

### ACDIS Undergraduate Certificate in Global Security - Full Course List - Spring 2024

Soc/Nat	Semester	Course	Cross-list	Name	Description
Nat	Spring	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	Summer	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	Summer/Winter	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	Summer	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	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	Fall/Spring	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	CS 463	ECE 424	Computer Security II (3 or 4 hrs)	Program security, trusted base, privacy, anonymity, non-interference, information flow, confinement, advanced auditing, forensics, intrusion detection, key management and distribution, policy composition and analysis, formal approaches to specification and verification of secure systems and protocols, and topics in applied cryptography.
Nat	Summer/Winter	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	Summer	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	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	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	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	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	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	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	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	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	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	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	Summer	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	Summer	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	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	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	GGIS 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	GGIS 379	ESE 379	Intro into 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	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	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	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	LER 200		Globalization and Workers	Is globalization good for working people in the United States and around the world? Globalization is the driving force in the world economy but it is also provoking tremendous debate and popular resistance. Students will learn the basics about globalization and its institutions from the perspective of workers' right in the U.S. and the Third World. Analyzes the debate over free trade and sweatshops, trade agreements such as the North American Free Trade Agreement, and institutions such as the World Trade Organization and the International Monetary Fund. Closely examines working conditions in several Third World countries, and explores the role of the global justice movement.
Soc	Spring	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	PS 283		Intro to Intl Security	Surveys the major issues associated with arms control, disarmament and international security. Also examines the military, socio-economic, and political dimensions of weapons systems, military strategy, the ethics of modern warfare, nuclear proliferation, and regional security issues
Soc	Spring	PS 386		International Law	Analyzes the concepts and bases of public international law. Topics include sources and subjects of international law, as well as issues of jurisdiction, territory, law of the sea, and use of military force.
Soc	Spring	PS 392		International Organizations and Regionalism	Examines regionalism and regional international organizations and their consequences for multilateralism cooperation, and conflict
Soc	Spring	PS 398		Strategic International Relations	Examination of basic concepts and tools for analyzing foreign policy and understanding international politics and economy. Simple game-theoretic models will be used to explore the logic and the mechanisms behind key policy issues in international economy, cooperation, security, and institutions.
Soc	Spring	SOC 160		Global Ineq and Social Change	Introduces sociological concepts of poverty, inequality, and social change within a global context. Themes explored include basic food security, poverty and hunger; population and resource distribution; foreign aid and development institutions; and social policies and movements for change. Course approach is historical and transnational, and typically includes case studies from Africa, Asia, Latin America, and the United States.
Soc	Summer	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	UP 438		Disasters and Urban Planning (4 hrs.)	Introduction to the role of urban planners in preparing for and rebuilding after disasters. Emphasizes U.S. planning practice, with particular attention to the role of local government. Includes basic U.S. emergency management laws and framework, local mitigation planning, and post-disaster recovery planning. 4 undergraduate hours.

**\*Availability is subject to change. Semesters listed are NOT permanent semesters.**