

**ACDIS Undergraduate Certificate in Global Security - Spring 2022 Course List. (updated November 1, 2021)**

Soc/ Nat	Availability*	Course	Cross-list	Name	Description
Nat	Spring 2022	ACES 102		Intro - Sustainable Food Systems	An objective approach towards critical systems thinking and towards collaborative analysis across multiple disciplines for the development, production, preparation, consumption, and utilization of food, feed, fiber and energy, while managing the disposal and reuse of byproducts, within complex socioeconomic, ecological and environmental systems. Students will be introduced to the fundamentals of modern crop, livestock, and other agricultural production systems, and consider the future challenges and opportunities in producing enough for a growing world population.
Nat	Spring 2022	ANTH 246		Forensic Science	History and theory underlying methods used in forensic science. Topics include the courtroom, the units of a crime laboratory, methods of securing and investigating a crime scene, and the analysis of evidence collected from a crime scene such as blood, fibers, hair and fingerprints.
Nat	Spring 2022	ATMS 120	ESE 120	Severe and Hazardous Weather	Most extreme manifestations of weather and climate are analyzed in terms of their physical basis and their historical, economic and human consequences. Emphasis is placed on the interplay between technological advances, the evolution of meteorology as a science, and the impacts of extreme weather (winter storms, floods, severe thunderstorms, hurricanes, El Nino). Technological advances include satellites, weather radars and profilers, and computer models used for weather prediction.
Nat	Spring 2022	ATMS 140	ESE 140	Climate and Global Change	Introduces climate change and its interactions with the global environment; surveys the physical, chemical, biological and social factors contributing to global change; includes topics such as greenhouse warming, acid rain, ozone depletion, distinguishes anthropogenic influences and natural variability of the earth system; addresses societal impacts, mitigation strategies, policy options and other human responses to global change.
Nat	Spring 2022	CPSC 116		The Global Food Production Web	Introduces students to the global web involved in the production of food we consume on a daily basis. Selected ecosystems of plants, people, and cultures in Asia, Africa, and Latin America will be studied based on involvement with various crops. Presents the origin and biology of plants; their evolution with humankind in various cultures; the spread and economic importance of crops around the world; and considers current hunger and environmental issues resulting from the global food web. Interactive communications with selected scientists, producers, and traders around the world through the World Wide Web and email system of the INTERNET permit students to get personal exposure to information and activities.
Nat	Spring 2022	CS 461	ECE 422	Computer Security I (4 hrs)	Fundamental principles of computer and communications security and information assurance: ethics, privacy, notions of threat, vulnerabilities, and risk in systems, information warfare, malicious software, data secrecy and integrity issues, network security, trusted computing, mandatory and discretionary access controls, certification and accreditation of systems against security standards. Security mechanisms: authentication, auditing, intrusion detection, access control, cryptography, security protocols, key distribution.
Nat	Spring 2022	ENG 471		Seminar on Energy and Sustainability	Challenges of developing energy systems and civil infrastructure that are sustainable in terms of resource availability, security, and environmental impact. Guest lecturers focus on: (i) global challenges -- future energy demand, geologic sources of energy, climate change, energy-water nexus, energy and security; (ii) markets, policies and systems -- economic incentives, policy and law, life cycle analyses; (iii) opportunities for change -- CO2 sequestration, renewable power, bioenergy feedstocks, biofuels for transportation, energy use in buildings, advanced power conversion, the smart grid.
Nat	Spring 2022	ESE 118	GEOL 118/GLBL 118	Natural Disasters	Introduces the nature, causes, risks, effects, and prediction of natural disasters including earthquakes, volcanoes, landslides, subsidence, global climate change, severe weather, coastal erosion, floods, mass extinctions, and meteorite impacts; covers scientific principles and case histories of natural disasters as well as human responses (societal impact, mitigation strategies, and public policy).
Nat	Spring 2022	ESE 320	GEOG 370/GEOL 370	Water Plant, Water Crisis	Study of the science of water on planet earth, the developing water crisis, and some possible solutions to it. Topics include water's unique physical and chemical properties; how it profoundly shapes the earth/ocean/atmosphere system; dynamics of oceans, atmosphere, lakes, rivers, groundwater, and ice masses; current fresh water supplies and their distribution on earth relative to population; current and future water crises and the compounding effects of droughts, floods, and global change; and prospects for some technological and economic approaches to easing the crisis.
Nat	Spring 2022	MCB 426		Bacterial Pathogenesis	Emphasizes prokaryotes that cause important diseases in humans and other animals; host-parasite bacteriology; and chemistry and genetics of mechanisms of pathogenesis.
Nat	Spring 2022	MCB 435		Evolution of Infectious Disease	What is the meaning and impact of politics seen from the perspective of those at the bottom of the pyramid of political power rather than from the usual focus on the actions and perceptions of political elites? In what ways do workers become involved in politics? Under what circumstances are they likely to be successful in bringing about change? This course addresses these questions by exploring political power, political participation, and political change from a broad historical and cross-cultural perspective, but always focusing on a view of politics from the bottom up. The course analyzes the political economy of labor, and the labor movement's political influence in politics.
Nat	Spring 2022	NPRE 441		Radiation Protection ( 4 hrs)	Sources of nuclear radiation; ionization and energy deposition in matter with an emphasis on biological systems; principles of dosimetry; determination of exposure and limits for internal and external emitters; basic shielding calculations.
Nat	Spring 2022	NPRE 442		Radioactive Waste Management (4 hrs)	Radiation and radiological concepts and measurement, the fuel cycle and waste classification, Part 61, state and federal regulations and regulatory agencies, radiochemistry and the environmental fate of radionuclides, uranium-related wastes, low-level wastes, high-level wastes, used fuel reprocessing, private fuel storage, waste package stability, risk assessment, geologic repositories, transporting radioactive wastes, decommissioning wastes, transmutation, an international perspective on radioactive waste management, and the global nuclear energy partnership.
Nat	Spring 2022	NPRE 480		Energy and Security	Security and supplies of energy, mineral resources, and water. Evolution of the importance of various fuels in conflicts (including coal, oil, uranium, and natural gas) starting with the Franco-Prussian Wars. Theories of international conflict and examination of the role of individual leaders versus institutional factors in the precipitation and outcome of pivotal wars. Econometric analyses relevant to past and projected future energy use.
Nat or Soc	Spring	NPRE 483	GLBL 483	Seminar on Security (1 hr)	Preparation of reports on a set of introductory lectures and student choices from various on-campus seminar series relevant to technology of domestic and international security and the regional and international contexts that influence the nature of security problems. <b>REQUIRED COURSE FOR UNDERGRADUATE CERTIFICATE IN GLOBAL SECURITY</b>
Nat	Spring 2022	PHYS 280	GLBL 280	Nuclear Weapons & Arms Control	Nontechnical analysis of the physics of nuclear weapons, nuclear weapon effects, delivery systems, and defenses against nuclear attack; presentation of current issues; basis for making informed judgments about nuclear armaments and arms control.
Nat	Spring 2022	UP 205		Ecology & Environmental Sustainability	Basic ecological principles underlying environmental sustainability. Examination of problems that arise from inadequate consideration of structure and function of ecological systems, and approaches to ecological restoration and environmentally sound planning. Applications of principles to case studies drawn from urban planning, natural resource management and sustainable development.
Soc	Spring 2022	ACE 210	ECON 210/ENVS 210/NRES 210/UP 210	Environmental Economics	Economic issues surrounding environmental quality, including: costs and benefits of environmental protection; economics of environmental policies (such as those dealing with toxics, water, and air pollution, and municipal solid waste); and economics of international environmental problems (such as ozone depletion and climate change).

Soc	Spring 2022	ACE 251		World Food Economy	Examination of global food production, consumption, and trade; problems of hunger and population; the role of agricultural development, trade, and aid in relieving hunger.
Soc	Spring 2022	ACE 254	AFST 254	Economic Systems in Africa	Examines systems of production and exchange in Africa. Through lectures, discussions, readings and films participants will study the ways African people interact in local markets and the impact of national and international markets on their welfare.
Soc	Spring 2022	ACE 310	ENVS 310/NRES 310	Natural Resource Economics	Economic principles are used to analyze a broad range of natural resource policy and management issues. Economic concepts developed include public goods, social welfare, discounting, dynamic efficiency, and resource scarcity. Natural resources examined include biodiversity, fisheries, forests, minerals, soil, and water resources.
Soc	Spring 2022	ANTH 278		Climate Change & Civilization	Examination of how climate change impacts society. With the increasing need to understand how climate changes and society intersect at present, it is becoming important that we address critical questions about how lessons from the past inform present needs. Case studies from around the world are discussed.
Soc	Spring 2022	CHLH 210		Community Health Organizations	Overview of institutions and agencies which provide health information, education, services, and care. Includes historical foundations, constituencies, organizational goals and structure, funding and expenditures, modes of service delivery, political and ethical issues.
Soc	Spring 2022	CHLH 243		Drug Use and Abuse	Introduction to the biological, psychological, pharmacological, and legal aspects of drug use and abuse; surveys community and university resources concerned with drug use and abuse; emphasizes personal and social actions for responsible drug use.
Soc	Spring 2022	CHLH 415		International Health	Explores the various factors that impact the health of populations around the world. Political, cultural, social, environmental and other domains will be examined in relation to how they affect the health of residents of various countries.
Soc	Spring 2022	CHLH 469	ENVS 469	Environmental Health (3 or 4 hrs)	Appreciation of the concepts and mechanisms used to prevent or control environmental conditions that may lead to infectious or other environmentally induced diseases. Presents topics from a public health perspective that include air pollution, water supply management, waste management, radiation protection, food hygiene, occupational health and disaster management.
Soc	Spring 2022	CMN 280		Comm Technology & Society	Introduction to theory and research on both old and new communication technologies; focus will be on how these technological systems develop and are used, and what implications of these systems have for culture and society.
Soc	Spring 2022	GEOG 210	ESE 210	Social & Environmental Issues	Introduction to the complex relationship between people and the natural environment from a social science perspective. Explores different approaches to environmental issues, and examines the role of population change, political economy, technologies, environmental policymaking, and social institutions in causing and resolving contemporary social and environmental global issues
Soc	Spring 2022	GEOG 379	ESE 379	Intro to GIS Systems	Investigates the fundamentals of geographic information science as well as the basic skills in the execution of that theoretical knowledge with industry standard software packages. Student will learn the basics of projections and coordinate systems, how geographic information is stored and manipulated,
Soc	Spring 2022	GLBL 240		Global Health	Introduction to issues and problems in global health. As the world becomes more and more interconnected it is important for students to be aware of health issues from a global perspective. We will consider a variety of issues that influence the health of different population and countries. The topics to be discussed include: the environment, nutrition, education, the medical system, culture, and agency involvement in health. Case studies will be used to demonstrate some successes at addressing these issues and problems that were encountered.
Soc	Spring 2022	GLBL 392		Int Diplomacy and Negotiation	Examines the complexities of international diplomacy and negotiations among states and other actors. Focuses on three main subject areas: negotiation analysis, applied negotiation, and the interaction of practical considerations that affect negotiations. Utilizes theoretical, case-based, and active-learning approaches during the semester as topics are explored in detail. Issues and topics include security, public health, economic development, human rights, and the environment.
Soc	Spring 2022	HIST 251	GLBL 251	Warfare Milit Instits & Soc	History of warfare and its relationship to changing technologies, tactics, and political structures, with an emphasis on the ways that military institutions are integrated with society as a whole.
Soc	Spring 2022	LA 221	AFRO 221/HIST 219	History of Prison	History of prison architecture, landscapes, and carceral regimes from ancient times until the present. Topics include: philosophy of punishment, the invention of the modern prison, the advent of mass incarceration, and 21st century geographies of incarceration. The course focuses on the western experience, but also includes international examples, e.g. from China, East Africa, and Japan. Interdisciplinary approach includes readings in architectural history, urban planning, sociology, philosophy, psychology, history, and landscape studies.
Soc	Spring 2022	LER 300		Workers, Unions, and Politics	What is the meaning and impact of politics seen from the perspective of those at the bottom of the pyramid of political power rather than from the usual focus on the actions and perceptions of political elites? In what ways do workers become involved in politics? Under what circumstances are they likely to be successful in bringing about change? This course addresses these questions by exploring political power, political participation, and political change from a broad historical and cross-cultural perspective, but always focusing on a view of politics from the bottom up. The course analyzes the political economy of labor, and the labor movement's political influence in politics.
Soc	Spring 2022	PS 357	GLBL 357	Ethnic Conflict	Explores the bases of nationalist and ethnic identities across a variety of different national and cultural contexts, and how these are related to conflict at the intrastate and interstate levels. Consideration is given to the characteristics and patterns of ethnic conflict with special emphasis on how and when ethnic tensions become manifested in violent conflict. The course concludes with consideration and evaluations of various domestic and international approaches to conflict management and resolution.
Soc	Spring 2022	PS 392		Intl Organizations & Regionalism	Examines regionalism and regional international organizations and their consequences for multilateralism cooperation, and conflict.
Soc	Spring 2022	PS 394		Crisis Diplomacy	A comparative study of foreign policy decision-making and diplomacy among the major states from 1816-1948 with a focus on crisis bargaining, management, and escalation. Foreign relations of Britain, France, Germany, Russia, Italy, Japan, and the United States are covered in light of international relations theories. Emphasis is placed on how domestic political struggles, like those between hard liners and accommodationists, and external factors, like alliances and international norms, affect decision-making. Comparisons are made between those crises that are peacefully settled and those that escalate to war and/or get out of control.
Soc	Spring 2022	SOC 275		Criminology	Nature and extent of crime; past and present theories of crime causation; criminal behavior in the United States and abroad, and its relation to personal, structural and cultural conditions; the nature of the criminal justice system and the influences of the exercise of discretion among actors in the criminal justice system.
Soc	Spring 2022	SOC 473		Immigration, Health & Society	This interdisciplinary seminar examines the social determinants of US racial and ethnic health inequalities through the lens of (im)migration. Topics to be addressed include: conceptualizations of race and ethnicity, immigrant-adaptation theories, discrimination, place, and the intersections of race, ethnicity, poverty, immigration and health.
Soc	Spring 2022	SOCW 360		Social Work and the Military	This course provides an overview of military social work practice including: military culture, issues and needs of soldiers and their families, ethical considerations, and the roll of social workers.

Soc	Spring 2022	TSM 311		Humanity in the Food Web	The human food web is the complex network of technologies, environments, people, and social institutions that produces, processes, and distributes the world's food supply. Students will study the food webs of the past, present, and future and will explore various human roles, including their own, in the global technology-environment-society-food system. Course topics include domestication, mechanization, urbanization, the green revolution, biotechnology, food safety, the environment, and appropriate technologies for developing countries.
Soc	Spring 2022	UP 260		Social Inequality and Planning	How are inequalities produced and contested in an urban environment? This course examines this question by analyzing how the urban landscape shapes and is shaped by race, class, and gender inequalities. Uses comparative cases to explore successful intervention, both from formal and informal, across multiple scales from the local to the global.
Soc	Spring 2022	UP 466		Energy, Plng & Blt Environment	Focuses on the study of buildings, including their past and present uses, their place in the environment, and most importantly, how they can become more sustainable. Teaches students to think about and plan physical space from an energy-and climate-centric perspective. Uses climate mitigation and building energy systems-modeling techniques to analyze potential energy systems reductions and approaches to affect a building's carbon footprint.
*Availability is subject to change and semesters listed are not permanent semesters.					