENIA 5150 Advanced Mixed Methods Research 3 Credits

This research methods course is designed to provide students with a broad overview of the knowledge base, traditions, and theories of quantitative, qualitative, and mixed methods research.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

ENIA 5160 Nat-Based Sol Glb Carbn Mkts 3 Credits

This course explores how nature-based solutions (NBS) can address global environmental challenges, with a particular emphasis on carbon markets as a policy and financial mechanism. We will examine how interventions such as reforestation, peatland restoration, blue carbon initiatives, and regenerative agriculture contribute to climate mitigation, adaptation, and biodiversity conservation. We will then analyze how global carbon markets—both compliance and voluntary—are structured, regulated, and incentivized. Students will gain an understanding of the science underpinning these approaches, the evolving global policy landscape (especially under frameworks like the Paris Agreement and post-2020 biodiversity goals), and the opportunities and challenges of leveraging market forces for climate and environmental benefits. This is a dual-level course designed for advanced undergraduate and graduate students majoring in environmental policy, international affairs, or related fields.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

ENIA 5170 The Future of the High Seas 3 Credits

In this course, we will examine the emerging policies and ecologies of the high seas (the 43% of Earth's surface that exists beyond national jurisdiction). We will discuss the future of geoengineering, deep-sea mining, high-seas fishing and associated slavery, midwater fishing, and future protection of the high seas.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

ENIA 5180 SciPol in an Era of Glb Fragn 3 Credits

In today's fragmented world, the science-policy nexus faces unprecedented strain. Climate change, pandemics, and resource competition transcend borders, yet the very institutions designed to coordinate global action—the UN, NATO, the EU, and others—face crises of trust and legitimacy. Scientific evidence must navigate not only uncertainty but also growing nationalism, contested multilateralism, and fractured global governance. This course equips students to critically analyze how science and policy interact under these conditions of fragmentation. We will explore when and why evidence shapes—or fails to shape—decision-making, and what new strategies are emerging to bridge divides. Students will learn to translate complex research into actionable insights, identify institutional pathways for influence, and design policies resilient to political uncertainty. By the end of the semester, students will be able to:

1. Evaluate how fragmentation affects global responses to climate, water, and security challenges.
2. Apply frameworks for navigating the science-policy interface in contested political contexts.
3. Produce concise, actionable policy outputs that anticipate resistance and identify leverage points for cooperation.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

ENIA 5190 Chal of Glb Collectv Env Action 3 Credits

This lecture style course examines the political, economic, and institutional barriers to collective action on urgent environmental challenges such as climate change, biodiversity loss, water scarcity, deforestation, and pollution. Drawing on theories of international relations, political economy, and environmental governance, students will explore why global cooperation on shared ecological threats has proven difficult, and under what conditions collaboration becomes possible.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

ENIA 5200 Global Capstone Seminar 1 Credit

This course is designed to support students as they complete the capstone requirement. Students will discuss their research methods and how they plan to structure the final capstone project, and receive feedback from peers and faculty and their sponsoring clients.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

ENIA 5300 Global Capstone Course 3 Credits

The Global Capstone Course takes place over the summer term and serves as the primary research and analysis phase. Students are assigned to teams to conduct in-depth examinations of contemporary environmental issues, controversies, or policy challenges. Using both quantitative and qualitative research methods, each team develops a set of policy recommendations tailored to the needs of their client, which may range from government agencies and think tanks to NGOs and international organizations. Summer fieldwork, including travel, is encouraged but not required, with limited funding available for approved international projects.

Level: Graduate

Prerequisites: ENIA 5200

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to students with a major in Environment Int'l Affairs, Environment Int'l Affairs, Environment Int'l Affairs or Environment Int'l Affairs.

ENIA 5400 Int Climate Policy Diplomacy 3 Credits

Climate change is a global environmental, social, technological and economic challenge. Responding to this challenge will fundamentally affect energy systems, development strategies, investment patterns, and distributional equity around the world. This course examines the nature of the climate challenge from multiple perspectives in order to frame the climate change policy design process currently being deliberated around the world. We begin by studying the science and impacts of climate change, discerning controversies from uncertainties. We then look to the history of climate diplomacy, followed by an in-depth investigation of the Paris Agreement's NDC model of climate commitments. Students will prepare briefings for the US government examining opportunities for increasing domestic climate ambition in key countries. Students will receive training in energy and emissions modeling software which is used by countries to set climate goals. Other course topics include the evolution of US climate policy, China's role in climate change, climate and trade, and lessons from alternative climate treaties and global environmental politics. Guest speakers (climate policy practitioners) will be incorporated throughout the semester. Some students may have the opportunity to attend COP31 in person, and the rest will attend virtually.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

ENIA 5410 Climate Risk Strategy 3 Credits

Global climate change is a defining risk-management challenge of our time. This course examines the strategic dimensions of three interrelated physical climate risks: extreme heat, floods and drought, that are intensifying in severity and frequency. Together, these risks threaten economies, public health, security and development. They also drive opportunities for innovation in science, technology, and business for a range of viable solutions that reduce buyers' vulnerability. Students will learn the fundamentals of all three, then focus their work in one of three teams—heat, floods, or drought—on a strategic capstone project. Understanding these material risks is increasingly central to public and private strategy and represents a growing opportunity for entrepreneurs and innovative firms.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

ENIA 5420 Economics of the Environment 3 Credits

Former Title: Planetary Economics: Prosperity and Sustainability in a Full World Economists have repeatedly shown how to do more with less by aligning personal incentives with common objectives. In doing so, they have had an instrumental role in the tremendous advancements of humanity and society. But many challenges to improving the human condition do not yield easily to the finely honed tools of economics. Interrelated issues of environment, resources, population, poverty, pestilence, governance, and international affairs may evolve from one crisis to another precisely because an economist's tools for measuring and adjusting don't fit neatly into the junctions between human aspirations and a world immovably governed by the rules of biology, chemistry, and physics. In this course, we probe, review, critique, and extend efforts to grapple with these most intractable and largest of issues. In this context, students will complete the course with a perspective on what to do when all the experts hit the limits of their expertise.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

ENIA 5430 Energy Diplomacy 3 Credits

This course will examine a century of diplomatic energy relationships, beginning with the formation of National Oil Companies in the Middle East, Mexico and Venezuela, and moving forward to the energy transition and the race to fuel the world's growing electric vehicle fleet. Students will study the producer institutions (such as OPEC) as well as consumer institutions (such as International Energy Agency and International Renewable Energy Agency). Cases will include OPEC (its rise, decline, and evolution into OPEC+); the history of Petroleos de Venezuela from its partnership with American and European oil majors to its drastic restructuring under Chavez; the role of Natural Gas and efficiency in European Energy Security; and global efforts to shape the transition of the energy sector; the race for leadership in green hydrogen; and the competition to extract, process and assemble minerals and batteries to fuel the electric vehicle industry.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

ENIA 5440 The Energy Transition 3 Credits

This course examines the key issues and challenges around the most profound transition in global energy use since the Industrial Revolution, amidst global conflicts and tensions, with energy itself at the heart of many of those tensions. The course will be of interest to those who wish to play a part in government, in multilateral institutions, in the various businesses that together are shaping the transition - or in the civil society groups who try to influence them.. Energy products are among the most traded global commodities. Energy is essential to modern life; yet many of its companies and products are often controversial. Governments regulate the industry with varying - and sometimes contradictory - objectives and varying success; they actively participate in supply chains and product markets; and own electricity, nuclear, renewable or fossil fuel companies. The course focuses on the global challenge of combining development energy security and environmental progress. It will approach this question through the lens of global participants' concerns and priorities - particularly those of non-OECD participants. Students will gain an in-depth understanding of the economic fundamentals of energy and the external environment in which the energy industry operates. The first part of the course explores the structure of today's energy markets and how their future transition is forecast. It considers the fundamental forces driving the transition - actions to address climate change - and concerns about energy security and prices that create inevitable trade-offs. - as well as the practical factors limiting the speed at which the transition will occur. Finally, we consider the geopolitical implications of recent and prospective changes in energy supply chains, markets and financing. Financial modeling-based team exercises (using Excel) , structured investigations and classroom sessions explore the uncertainty the transition creates and how that translates into investment decisions, portfolio design, regulatory and tax approaches. The final part of the course will require participants to develop and effectively communicate plausible policy advice for government leaders.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

ENIA 9993 Continuous Registration

Continuous Registration

Level: Graduate

Grading: Main Campus (UGrad, Grad)