COLORADO STATE UNIVERSITY

Introduction

This course inventory was developed for Colorado State University's STARS 2.1 submission following the STARS 2.1 definition for sustainability courses and courses that include sustainability.

Methodology

The 2018-2019 CSU Course Catalog (http://catalog.colostate.edu/general-catalog/courses-az/) was inventoried to identify sustainability courses and courses that contain sustainability per the definitions provided in the STARS 2.1 Technical Manual (see definitions below).

The inventoried courses were then entered into an online database that the Provost sent to all Department Chairs on campus. Department Chairs were asked to review the courses for their department to verify courses and the online database offered tools to allow chairs to update descriptions, remove courses they did not feel met the definitions and/or had been canceled, and add any courses from the 2018-2019 academic year that met the definitions and were not already included in the inventory.

Our inventory covers one academic year (2018-2019) and all courses were counted once, regardless of the number of sections or number of times the course was offered during the academic year.

Definitions

Sustainability Courses:

Sustainability courses are courses in which the primary and explicit focus is on sustainability and/or on understanding or solving one or more major sustainability challenge. This includes:

A. Foundational courses in which the primary and explicit focus is on sustainability as an integrated concept having social, economic, and environmental dimensions. Obvious examples include Introduction to Sustainability, Sustainable Development, and Sustainability Science, however courses may also count if their course descriptions indicate a primary and explicit focus on sustainability.

B. Courses in which the primary and explicit focus is on the application of sustainability within a field. As sustainability is an interdisciplinary topic, such courses generally incorporate insights from multiple disciplines. Obvious examples include Sustainable Agriculture, Architecture for Sustainability, and Sustainable Business, however courses may also count if their course descriptions indicate a primary and explicit focus on sustainability within a field.

C. Courses in which the primary focus is on providing skills and/or knowledge directly connected to understanding or solving one or more major sustainability challenges. A course might provide knowledge and understanding of the problem or tools for solving it, for example Climate Change Science, Renewable Energy Policy, Environmental Justice, or Green Chemistry. Such courses do not necessarily cover “sustainability” as a concept, but should address more than one of the three dimensions of sustainability (i.e., social wellbeing, economic prosperity, and environmental health).

Courses that include Sustainability:

A course that includes sustainability is primarily focused on a topic other than sustainability but incorporates a unit or module on sustainability or a sustainability challenge, includes one or more sustainability-focused activities, or integrates sustainability issues throughout the course. To count, these units/modules, activities or issues should be documented in course descriptions or syllabi.

Undergraduate Courses

Course #	Course Name	Sustainability Focused	Sustainability Inclusive	Sustainability Content
GES 101	Foundations of Environmental Sustainability	Yes		Concepts, foundations, and metrics of global environmental sustainability applied to global challenges.
GES 130	Introduction to Sustainability Engagement	Yes		Overview of sustainability as relating to local and campus issues.
GES 135	Applied Community Sustainability	Yes		Engaging with communities on real projects, teams of students develop workable solutions to problems related to food security, green infrastructure, urban wildlife conservation, and other sustainability topics. This course will be fully integrated with a writing course providing a complementary emphasis on values, ethics, meaning, critical thinking, writing, and speaking
GES 141	Introduction to Sustainable Energy	Yes		Fossil, nuclear, and renewable energy sources. Energy conversion, distribution, and storage. Energy and the environment. Energy economics and policy.
GES 180A4	Water Sustainability in the Western US	Yes		Water and the sustainability of its use in the West. Historical perspectives on the development of water resources in the West. Exploration of the issues involved in meeting the needs for water by people, agriculture and wildlife. Impacts of important human and natural influences on the use and sustainability of water supplies in the West.
GES 330A	Sustainability in Practice: Project	Yes		Engages students in real-world sustainability applications and empowers them to design and execute their own program or research project. A) Project. B) Service Learning.
GES 330B	Sustainability in Practice: Service Learning	Yes		Engages students in real-world sustainability applications and empowers them to design and execute their own program or research project. A) Project. B) Service Learning.
GES 441	Analysis of Sustainable Energy Solutions	Yes		Methods of evaluating sustainable energy technologies, including life cycle assessment, energy return on investment, technoeconomic analysis, and political ecology
GES 450	Global Sustainability and Health	Yes		Impact of anthropogenic environmental change on human, animal and environmental health.
GES 470	Applications of Environmental Sustainability	Yes		Integration of dimensions of global environmental sustainability environment, society, and economy through case studies and team project.
GES 480A3	Sea Level Rise and a Sustainable Future	Yes		
GES 481A1	Sustainable Strategies for E-waste Management	Yes		Trans-disciplinary overview of the electronics industry, with an emphasis on sources and impacts of e-waste on human & natural systems. Systems approaches to mitigating environmental and social impacts of electronics--from product design, materials and manufacture to use, re-use, recycle and disposal.
AGRI 116	Plants and Civilizations	Yes		Course focused on plant origins and their relationships with cultures/civilizations
AGRI 270	World Interdependence-Population and Food	Yes		Survey of world population and food; emphasis on understanding the problems and opportunities in a world context.
ANTH 181A1	Imagining Sustainability	Yes		Science alone cannot imagine the revolutionary changes necessary to sustain future life on our planet. Explore key concepts and practices of sustainability as represented in contemporary fiction, film, and the news media. Interdisciplinary approach will be anthropological and historical, charting the development of sustainability thinking through different epochs of capitalism.
ANTH 200	Cultures and the Global System	Yes		Analyze diversity, cultural responses, and adaptations of smaller-scale societies to emerging global trends.
ANTH 415	Indigenous Ecologies and the Modern World	Yes		Impact of the modern world on indigenous peoples relationship to their environments and natural resources.

ANTH 417	Indigenous Environmental Stewardship	Yes		Sustainability and environmental stewardship are not necessarily modern day concepts. Indigenous peoples of North America have established traditions and beliefs about harmony and kinship with nature. Focus upon stories and belief systems and their influence upon culture, economics, politics, American history, environmental justice and law.
AREC 202	Agricultural and Resource Economics	Yes		Introduction to decision-making by consumers, firms, and government and the resulting allocation of resources through markets.
AREC 240	Issues in Environmental Economics	Yes		Discussion and economic analysis of current environmental issues with special emphasis on the impact of economic growth
AREC 340	Introduction: Economics of Natural Resources	Yes		Concepts, theories, institutions; analytical methods for economic evaluation of alternative resource use patterns and land use plans.
AREC 341	Environmental Economics	Yes		Economic theories and analytic frameworks are developed and applied to contemporary problems of the use and protection of the natural environment.
AREC 440	Advanced Environmental and Resource Economics	Yes		Microeconomic techniques to rigorously explore economic decision-making and policy as they apply to environmental and natural resource problems.
AREC 444	Economics of Energy Resources	Yes		Supply, consumption trends, and projected demand for alternative energy resources in domestic and world perspective; economics of public energy policies.
ATS 150	Science of Global Climate Change	Yes		Physical basis of climate change. Energy budget of the earth, the greenhouse effect, carbon cycle, paleoclimate, projections of 21st-century climate.
ATS 350	Introduction to Weather and Climate	Yes		Behavior of atmosphere and its influence upon human's activities; integrates environmental and social aspects of sustainability
BSPM 415	Pollinator Management in Agroecosystems	Yes		Fundamental concepts of pollinator management, sustainable crop-pollinator interactions, global issues on pollinator conservation.
BUS 201	Foundations of Sustainable Enterprise	Yes		Basics of sustainability in business and implications for business decision making.
BUS 405	Contemporary Business Topics	Yes		Course integrates the social responsibility aspect of sustainability in business environments
BZ 348	Theory of Population and Evolutionary Ecology	Yes		Principles and methods for building, analyzing, and interpreting mathematical models of ecological and evolutionary problems in biology.
BZ 353	Global Change Ecology, Impacts and Mitigation	Yes		Ecological impacts of human-induced global change, and the strategies that can/are being used to adapt to and mitigate these impacts.
BZ 472	Stream Biology and Ecology Laboratory	Yes		Field sampling and laboratory analysis of habitats, biota, and ecological relationships in running waters
CIVE 330	Ecological Engineering	Yes		Principles of ecological engineering and design of sustainable ecosystems.
CIVE 413	Environmental River Mechanics	Yes		Fluvial geomorphology, river hydraulics, sediment transport, and river response with emphasis on environmental aspects.
CIVE 438	Environmental Engineering Concepts	Yes		Environmental engineering approaches to designing water supply, wastewater removal, and pollution control systems.
CIVE 439	Environmental Engineering Chemical	Yes		Application of chemical principles to environmental engineering problems.
CIVE 442	Air Quality Engineering	Yes		Air pollution problems and solutions, at scales ranging from local to global. Quantitative analysis of chemical and physical processes governing air pollutants in natural and built environments.
CIVE 458	Environmental Geotechnics	Yes		Application of principles from soil physics, soil chemistry, soil mechanics, hydrogeology, and geotechnical engineering to solve problems in Environmental Geotechnics related to engineered containment of contaminants and remediation of contaminated sites for the protection of human health and the environment.
CON 476	Sustainable Practice-Design and Construction	Yes		Major components of sustainable design/construction: energy, healthy buildings, cultural, natural resources, use, other environmental/economic issues.
CON 477	Residential Aging-in-Place and Green Building	Yes		Aging-in-place and green building aspects of the residential construction market.
E 403	Writing the Environment	Yes		Creative writing in conjunction with study of recent American literature on nature and landscape.

ECE 465	Electrical Energy Generation	Yes		Various electrical energy generation alternatives. Comparisons based on cost, reliability, availability and environmental impact.
ECON 240	Issues in Environmental Economics	Yes		Discussion and economic analysis of current environmental issues with special emphasis on the impact of economic growth.
ECON 346	Economics of Outdoor Recreation	Yes		Benefit cost framework in public planning for outdoor recreation, pricing problems, projecting demand, and regional economic development.
ECON 444	Economics of Energy Resources	Yes		Supply, consumption trends, and projected demand for alternative energy resources in domestic and world perspective; economics of public energy policies.
ERHS 220	Environmental Health	Yes		Impact of people on the physical and biological environment as well as impact of the environment on people; emphasis placed on human health.
ERHS 320	Environmental Health- Water and Food Safety	Yes		Water quality and food safety for practice of environmental health.
ERHS 350	Industrial Hygiene and Air	Yes		Industrial and airborne hazards, disease prevention, hazard control and evaluation.
ERHS 410	Environmental Health Waste Management	Yes		Recognition of impacts, occupational and environmental, in handling wastes; administrative management for waste programs.
ERHS 430	Human Disease and the Environment	Yes		Overview of the human diseases which are associated with the environment.
ERHS 446	Environmental Toxicology	Yes		Essentials of environmental toxicology based on problem- oriented discussions addressing environmental impacts of organic/inorganic chemicals.
ERHS 448	Environmental Contaminants: Exposure and Fate	Yes		Pathways of exposure and behavior of environmental contaminants. Exposure assessment in environmental health protection.
ESS 129	Information Management for Sustainability	Yes		Learn to access, retrieve, store, and manipulate information for natural resources and sustainability applications. Basic mapping, statistics, and graphing
ESS 130	Intro to System Theory for Sustainability	Yes		Applying computers, networks, software applications, and the internet for managing information in ecosystem science and sustainability.
ESS 210	Physical Geography	Yes		Energy, mass budget, and human impacts on atmosphere, hydrosphere, and continental land surfaces.
ESS 311	Ecosystem Ecology	Yes		Principles of ecosystems ecology, emphasis on their application to coupled natural and human systems.
ESS 312	Sustainability Science	Yes		Synthesize multifaceted information across a wide range of disciplines, with the goal to develop potential solutions to complex human-societal-environmental challenges at multiple scales. Implement methods for understanding current issues, develop alternative scenarios to current practices and policies, and stage interventions to achieve more sustainable behaviors and practices.
ESS 400	Global Perspectives on Sustainability	Yes		Explores the intersections between ecosystem science, communities and sustainability in the context of the global challenges of climate change focusing on the new global framework (The Paris Agreement), Sustainable Development Goals (SDGs), and ecological indicators
ESS 412	Sustainable Cities	Yes		Explore the ecology of cities, evaluate the most innovative science developed for the city, and discuss with renowned researchers leading these efforts. Analyze sustainability plans from a variety of cities around the globe, and interact with the practitioners developing and implementing sustainable goals. Delve into sustainability theory, specifically "the sustainable city myth."
ESS 440	Practicing Sustainability	Yes		Capstone integration of ecosystem science and sustainability, focused on case studies.
ETST 256	Border Crossings: People/Politics/Culture	Yes		Colonial and post-colonial discourse, politics of representation and epistemology of "location" it has produced: first and third world.
ETST 365	Global Environmental Justice Movements	Yes		How the worlds€™s poor and minorities self-empower to challenge institutional racism and government apathy in order to secure basic environmental goods.
FW 104	Wildlife Ecology and Conservation	Yes		Essentials of wildlife ecology as a foundation for understanding issues on the origins, management and conservation of biodiversity.

FW 304	Conservation of Marine Megafauna	Yes		The ecology, systematics, behavior and conservation of large marine animals including giant squid, bony fishes, sharks, sea turtles, seabirds, and marine mammals. Examines the relations between ocean dynamics and large marine animals, and provides insights in the roles that marine megafauna species play in ocean ecosystems. Study impacts of human activities, such as bycatch and climate change, and their effect on ocean species.
GEOL 120	Exploring Earth: Physical Geology	Yes		Develops scientific understanding through introduction to earth processes, materials, resources, and hazards.
GEOL 122	The Blue Planet: Geology of Our Environment	Yes		Develops scientific understanding through introduction to geological processes, natural hazards, earth resources, and their impacts on society.
GEOL 446	Environmental Geology	Yes		Geology applied to environmental problems.
GR 304	Sustainable Watersheds	Yes		Effects of climate, land use, and water use on the sustainability of water quantity and quality.
GR 333	Glaciers and Climate Change	Yes		Glacier mass balance, dynamics, past fluctuations, and glaciers' relation to climate change.
GR 410	Climate Change: Science, Policy, Implications	Yes		Implications and consequences for earth systems including the cryosphere, hydrosphere, biosphere and human systems
HIST 355	American Environmental History	Yes		Interaction of humans and nature in American history with emphasis on relationships between environmental, social, and cultural change.
HIST 470	World Environmental History, 1500-Present	Yes		World environmental history since 1500, emphasizing the dynamic interaction of nature, culture, and human activity.
HORT 100	Horticultural Science (AUCC 3A)	Yes		Principles of plant science and related disciplines as the base and context for the introduction of horticulture practices.
HORT 171	Environmental Issues in Agriculture	Yes		Historical development of agriculture; environmental consequences of modern food production, and other cultural approaches to agriculture.
HORT 476	Environmental Plant Stress Physiology	Yes		Plant growth, development and physiology, major sources of stress in plants, global issues in environment and plant stress.
IE 116	Plants and Civilizations	Yes		Plant origins and their relationships with cultures/civilizations as food, spices, perfumes, medicine, art, mythology, religion, wars, exploration, slavery.
IE 270	World Interdependence-Population and Food	Yes		Survey of world population and food; emphasis on understanding the problems and opportunities in a global context.
LAND 220	Fundamentals of Ecology	Yes		Interrelationships among organisms and their environments.
LIFE 220	Fundamentals of Ecology	Yes		Interrelationships among organisms and their environments.
MGT 360	Social and Sustainable Venturing	Yes		Entrepreneurship and economic opportunities in the transition to a socially and ecologically sustainable global economy.
NR 120A	Environmental Conservation	Yes		Overview of natural resources environmental concerns including population, pesticides, energy, and pollution.
NR 130	Global Environmental Systems	Yes		Studies of the earths lithosphere, hydrosphere, atmosphere, and biosphere systems, and their interrelations with human dimensions.
NR 150	Oceanography	Yes		Introduction to the geology, physics, chemistry, and biology of the world ocean; oceanic relationships with various human dimensions.
NR 310	Ecosystem Services and Human Well-Being	Yes		Life supporting and life-fulfilling benefits that nature provides to humans; theory, case studies, and policy.
NR 320	Natural Resources History and Policy	Yes		History, values and institutions, and policy process guiding natural resources management and conservation.
NR 353	Global Change Ecology, Impacts and Mitigation	Yes		Ecological impacts of human-induced global change, and the strategies that can/are being used to adapt to and mitigate these impacts.
NR 375	Environment and Natural Resources Leadership	Yes		Environment and natural resources leadership history, skills, and styles. Creation of leadership path and organization prescriptions.

NR 425	Natural Resource Policy and Sustainability	Yes		Principles, concepts, and operating examples of sustainable resource management with a concentration on forest policies and practices.
NRRT 440	Applications in Environmental Communications	Yes		Application of tools and techniques for communicating to audiences about issues related to conservation, environment and sustainability.
NRRT 470	Tourism Impacts	Yes		Social, cultural, physical, and economic impacts of tourism; techniques for assessing impacts on environment.
PHIL 180A	Environmental Justice and Sustainability	Yes		Environmental justice and sustainability from a philosophical perspective
PHIL 320	Ethics of Sustainability	Yes		Ethical and conceptual issues surrounding creation of sustainable societies and lifestyles. Required field trips.
PHIL 345	Environmental Ethics	Yes		Scientific, philosophical, and religious concepts of nature as they bear on human conduct; an ecological perspective.
POLS 131	Current World Problems	Yes		Background and nature of international political events.
POLS 361	U.S. Environmental Politics and Policy	Yes		Public and contemporary issues relating to U.S. environmental policy.
POLS 362	Global Environmental Politics	Yes		Cross-national and international contexts of environmental politics and policy.
POLS 442	Environmental Politics in Developing World	Yes		Examines environmental politics in developing countries and evaluates climate change, natural resource governance and environmental justice.
POLS 462	Globalization, Sustainability, and Justice	Yes		Public and private policies to promote sustainability and social justice in a globalizing world.
PSY 316	Environmental Psychology	Yes		Social psychological theory and research on effects of behavior on the environment; environmental influences on behavior.
RS 300	Rangeland Conservation and Stewardship	Yes		Conservation and management of rangeland-ecosystem values using sustainable practices.
SOC 220	Global Environmental Issues	Yes		Relationship between human societies around the world and the larger natural environment.
SOC 320	Population-Natural Resources and Environment	Yes		Population studies; world growth patterns and their relationship to natural resources and environment.
SOC 322	Introduction to Environmental Justice	Yes		Unequal distribution of environmental risks, benefits, policies and regulatory practices across different populations.
SOC 324	Food Justice	Yes		Food justice strives to eliminate exploitation and oppression by challenging the structural drivers within and beyond the food system. As a practice, food justice advocates for the right to healthy food that is justly and sustainably produced, recognizes diverse cultural food ways and histories, and promotes democratic participation and equitable distribution of resources in the food system.
SOC 460	Society and Environment	Yes		Technology as a social phenomenon interacting with social organization and the natural environment.
SOC 461	Water, Society, and Environment	Yes		Social aspects of water resource utilization; interface of social organization with physical environment.
SOCR 171	Environmental Issues in Agriculture	Yes		Historical development of agriculture; environmental consequences of modern food production and other cultural approaches to agriculture.
WR 304	Sustainable Watersheds	Yes		Effects of climate, land use, and water use on the sustainability of water quantity and quality.
AGED 110	Agriculture Production Systems		Yes	Broad survey of the diverse aspects of Colorado agriculture.
AGED 210	History of Agriculture in the United States		Yes	Relationships in agriculture. Historical/Native American/early practices, industrial agriculture, technologies, philosophy, green revolution.
AGED 220	Understanding Agricultural Education		Yes	Understanding different agricultural education systems. Understanding delivery models of agricultural education programs.

AGED 244	Power Systems in Agricultural Education		Yes	Development of safe competencies and applications related to power and technical tools utilized in school-based agricultural education programs.
AGED 420	Developing School Based Ag Education Programs		Yes	Developing knowledge in the approach and delivery of school-based agricultural education programs.
AM 321	Advanced Textiles		Yes	Textile product serviceability; effect of fiber structure on properties and performance; new developments.
AM 330	Textile and Apparel Economics		Yes	Manufacture of textile and apparel products; structure of the industries; international trade and consumption.
AM 335	Textiles and Apparel Supply Chains		Yes	Managing the flow of materials, information, and finances as they move in a process from supplier to retailers and consumers in a global environment.
AM 475	Product Development III		Yes	Technology-based product innovation for positive social and environmental impacts.
AM 479	Merchandising Policies and Strategies		Yes	Examination of merchandising environment as influenced by its structure, and economic, legal, demographic, and psychographic trends.
AMST 100	Self/Community in American Culture, 1600-1877		Yes	Meaning and development of American culture, 1600-1877, through themes of self and community in art, politics, society, and religion.
AMST 101	Self/Community in American Culture Since 1877		Yes	Meaning and development of American culture since 1877, through themes of self and community in art, politics, society, and religion.
ANEQ 101	Food Animal Science		Yes	Development, organization, trends and management of the livestock industry; emphasis on applying science to the production of food and fiber.
ANEQ 104	Values, Culture, and Food Animal Agriculture		Yes	Evolution of the social values and cultural understandings shaping modern animal agriculture; current problems in animal agriculture.
ANEQ 313	Prevention and Control of Livestock Diseases		Yes	Common ailments of livestock; sanitation and disease prevention and control.
ANEQ 320	Principles of Animal Nutrition		Yes	Understanding of nutrients and nutrient function required to support animal life through all physiological states.
ANEQ 351	Techniques in Therapeutic Riding		Yes	Equine assisted activities; therapeutic horseback riding, hippotherapy, driving/vaulting, mental health treatments, programs for youth at risk.
ANEQ 365	Principles of Teaching Therapeutic Riding		Yes	Practical experiences and knowledge of the techniques to be a professional certified therapeutic riding instructor.
ANEQ 460	Meat Safety		Yes	Meat safety; food borne pathogens; hazard analysis critical control points (HACCP) and total quality management (TQM) practices.
ANEQ 470	Meat Processing Systems		Yes	Advanced understanding of the manufacturing, packaging, distribution, storage, and cooking of meat products.
ANEQ 472	Sheep Systems		Yes	Sheep production under farm and ranch conditions; products, breeds, breeding, nutrition, reproduction, and management systems.
ANEQ 473	Dairy Systems		Yes	Integration of nutrition, genetics, physiology, and economics for management decisions of dairy farm operations and production and marketing of milk.
ANEQ 474	Swine Systems		Yes	Production of purebred and commercial swine; breeds, breeding, feeding, marketing, and management.
ANEQ 476	Feedlot Systems		Yes	Feedlot facilities; nutrition; procurement; merchandising; handling; processing cattle; health care; custom feeding; managerial duties.
ANEQ 478	Beef Systems		Yes	Beef production as related to consumer through seedstock segments. Major emphasis on cow-calf management.
ANTH 100	Introductory Cultural Anthropology		Yes	Human societies and their cultural setting; variation in beliefs, social customs, and technologies; human differences in anthropological terms.
ANTH 314	Southeast Asian Cultures and Societies		Yes	Colonial and post-colonial cultures, globalization processes, and changing ethnic and gender identities in Southeast Asian societies.

ANTH 315	Global Mobilities - The African Diaspora		Yes	Globalization and transnationalism with a focus on the circulation of people, ideas, and cultural products and practices between Africa and the rest of the world. By situating Africans as both producers and consumers of transnational ideas and products, we will develop an understanding of Africa beyond popular representations of violence and crisis.
ANTH 317	Anthropology of Human Rights		Yes	Human rights from the perspective of cultural anthropology through its theoretical and practical dimensions. Contemporary human rights debates within the context of cultural plurality in a globalized world. Engages the intersection between global dynamics and community experiences by addressing the human rights dimensions of refugees and migration, indigenous communities, women and children, health, religious practices, among others.
ANTH 319	Latin American Peasantries		Yes	Sociocultural, economic, and political responses of Latin American peasantries to poverty and global processes.
ANTH 329	Cultural Change		Yes	Cultural change and effects of directed global forces; colonial origins of underdevelopment on small-scale societies.
ANTH 330	Human Ecology		Yes	Roles of technology, economics, social organization, and ideology in human adaptations to and survival in natural and cultural environments.
ANTH 336	Art and Culture		Yes	Art expression is a defining factor in cultural identity and representation in a modern world where geographical and political borders are diminishing.
ANTH 338	Gender and Anthropology		Yes	Theory, themes, and debates in anthropological gender studies, ethnographic survey of women and men cross-culturally.
ANTH 412	Indians of North America		Yes	Native American peoples, their cultural variation across the continent, and cultural encounters with colonial expansion.
ANTH 416	Gender, Culture, and Health		Yes	Examine the role of anthropology in current global health issues paying particular attention to culture and gender.
ANTH 423	Cultural Psychiatry		Yes	Social determinants of mental health. Cross-cultural health and healing. Cultural contexts of U.S./Western and Indigenous/non-Western psychiatry's.
ANTH 451	Andean Archaeology and Ethnohistory		Yes	Prehistory and colonial experiences of native Andean peoples.
ANTH 452	Archaeology of Mesoamerica		Yes	Ancient cultures and civilizations in Middle America.
ANTH 454	Anthropological Perspectives on Food		Yes	A long term perspective on the political economy of human food ways from ancient hunter-gatherers to the present. Topics will include foraging practices, domestication, feasting and emergent social complexity, the role of food in ancient states, and globalization, as well as the modern food economy. Lectures and readings will be based on research in archaeology, cultural anthropology, and biological anthropology.
ANTH 479	International Development Theory and Practice		Yes	Contemporary issues in international community and economic development, with practical and theoretical analysis from interdisciplinary perspectives.
AREC 342	Water Law, Policy, and Institutions		Yes	Legal water issues within the context of historical, social and economic development with emphasis on the southwestern United States.
AREC 346	Economics of Outdoor Recreation		Yes	Benefit cost framework in public planning for outdoor recreation, pricing problems, projecting demand, and regional economic development.
AREC 375	Agricultural Law		Yes	Laws, regulations, case decisions affecting ranching and farming in the Rocky Mountain area.
AREC 405	Agricultural Production Management		Yes	Economic principles of agricultural production decisions with linear programming analysis of production choices and farm planning.
AREC 412	Agricultural Commodities Marketing		Yes	Agricultural marketing and agribusiness principles applied to current marketing problems relating to livestock and field and horticultural crops.
AREC 415	International Agricultural Trade		Yes	Agricultural trade patterns and institutions; trade theory with applications to agriculture. Current issues in agricultural trade.
AREC 428	Agricultural Business Management		Yes	Economic analysis, organization, and management practices of agriculture and food industries studied through simulation, case study, computer labs.

AREC 460	Ag- and Resource-Based Economic Development		Yes	Indicators, tools and approaches for agriculture- and natural resource-based economic development in resource dependent countries and communities.
AREC 478	Agricultural Policy		Yes	Formulation and administration of public policies affecting agricultural industries and rural areas in the United States.
BSPM 102	Insects, Science, and Society		Yes	How insects develop, behave, and affect human activity. What every student should know about the most diverse life form on Earth.
BSPM 308	Ecology and Management of Weeds		Yes	Classification, characteristics; weed biology and ecology; control by cultural, mechanical, chemical, and biological means; successional management.
BSPM 361	Elements of Plant Pathology		Yes	Diseases of economic plants.
BSPM 365	Integrated Tree Health Management		Yes	Insects and diseases in forest and urban ecosystems. Effects, diagnosis, prevention, and interactions.
BSPM 451	Integrated Pest Management		Yes	Concepts of integrated pest management and the strategies and tactics employed in the application of these concepts.
BSPM 462	Parasitology and Vector Biology		Yes	Protozoa, helminths, and insects and related arthropods of medical importance; systematics, epidemiology, host damage and control.
BUS 205	Legal and Ethical Issues in Business		Yes	Ethical, legal and regulatory issues in the U.S. business environment.
BUS 220	Ethics in Contemporary Organizations		Yes	Examination and application of the ethical principles that are fundamental to managing a successful high-integrity business or organization.
BUS 260	Social-Ethical-Regulatory Issues in Business		Yes	Legal issues, business ethics, corporate responsibility, and the business interface within the U.S. regulatory and business environment.
BZ 332	Introductory Phycology		Yes	Evolution, diversity, ecology and global impact of algae
BZ 418	Ecology of Infectious Disease		Yes	Effects of disease on humans and natural populations
BZ 420	Evolutionary Medicine		Yes	Integration of evolutionary biology with behavior, genetics, and ecology to understand health and disease.
BZ 425	Molecular Ecology		Yes	Introduction to molecular genetic markers for questions in ecology, evolution, behavior, and conservation.
BZ 450	Plant Ecology		Yes	Relation of plants to their environment.
BZ 471	Stream Biology and Ecology		Yes	Biology and ecology of running waters.
CHEM 103	Chemistry in Context		Yes	Chemistry, chemical principles from more conceptual, less mathematical perspective; how chemical substances, chemical reactions affect our daily lives.
CIVE 102	Introduction: Civil/Environmental Engineering		Yes	Civil engineering profession, computer applications and programming related to civil engineering; introduction to surveying.
CIVE 203	Engineering Systems and Decision Analysis		Yes	Civil engineering infrastructure systems, numerical and decision analysis techniques, applications of risk analysis.
CIVE 303	Infrastructure and Transportation Systems		Yes	Principles of infrastructure systems, transportation systems, applications of spatial data and GIS, project management and engineering economy.
CIVE 322	Basic Hydrology		Yes	Hydrologic cycle, soil moisture, groundwater, runoff processes, applications in water resources and environmental engineering.
CIVE 401	Hydraulic Engineering		Yes	Basic principles of fluid mechanics applied to practical problems in hydraulic engineering.
CIVE 424	Modern Gas and Oil		Yes	Introduction to opportunities and challenges of modern gas and oil development, including synergies with other energy sources.
CIVE 440	Nonpoint Source Pollution		Yes	Principles, processes, impacts, and control of nonpoint source pollution of surface and groundwater.
CIVE 441	Water Quality Analysis and Treatment		Yes	Physical, chemical and biological methods for the characterization of waters and wastewaters.
CO 301B	Writing in the Disciplines: Sciences		Yes	Learning writing strategies for addressing general audiences in sciences.
CO 301C	Writing in the Disciplines: Social Sciences		Yes	Learning writing strategies for addressing general audiences in social sciences.

CON 465	Construction Management Professional Practice		Yes	Professional practice using an understanding of the contractual and working relationships among all participants in the design/construction process.
DM 272	Consumers in the Marketplace		Yes	Analysis and evaluation of consumers in the marketplace as applied to merchandising.
E 142	Reading Without Borders		Yes	Authors from a range of international, cross-national, cultural, and ethnic backgrounds focusing on themes of immigration, exile, or education.
E 238	20th-Century Fiction		Yes	20th-century fiction chosen for its relevance to global and cultural awareness.
E 339	Literature of the Earth		Yes	Non-fiction, fiction, and poetry on landscape, climate, animality, ecology, place.
ECON 101	Economics of Social Issues		Yes	Economic analysis of poverty, crime, education, and other social issues. Basics of micro, macro, and political economy.
ECON 211	Gender in the Economy		Yes	Role gender plays in economies; the way gender affects economic outcomes for individuals and societies.
ECON 325	Health Economics		Yes	Economic analysis of health care markets, health insurance markets, and public policy regarding health care.
ECON 340	Introduction: Economics of Natural Resources		Yes	Concepts, theories, institutions; analytical methods for economic evaluation of alternative resource use patterns and land use plans.
ECON 370	Comparative Economic Systems		Yes	Place of the economy in different societies; nature and evolution of capitalism; crisis of command economies and capitalist restoration.
ECON 440	International Economics I		Yes	Theory of international trade; payments, commercial policies, and economic integration.
ECON 460	Economic Development		Yes	Economic problems of underdeveloped nations.
ENGR 101	Grand Challenges in Engineering		Yes	National Academy of Engineering's Grand Challenges in Engineering: overview, roles of engineering disciplines, engineering and societal challenges.
ERHS 479	Environmental Health Practice		Yes	Practicing environmental health
ESS 120	Intro to Ecosystems and Watershed Sciences		Yes	Exploration of the fields of Ecosystem Science and Sustainability and Watershed Science, including career pathways.
ESS 330	Quantitative Reasoning for Ecosystem Science		Yes	Understanding diverse approaches for using data and models to understand complex ecological systems.
ESS 411	Earth Systems Ecology		Yes	Earth as a system, stressing ecological interactions among energy, water, and biogeochemistry.
ETST 240	Native American Cultural Experience		Yes	Exploration of Native lives and expressions through examination of Native architecture, art, music, film, activism, and literature.
ETST 404	Race Formation in the United States		Yes	Concept of race as a social construct in the shaping of U.S. character, values, and institutions.
ETST 414	Development in Indian Country		Yes	Critical examination of history, public policy, and tribal strategies for economic development and natural resource management in Indian country
ETST 441	Indigenous Knowledges		Yes	Develop an understanding of Indigenous world views, by exploring Indigenous knowledge production, knowledge systems, core values, and ways of living. Builds on the foundation that Indigenous peoples have always had their own philosophies, teachings, and consciousness. Explores the rigorous and deep-rooted, Indigenous intellectual traditions and the sharing of information both formalized and localized
F 311	Forest Ecology		Yes	Relationships of ecological concepts to the dynamics of forest ecosystems.
F 322	Economics of the Forest Environment		Yes	Economic principles and techniques applied to forested environments.
F 324	Fire Effects and Adaptations		Yes	Introduction to fire ecology including fire history, ecosystem effects, and organism responses.
F 325	Silviculture		Yes	Principles of silviculture and their application to major forest types of United States.
F 330	Timber Harvesting and the Environment		Yes	Principles of timber harvesting and effects of logging on the environment.
F 421	Forest Stand Management		Yes	Forest management plan preparation: forest condition and health assessment; evaluation of silvicultural treatments; implementation and monitoring.

F 466	Urban and Community Forestry		Yes	Policies and management of publicly and privately owned community forests in urbanized areas.
FSHN 125	Food and Nutrition in Health		Yes	Nutritional quality and safety of food related to human health.
FSHN 150	Survey of Human Nutrition		Yes	Basic nutrition principles and concepts; their application to personal health and interactions with societal and environmental issues.
FSHN 450	Medical Nutrition Therapy		Yes	Use of nutrition therapy in the treatment of acute conditions and chronic disease states.
FSHN 451	Community Nutrition		Yes	Influences on nutritional status, assessment of nutrition problems and needs, planning and evaluation of nutrition intervention programs.
FSHN 455	Food Systems: Impact on Health/Food Security		Yes	Conventional and alternative food systems and their impact on nutrition, health, food security, and the environment.
FTEC 110	Food-From Farm to Table		Yes	Commercial food processing, related to preservation and enhancing of food quality, safety, and value.
FTEC 400	Food Safety		Yes	Safety of human food emphasizing safe production, processing, marketing, preparation, consumption, and regulations.
FW 111	Basic Outdoor Skills in FWCB.		Yes	Basic outdoor skills crucial for FWCB and outdoor novices. History of wildlife conservation and reasons for declining outdoor participation. Required field trips.
FW 204	Introduction to Fishery Biology		Yes	Exposure to sampling techniques, agencies, and topics in fishery biology careers.
FW 260	Principles of Wildlife Management		Yes	Ecology principles applied to conservation and management of fish /wildlife resources. Quantitative methods, socioeconomic factors, population dynamics.
FW 300	Biology and Diversity of Fishes		Yes	Biology of fishes: anatomy, taxonomy, physiology, behavior, ecology, evolution, and zoogeography.
FW 301	Ichthyology Laboratory		Yes	Anatomy, taxonomy, evolution, and ecology of North American freshwater fishes. Field trip required.
FW 370	Design of Fish and Wildlife Projects		Yes	Design, analysis, and evaluation of wildlife projects; lab exercises in design and data analysis; preparation and presentation of project proposals.
FW 375	Field Wildlife Studies		Yes	Field trip to see wildlife management and habitats and to discuss problems and practices with professional ecologists and resources managers.
FW 400	Conservation of Fish in Aquatic Ecosystems		Yes	Ecological processes that create habitat and biotic template for fish in aquatic ecosystems; human effects; strategies for conserving fishes.
FW 401	Fishery Science		Yes	Theory, philosophy, and applications for study and management of fishery resources.
FW 402	Fish Culture		Yes	Principles and practices to produce food, bait, and sport fishes.
FW 455	Principles of Conservation Biology		Yes	Review of efforts to study and conserve biological diversity, focused on fish and wildlife populations.
FW 467	Wildlife Disease Ecology		Yes	Ecological, epidemiological, and evolutionary principles of disease in fish and wildlife populations; contemporary issues in disease ecology.
FW 471	Wildlife Data Collection and Analysis		Yes	Analysis methods used in wildlife management and research; adaptive resource management with emphasis on learning through field and computer labs.
FW 472	Issues in Animal Conservation and Management		Yes	Current and emerging issues in fish and wildlife conservation and management at the state, national and global scales.
FW 475	Conservation Decision Analysis		Yes	Structured approaches to conservation and management of vertebrates; articulating objectives, developing management options, and predicting outcomes.
GEOL 424	Modern Gas and Oil		Yes	Introduction to opportunities and challenges of modern gas and oil development, including synergies with other energy sources.
GEOL 452	Hydrogeology		Yes	Interaction of water and geologic materials; surface and groundwater; quantitative analysis and geologic effects on quality and flow of groundwater.
GR 100	Introduction to Geography		Yes	Major geographic themes applied to selected regions; physical environment, human- land relationships, regional analysis.

GR 210	Physical Geography		Yes	Energy, mass budget, and human impacts on atmosphere, hydrosphere, and continental land surfaces.
GR 213	Climate Migrants		Yes	Explore the various drivers of migration, emphasizing climate and others including biogeographic, political, economic, and social factors
GR 320	Cultural Geography		Yes	Geographic analysis of cultural phenomena, elements emphasizing human-land relationships and spatial patterns of agriculture, cities, language, religion
GR 348	Biogeography		Yes	Species distribution of plants and animals in relation to earth history and environments, evolution, and ecology.
GR 440	Political Geography		Yes	Examines the meaning of political space; states and nations; competition for territory, including methods and justifications; the structure of political space focusing on states; geopolitics; and the state in an era of globalization. Concepts are illustrated by real-world situations
HDFS 320	Cognitive and Language Development		Yes	Cognitive and language development from birth to adulthood; including biological, social, and cultural influences.
HES 345	Population Health and Disease Prevention		Yes	Causes of disease throughout the lifespan and interventions designed to prevent disease.
HES 410	Bioethics: Concepts and Controversies		Yes	Origins of bioethics and analysis of cases/controversies in contemporary bioethics.
HES 476	Exercise and Chronic Disease		Yes	Interaction of physical activity with pathophysiology and treatment of chronic diseases and conditions.
HIST 476	History of America's National Parks		Yes	The national park system and its development from concept to design to implementation.
HORT 221	Landscape Plants		Yes	Identification, landscape features, cultural requirements, and landscape use of coniferous and deciduous trees and shrubs, vines, and evergreens xeriscaping.
HORT 310	Greenhouse Management		Yes	Design and use of enclosed structures to manipulate controlled environments, effects on growth as applied to crops, production, and marketing crops.
HORT 344	Organic Greenhouse Production		Yes	Fundamentals of greenhouse production using organic production methods.
HORT 370	Landscape Irrigation		Yes	Necessary skills to design and manage irrigation systems used in the landscape industry.
HORT 401	Medicinal and Value-Added Uses of Plants		Yes	Chemical, biochemical and ethnobotanical perspective on the medicinal and value-added uses of plants.
HORT 454	Horticulture Crop Production and Management		Yes	Production and management of horticulture crops.
HORT 466	Community Forestry		Yes	Policies and management of publicly and privately owned community forests in urbanized areas.
IE 272	World Interdependence - Current Global Issues		Yes	A global perspective focusing on an international topic receiving current media coverage.
IE 300	Global Studies		Yes	Traditional and changing institutions, systems, values and identities in selected cultures and how they are perceived, portrayed, and experienced.
IE 450	International Social Welfare and Development		Yes	Framework of social welfare and development in international area; social need with focus on cultures/countries in transition.
IE 470	Women and Development		Yes	Research and policy issues related to women in developing countries.
IE 471	Children and Youth in Global Context		Yes	Global issues affecting children and youth are examined in cultural context.
IE 472	Education for Global Peace		Yes	Peacekeeping, peacemaking and peace-building on micro and macro levels, and education's role in them, as key components for sustaining global peace.
IE 479	International Development Theory and Practice		Yes	Contemporary issues in international community and economic development with practical and theoretical analysis from interdisciplinary perspectives.
INST 200	Interdisciplinary Approaches to Globalization		Yes	Uses an interdisciplinary lens to explore and elucidate the issues, themes, and problems associated with globalization. Helping students navigate the complexities of our globalized and globalizing world, introducing students to diverse cultures and societies around the world and highlight global patterns and connections, and familiarizing students with the value of interdisciplinary research.

INTD 340	Interior Materials and Finishes		Yes	Analysis of materials and resources for interiors.
INTD 476	Interior Design Project		Yes	Large scale projects representing research-based design solutions, illustrating synthesis and analysis of entry level concepts, portfolio development.
IU 171	A Call to Lead II: Social Change Model		Yes	Social change model of leadership development.
JTC 316	Multiculturalism and the Media		Yes	Media and multiculturalism with emphasis on race, ethnicity, and other protected groups.
JTC 411	Media Ethics and Issues		Yes	Professional ethics, issues of media performance and of the relation of media systems to the social systems.
JTC 412	International Mass Communication		Yes	Media communication systems, their roles throughout the world; news flow; propaganda in national development; role of foreign correspondents.
JTC 419	Food and Natural Resources Communication		Yes	Natural resources issues and the role of news media, PR, and advertising and how people form beliefs about food and natural resources in communication.
JTC 461	Writing about Science, Health, and Environment		Yes	Writing about science, health, and the environment for lay audiences from a journalistic perspective.
LAND 241	Environmental Analysis		Yes	Exploration and understanding of natural and cultural landscapes through analytical simulation techniques.
LAND 364	Design and Nature		Yes	Computer-aided processes for siting, organizing, and evaluating cultural activities within ecologically fragile, landscape-scale environments.
LAND 368	Landscape Irrigation and Water Conservation.		Yes	Practical approaches and methods of irrigation, water conservation, and water management in the designed landscape.
LAND 444	Ecology of Landscapes		Yes	Theories, methods, and practices for interpreting, describing, and representing natural and human modified landscapes.
LAND 454	Landscape Field Studies		Yes	Field observation of spatial and temporal landscape patterns resulting from natural and cultural processes and interactions.
LEAP 200	Advocacy in the Visual and Performing Arts		Yes	The importance of the role of advocacy for the arts, issues of censorship, public funding, arts education, and artists' advocacy through the arts.
LEAP 300	Arts Outreach and Community Engagement		Yes	Research, development and production of arts outreach projects; team projects for community engagement.
LIFE 320	Ecology		Yes	Interrelationships among organisms and their environments using conceptual models and quantitative approaches.
MATH 348	Theory of Population and Evolutionary Ecology		Yes	Principles and methods for building, analyzing, and interpreting mathematical models of ecological and evolutionary problems in biology.
MECH 303	Energy Engineering		Yes	Energy generation (coal, oil, natural gas, solar, wind, geothermal, hydropower, tidal, biofuel, nuclear...), conversion, distribution, storage, efficiency.
MECH 408	Applied Engineering Economy		Yes	The basic principles and calculations of engineering economy with application to real problems, including energy and the environment.
MECH 463	Building Energy Systems		Yes	Comfort, psychometrics, loads, solar radiation, heating and cooling system design, transport, solar system design, economics.
MGT 476	Negotiation and Conflict Management		Yes	Principles and practices of negotiation and conflict management including bargaining as a social and managerial activity.
MKT 365	International Marketing		Yes	Analysis of international markets and development of strategic and tactical options for marketing across national boundaries.
NR 220	Natural Resources Ecology and Measurements		Yes	Ecology of Rocky Mountain ecosystems. Basic measurements and integrated management of natural resources. Pingree Park Campus.
NR 300	Biological Diversity		Yes	Biological diversity examined in context of species; extinction. Principles, techniques of conservation biology utilized to understand and resolve issues.
NR 319	Geospatial Applications in Natural Resources		Yes	Introduction to global positioning systems (GPS), geographic information systems (GIS) and remote sensing (RS) with natural resource applications.
NR 322	Introduction to Geographic Information Systems		Yes	Fundamental concepts of spatial data handling and computer-assisted map analysis.

NR 323	Remote Sensing and Image Interpretation		Yes	Remote sensing systems and applications; characteristics of photographic, scanner and radar images; imagery interpretation.
NR 326	Forest Vegetation Management		Yes	Ecologically-based management to restore and manage forests.
NR 370	Coastal Environmental Ecology		Yes	Sensitive and complex coastal area environments and the effects of accelerated change on and offshore caused by human activities.
NR 400	Public Communication in Natural Resources		Yes	Examine how public communication shapes opinion and understanding of natural resource issues. Combines study of key communication concepts with experiential projects, including critique of a public hearing and creation of media products. Through readings, case studies, and assignments, analyze approaches for effective public communication. Design brochures, websites, videos, etc., eventually collaborating in teams with real-life 'clients'.
NR 420	Integrated Ecosystem Management		Yes	Natural resource management exercises; quantitative integration techniques, group dynamics.
NR 422	GIS Application in Natural Resource Management		Yes	Development and implementation of GIS projects and problems in spatial data analysis.
NR 440	Applications in Conservation Planning		Yes	Conservation planning method applications that integrate natural resources by conservation organizations and government agencies.
NRRT 231	Principles-Parks/Protected Area Management		Yes	Provide a broad but comprehensive understanding of the history, challenges, and practices of parks and protected areas management.
NRRT 262	Principles of Environmental Communication		Yes	Principles of environmental communication, education, and interpretation for managing natural and cultural resources.
NRRT 270	Principles of Natural Resource Tourism		Yes	Tourism and private commercial outdoor recreation industry in America.
NRRT 301	Conservation Leadership		Yes	Approaches to conservation leadership.
NRRT 320	International Issues-Recreation and Tourism		Yes	History, development, and preservation of international parks, preserves, tourist and historical sites.
NRRT 330	Social Aspects of Natural Resource Management		Yes	Review social science concepts and research important to the way humans use and manage natural resources. Using lectures and readings on social theory and management frameworks, dissect current natural resource management issues. Case study presentations, exercises, and discussions will connect various social science approaches and theoretical frameworks to their natural resource applications.
NRRT 340	Principles in Conservation Planning and Mgmt.		Yes	Social, economic, legal, and ecological concepts that shape planning and management frameworks within conservation.
NRRT 362	Environmental Conflict Management		Yes	Theoretical, critical and practical approaches to negotiation, mediation and conflict management strategies related to natural resources.
NRRT 400	Environmental Governance		Yes	Theory and practice of prevalent environmental governance approaches in diverse social and environmental contexts.
NRRT 401	Collaborative Conservation		Yes	Guiding principles and practices for effectively engaging stakeholders in conservation issues and management.
NRRT 431	Protected Areas, Working Lands, Livelihoods		Yes	Management practices of protected areas and working lands that work at the interface of ecological, human, and economic dimensions.
NRRT 442	Tourism Planning		Yes	Examines the relationship among tourists, tourist developments and the planning of tourist attractions and services. Focuses on the planning of tourist resources and programs within a geographic region, as well as at a destination and site level. Planning tools and design concepts are reviewed and analyzed. A regional strategic planning process is applied to the development of a regional tourism plan in Colorado.
NRRT 463	Non-profit Administration in Conservation		Yes	Role of NGOs in protected-area management and conservation education; models for development, including grant writing, in conservation
OT 355	Handicapped Individual in Society		Yes	Description and exploration of disabling conditions; review of support systems including legal and financial implications.

PHIL 103	Moral and Social Problems		Yes	Contemporary ethical issues in the United States, such as abortion, euthanasia, and genetic engineering.
PHIL 104	Values, Culture, and Food Animal Agriculture		Yes	Evolution of the social values and cultural understandings shaping modern animal agriculture; current problems in animal agriculture.
PHIL 205	Introduction to Ethics		Yes	Problems and theories concerning values and standards, right action, and the good life.
PHIL 240	Philosophies of Peace and Nonviolence		Yes	Classic and contemporary religious and philosophical work on peace and nonviolence.
POLS 364	Air, Climate, and Energy Policy Analysis		Yes	Discussion and analysis of energy use and its impact on the economy and environment with an emphasis on future policy.
POLS 405	Race and Ethnicity in U.S. Politics		Yes	Relationships among American racial/ethnic groups, political attitudes, behavior; race and ethnicity roles in elections; implications for public policy.
POLS 431	International Law		Yes	Rules and obligations for conduct of relations among states and other international entities.
POLS 433	International Organization		Yes	History, development, structure, process, and activity of selected public international organizations.
POLS 435	United States Foreign Policy		Yes	Institutions, responsibilities, processes, and issues in formulation and execution of U.S. foreign policy.
POLS 443	Comparative Social Movements		Yes	Reviews major works dealing with conceptual and theoretical foundations of social movements and examines a number of cases across regions.
POLS 460	Public Policy Process		Yes	Explanations of U.S. policy formation, implementation, and impact.
RS 432	Rangeland Measurements and Monitoring		Yes	Vegetation sampling and field measurements emphasizing applications for monitoring and adaptive management.
RS 452	Rangeland Herbivore Ecology and Management		Yes	Ecology and management of large ungulate herbivores including consumer functions at organismal and ecosystem levels.
RS 478	Ecological Restoration		Yes	Analysis of environmental factors influencing restoration of disturbed lands and practices for successful restoration of disturbed ecosystems.
SOC 330	Social Inequality		Yes	Theories of social inequality and mobility and their ramifications in American society.
SOC 359	Green Criminology		Yes	Environmental offenses, victims, and responses to environmental crimes and harms
SOC 364	Agriculture and Global Society		Yes	Analysis of relationships between global agriculture and social change.
SOC 431	Community Dynamics and Development		Yes	Nature of community; its institutions, problems and processes, including growth, disintegration, and development.
SOCR 320	Forage and Pasture Management		Yes	Fundamentals of establishment, management, and utilization of cultivated forages including hay, silage, and pasture production.
SOCR 350	Soil Fertility Management		Yes	Managing soil fertility and fertilizers to meet plant nutrient requirements in an environmentally sound manner with emphasis on nutrient cycling.
SOCR 370	Irrigation Principles		Yes	Determination of irrigation water requirements based on the estimation of storage and movement of water in the soil-plant-atmospheric system.
SOCR 371	Irrigation of Field Crops		Yes	Management of irrigation systems for field crops with emphasis on irrigation methods, irrigation scheduling and strategies for water conservation. Required field trips.
SOCR 415	Pollinator Management in Agroecosystems		Yes	Fundamental concepts of pollinator management, sustainable crop-pollinator interactions, global issues on pollinator conservation.
SOCR 421	Crop and Soil Management Systems II		Yes	Principles of crop and soil management with emphasis on soil erosion control, water conservation, and plant-water relationships.
SOCR 441	Soil Ecology		Yes	An integrative, hands-on experience in the theory and application of ecology principles to the soil environment.
SOCR 442	Forest and Range Soils		Yes	Soil and water relationships in forest and rangeland ecosystems; significant properties in their management.
SOCR 455	Soil Microbiology		Yes	Microbial activities in agricultural, forest, and grassland soils; in soil-plant relationships; and in maintenance of environmental quality.

SOCR 467	Soil and Environmental Chemistry		Yes	Fundamental principles of soil chemistry with respect to environmental reactions between soils and other natural materials and priority pollutants.
SOWK 352	Indigenous Women, Children and Tribes		Yes	Historical and contemporary lives of women, children, and tribal communities.
SOWK 410	Social Welfare Policy		Yes	Issues and processes shaping social welfare institutions; definitions of social welfare policy; analytical framework for policy analysis.
SOWK 450	International Social Welfare and Development		Yes	Framework of social welfare and development in international area; social need with focus on cultures/countries in transition.
SPCM 334	Co-Cultural Communication		Yes	Cultural concerns of communication among co-cultures of United States; diversity; self-awareness as cultural imperative for enhanced communication.
SPCM 335	Gender and Communication		Yes	Analysis and exploration of communication as it relates to gender and women's and men's roles and identities.
SPCM 357	Film and Social Change		Yes	Ways in which the medium of motion pictures has sparked significant social changes at home and abroad.
VS 313	Prevention and Control of Livestock Diseases		Yes	Common ailments of livestock; sanitation and disease prevention and control.
WR 416	Land Use Hydrology		Yes	Fundamental concepts in hydrology and effects of land use on hydrologic processes.
WR 417	Watershed Measurements		Yes	Instrument and field techniques in watershed science. Project design and data analysis.
WR 418	Land Use and Water Quality		Yes	Physical, chemical, biological water quality parameters affecting land use; land management to maintain water quality; water quality standards, legislation.
WR 440	Watershed Problem Analysis		Yes	Capstone integration of spatial watershed issues, focused on problem solving in watershed science.
WR 474	Snow Hydrology		Yes	Snowfall, accumulation, distribution, physical processes in the snowpack, energy balance, ablation and runoff, measurement methods, runoff forecasting.
	Total Undergraduate Courses:	108	241	

Graduate Courses

Course #	Course Name	Sustainability Focused	Sustainability Inclusive	Sustainability Content
GES 520	Issues in Global Environmental Sustainability	Yes		Analysis of the different major dimensions/definitions of sustainability in current issues involving environmental, social and economic systems.
AGRI 510	Sustainable Agriculture	Yes		An interdisciplinary study comparing conventional and alternative land management practices, using an agroecosystem analysis approach.
AGRI 511A	Study Abroad: Field Applications in Sustainable Agriculture	Yes		Travel to Todos Santos, Mexico for a seven day experience where in-the-field laboratory skills in sustainable agriculture are practiced. Investigate and implement unique, real-time initiatives developed in class while in Todos Santos.
AGRI 602	Bioenergy Policy, Economics, and Assessment	Yes		Bioenergy policy; economic principles applied to biofuel production; evaluation of environmental impacts of bioenergy production.
AGRI 632	Managing for Ecosystem Sustainability	Yes		Impacts of ecological processes and tools used to manage the ecosystem for sustainability
ANEQ 548	Issues in Manure Management	Yes		Manure management practices maximizing benefits to soils and crops while minimizing hazards to air and water quality and complying with regulations
ANTH 529	Anthropology and Sustainable Development	Yes		Global development goals, poverty and hunger, environmental sustainability, education, and equity.
AREC 540	Economics of Natural Resources	Yes		Theory, methods, and policy in environmental and natural resource economics.
AREC 541	Environmental Economics	Yes		Economics of environmental policy; partial equilibrium and general equilibrium model; pollution; natural environments; population and economic growth.

BSMP 502A-G	Topics in Plant Pathology	Yes		Course integrates health and environmental aspects of sustainability related to plants
BZ 572	Phytoremediation	Yes		Environmental cleanup using plants
CBE 524	Bioremediation	Yes		Course focuses on the environmental aspects of sustainability related to biotechnology for site remediation, Biodegradation, bioreactor design, and in situ bioremediation.
CBE 540	Advanced Biological Wastewater Processing	Yes		Fundamentals of environmental biotechnology: environmental microbiology, microbial kinetics, basic reactor design, wastewater treatment.
CHEM 555	Chemistry of Sustainability	Yes		The central role of chemistry for achieving sustainability in key areas including chemicals and materials, energy, and environment.
CIVE 504	Wind Engineering	Yes		Influence of wind on humanity. Applications to structures, air pollution, wind energy, agricultural aerodynamics, snow movement, human comfort.
CIVE 534	Applied and Environmental Molecular Biology	Yes		Environmental microbiology and molecular biology tools used to investigate both natural systems and engineered processes
CIVE 575	Sustainable Water and Waste Management	Yes		The science, engineering, and policy behind sustainable water and waste practices. Sustainable urban water and wastewater management.
CIVE 580B3	Environmental Engr at the Water-Energy-He	Yes		Environmental Engineering and it's role in the water-energy and health nexus
CIVE 580B4	Pollution, Exposure, and the Environment	Yes		Pollution, exposure and the environment
CIVE 592A-L	Seminar	Yes		Seminar integrates topics in wind and environmental engineering including environmental aspects of sustainability
CIVE 625	Quantitative Eco-Hydrology	Yes		Quantitative examination of the hydrologic and ecologic mechanisms underlying climate-soil-vegetation and soil moisture dynamics.
CON 521	Sustainable Building & Infrastructure Systems	Yes		Issues and state-of-the-art resources needed to construct, remodel/retrofit, operate and maintain the built environment (buildings and infrastructure). Specifically, resources will include major materials, components and technologies, as well as energy and water resources are needed in the different life-cycle phases of the building or infrastructure project
E 636	Environmental Literature and Criticism	Yes		Literary, critical, and theoretical representations of nature, animals, human-environment relations.
ECOL 610	Ecosystem Ecology	Yes		Concepts, methods, issues in ecosystem science: energy and matter cycling, systems perspectives, simulation modeling, sustainability, global change.
ECON 540	Economics of Natural Resources	Yes		Theory, methods, and policy in environmental and natural resource economics.
ECON 541	Environmental Economics	Yes		Economics of environmental policy; partial equilibrium and general equilibrium model; pollution; natural environments; population and economic growth.
ECON 741	Advanced Environmental Economics	Yes		Advanced theory, methods, and literature in environmental economics.
ENGR 520	Engineering Decision Support/Expert Systems	Yes		Decision support systems for complex engineering problems including sustainability challenges; multicriteria decision making and optimization; hybrid knowledge- based/algorithmic methods.
ENGR 597	Group Study in Systems Engineering	Yes		Capstone study experience in systems engineering to include sustainability topics.
ERHS 675	Environmental Health Regulatory Compliance	Yes		Requirements and strategies for meeting obligations under regulations and laws involved in environmental and occupational health protection.
ESS 501	Principles of Ecosystem Sustainability	Yes		Principles of ecosystem sustainability and threats to sustainability. Students will investigate and develop case studies.
ESS 524	Foundations for Carbon/Greenhouse Gas Mgmt.	Yes		Foundations for understanding greenhouse gas emissions management and accounting.
ESS 542	Greenhouse Gas Policies	Yes		Rules, regulations and standards for greenhouse gas management and accounting.
ESS 545	Applications in Greenhouse Gas Inventories	Yes		Overview of methods for estimating greenhouse gas emissions and mitigation potential for agriculture and forestry activities.

ESS 555	Life cycle Assessment for Sustainability	Yes		The quantitative and qualitative measure of cradle-to-grave impacts of products and services on the environment, the economy, and society.
ESS 575	Models for Ecological Data	Yes		Gaining insight about the operation of ecological processes using models and data.
ESS 581A	Citizen Science for Sustainability	Yes		Course combines teaching the theory of community science with the practice of doing it through applied research projects. Our instruction centers on the cross-cutting themes of engagement, process and planning, place-based science and policy relevance. The course will walk students through the process of developing a community science project with deep and diverse stakeholder engagement to build sustainability solutions.
FSHN 508	International Nutrition and World Hunger.	Yes		Magnitude, causes, and nature of hunger and under-nurturing; programs and polices to alleviate hunger.
FW 555	Conservation Biology	Yes		Ecological factors in conservation of biological diversity.
FW 568	Sustaining River Ecosystems in a Changing World	Yes		Applying the concepts and principles of freshwater ecosystem structure and function to develop a multidisciplinary and integrated understanding of the approaches and methods for restoring and sustainably managing these systems in the face of increasing human demands and rapid climate change
HIST 539	Reading Seminar - World Environmental History.	Yes		Major works in the field of world environmental history and the major historiographical debates.
JTC 670	Communication in the Social Processes of Risk	Yes		Communication and psychological, sociological, and cultural factors shaping risk involving technology, health, environment, disasters, sustainability.
MECH 575	Solar and Alternative Energies	Yes		Solar radiation, flat-plate collectors, energy storage, space heating and cooling, power generation, applications, simulation.
MGT 667	Global Social Sustainable Entrepreneurship	Yes		Global challenges-poverty, environmental degradation, public health, agriculture. Role of entrepreneurial management in private and public sector.
MGT 668	New Venture Development for Social Enterprise	Yes		Early stages of a new venture, including creation of business plan. Additional study of social entrepreneurship and sustainable business strategies.
MKT 601	Marketing for Social Sustainable Enterprise	Yes		Customer and stakeholder value creation and capture. Marketing strategy with emphasis on social sustainable organizations.
NR 535	Action for Sustainable Behavior	Yes		Review sustainability issues and develop solutions considering environments; economics; psychology; sociology; law and politics; and administration.
NR 540	Environmental Issues	Yes		Examination of Water Resources, Biological Diversity, Ecologic Reconciliation, and Ecosystem Services.
NR 541	Conservation Policy, Finance, and Governance	Yes		Overview of conservation policy, finance, and governance issues at the local, national, and international levels.
NR 542	Global Change and Conservation	Yes		Potential ecological, societal, and economic impacts of global change across scales in the context of conservation.
NR 543A	Catalyzing Change: Conflict and Conservation	Yes		Communication, conflict management, group decision-making theories and tools to effectively create change in the field of conservation.
NR 543B	Catalyzing Change: Collaborative Conservation	Yes		Collaborative communication theories, methods, and tools to effectively create change in the field of conservation.
NR 547	Poverty and Sustainable Development	Yes		Theoretical and methodological tools to analyze the interactions between poverty and sustainable development in the field site country.
NR 548A	Conservation Planning and Management: Mexico	Yes		Fundamental theories and management practices of protected areas in the context of southern Mexico.
NR 548B	Conservation Planning and Management: Global	Yes		Fundamental theories and management practices of protected areas in a global context
NR 549A	Conservation/Systems Leadership	Yes		Conservation leadership development by exposure to leadership models, theories, case studies, assessments and trainings.
NR 549B	Conservation/Systems Leadership: Field	Yes		Effective environmental leadership across cultures through exposure to leadership models, theories, case studies, assessments and trainings.

NR 550	Sustainable Military Lands Management	Yes		Overview of military lands in the U.S. --historical, geographical, environmental-- and evolution of military lands as part of the federal lands system.
NR 625	Community-Based Natural Resource Management	Yes		History, theory, practice, and evaluation of community-based natural resource management.
NR 678	Advanced Ecological Restoration	Yes		Analysis of environmental factors influencing restoration of disturbed lands and practices for successful restoration of disturbed ecosystems.
NRRT 521	Sustainable Ski Area Management	Yes		Examines sustainability issues that relate specifically to ski resort development and management.
NRRT 550	Ecotourism	Yes		Concept of ecotourism, impacts associated with ecotourism, and role of education/interpretation in mitigating these impacts.
NRRT 615	Sustainable Tourism Development Foundations	Yes		Theory, practice, history, terminology and issues surrounding sustainable tourism development. Sustainable tourism planning and management are examined in the context of sustainable livelihoods. A comprehensive survey of sustainable tourism components – including indicators of sustainability, community participation, poverty alleviation, alternative tourism, governance and power, and socio-environmental responsibility – will be covered from a systems thinking perspective.
POLS 670	Politics of Environment and Sustainability	Yes		Domestic, international, and comparative dimensions of environment and natural resource politics and policy.
POLS 709	Environmental Politics in the U.S	Yes		Selected primary materials on governmental performance, groups, and mass public in American environmental politics.
POLS 729	Political Theory and the Environment	Yes		Political thought applied to questions of the environment.
POLS 739	International Environmental Politics	Yes		Theories and methodologies used in analyzing international environmental politics and policy.
POLS 749	Comparative Environmental Politics	Yes		Application of comparative political theory to analysis of environmental politics.
POLS 759	Environmental Policy and Administration	Yes		Effects of regulation, intergovernmental relations, and resource availability on federal environmental programs in U.S.
SOC 564	Environmental Justice	Yes		Unequal distribution of environmental risks, benefits, policies and regulatory practices across different populations.
SOC 566	Contemporary Issues of Developing Countries	Yes		Social, economic, and technological aspects of sustainability in relation to developing countries.
SOC 663	Sociology of Sustainable Development	Yes		Social dimensions of sustainable Third World development and implications for policy.
SOC 668	Environmental Sociology	Yes		Connections between social organizations, the environment, and science and technology.
WS 510	Women and Sustainability	Yes		Examination of sustainability issues with a focus on development policies and impacts on communities from an international feminist perspective.
ACT 605	Accounting for Sustainable Enterprises		Yes	A survey of financial, managerial, and sustainability accounting systems and reports.
AGED 510	American Agriculture Values and Ideology		Yes	Explore how people have conceptualized agriculture in the United States, how agricultural ideologies have shaped our agricultural values, and how differing agricultural ideologies impact the work in agriculture today and in the future.
AGRI 500	Advanced Issues in Agriculture		Yes	Scientific, technical, cultural, and social issues facing agriculture, and their interrelationships.
AGRI 521	Emerging Issues and Challenges for Global Agriculture		Yes	Interdisciplinary course containing tools and knowledge to discuss the emerging challenges of the global agriculture, water, and food system.
AGRI 550	Capacity Building for a Changing Workplace		Yes	A framework for competence in workplaces applies situation analysis/problem-solving to solve real-life agricultural situations shared by experts
AGRI 562	Sociology of Food Systems and Agriculture		Yes	How agricultural choices generate intended and unintended consequences for human communities and the natural environment.
AGRI 570	Issues in Animal Agriculture.		Yes	Issues that have a major impact on the direction of changes in animal agriculture.

AGRI 631	Building the Business		Yes	Skills required to organize and implement a modern business enterprise with focus on land-based operations.
AGRI 633	Understanding and Managing Animal Resource		Yes	Evaluating nutritional requirements of a variety of animals, how and why requirements vary according to level of production.
AGRI 635	Integrated Forage Management		Yes	Development of management plans that integrate diverse forage resources including native rangeland and cultivated forages. Experiential learning field trips.
AGRI 636	Analyzing and Managing the Business		Yes	Assimilating, preparing, and analyzing records; reading financial statements to manage a land-based business.
AGRI 637	Understanding Policy and Emerging Issues		Yes	Origination, purpose, and policy effects on land-based enterprises; policy effects on management decisions.
AGRI 638	Ecosystem Services on Agricultural Lands		Yes	Within an economics framework, explores the unique management challenges involved in a modern, diversified agricultural operation.
AGRI 639	Products to Profit		Yes	Marketing all aspects of the enterprise, beginning with land and forage resource and tracking all revenue generation.
AGRI 640	Integrated Resource Management Plan		Yes	Formulation of an optimal land management plan for a specific site based on specific goals and objectives.
AM 572	Merchandising Theories and Strategies		Yes	Theoretical perspective on the design and development of merchandising strategies for U.S. and global production, distribution, and consumption.
ANEQ 500	Recent Developments		Yes	Recent developments in animal science, avian science, and food technology.
ANEQ 626	Animal Nutrition, Emissions, and Management		Yes	Nutrients and nutrient function required to support animal life through all physiological states and assessment of the impacts on gaseous emissions from these animals.
ANEQ 720	Nutritional Energetics		Yes	Dietary energy use to meet animal requirements for maintenance, growth, pregnancy, and lactation; environmental, nutritional, and physiological effects.
ANTH 532	The Culture of Disaster		Yes	Study of how the human impacts of disaster and the process of recovery are shaped by cultural as well as structural realities.
ANTH 538	Food, Hunger, and Culture		Yes	Explores cultural and social understandings of food cross-culturally, including the symbolic meanings that people attribute to food and its consumption. Critically investigates the intersecting political, economic, social, and cultural influences on hunger, malnutrition, and other health concerns associated with food and nutrition globally. Assesses applied anthropological approaches to reducing hunger and other nutrition related health problems.
ANTH 554	Ecological and Social Agent-based Modeling		Yes	Exploring the use and making of agent-based models featuring interacting individuals in ecological and social simulation, with examples and projects.
ANTH 573	Paleoclimate and Human Evolution		Yes	Methods used to reconstruct past environments and understand the effects of past climate on the major trends of human evolution.
ANTH 617	Place, Space and Adaptation		Yes	Methods used to reconstruct past environments and understand the effects of past climate on the major trends of human evolution
ANTH 679	Applications of International Development		Yes	In-depth interdisciplinary analysis of theoretical and practical issues in implementing economic and community-based international development programs.
AREC 506	Applied Microeconomic Theory		Yes	Introduction to mathematical models in modern microeconomics, including choices and demand, production and supply, and market structures
AREC 507	Applied Welfare and Policy Analysis		Yes	How policies are crafted to effectively address social issues, especially for agriculture and the environment, and how they impact society.
AREC 540	Environmental and Natural Resource Economics			Theory, methods, and policy in environmental and natural resource economics.
AREC 605	Agricultural Production and Cost Analysis		Yes	Empirical application and analysis of production and cost issues in the agricultural and natural resource sectors.
AREC 610	Agricultural Marketing and Demand Analysis		Yes	Empirical application and analysis of agricultural marketing and demand issues in the agricultural and natural resource sectors.

AREC 647	Land Use Economics and Spatial Modeling		Yes	Use of spatial data in economic analysis of land use focusing on development patterns, land conservation, spatial externalities and agricultural land.
AREC 705	Advanced Production and Technological Change		Yes	Production theory is applied to real-world issues including risk, innovation, and environment, through lectures and readings of current literature.
ATS 555	Air Pollution		Yes	Nature, ambient concentrations, sources, sinks, and physiological activities of pollutants; meteorology; legislation; social and economic factors.
ATS 601	Atmospheric Dynamics I		Yes	Equations of motion; earth's rotation; balanced motion; vorticity and Rossby waves; shallow water models; potential vorticity
ATS 605	General Circulation of the Atmosphere		Yes	Observations and theory of the general circulation of the atmosphere, with emphasis on understanding physical mechanisms.
ATS 606	Introduction to Climate		Yes	Exchange of energy, water, and momentum through the atmosphere, surface, vegetation, oceans. Paleoclimate, climate change, variability, and feedbacks.
ATS 621	Atmospheric Chemistry		Yes	Overview of chemical kinetics and equilibria; sources and sinks of pollutants; photochemistry and smog formation; aqueous-phase chemistry; acid rain.
ATS 622	Atmospheric Radiation		Yes	Terrestrial, solar radiation propagation in the atmosphere; radiative components in energy budgets, weather systems, climate studies; remote sensing.
ATS 640	Synoptic Meteorology		Yes	Synoptic-scale weather systems; moist and dry atmospheric variables; static stability; vertical motion; fronts; cyclones and anticyclones.
ATS 681A3	Introduction to Climate Variability		Yes	Introduction to climate variability
ATS 742	Tropical Meteorology		Yes	Overview of the tropical atmosphere, monsoons, intraseasonal variability, hurricanes, theory of tropical convection and the large-scale circulation.
ATS 761	Land-Atmosphere Interactions		Yes	Exchange of energy, water, momentum, and carbon between the land surface and the atmosphere.
ATS 762	Biosphere-Chemistry-Climate Interactions		Yes	Explore the sensitivity of the climate system to atmospheric chemical composition with emphasis on connections to biospheric processes and feedbacks.
ATS 765	Climate Dynamics: Ocean Variability		Yes	Climate variability on time scales of years to millennia with focus on the role of the ocean circulation. Approach through dynamical systems theory.
BC 601	Responsible Conduct in Biochemistry		Yes	Design of experiments; error and fraud, publishing/grant application submission, scientific misconduct, classic examples of fraud, case studies.
BSMP 509	Herbicide Selectivity and Action		Yes	Selectivity of major photosynthetic and growth inhibitor herbicides based on herbicide transport, metabolism, and mode of action.
BSMP 521	Forest Health Issues		Yes	Current topics related to forest and shade tree health from ecosystems to tree defense physiology.
BSMP 551	Advanced Integrated Pest Management		Yes	Concepts of integrated pest management and the strategies and tactics employed in the practical application of these concepts.
BSMP 571	Techniques in Chemical Ecology		Yes	Practical experience with chemical techniques for separation, analysis, and synthesis of natural products together with biological assays for activity.
BUS 505	Legal and Ethical Environment of Business		Yes	Legal and regulatory issues impacting business operation. Ethical and social responsibility concepts applied to business setting.
BUS 635	Business Economics for the World Market		Yes	Application of economic principles to current business problems within context of global marketplace.
BUS 636	Economics of Ecosystems and Biodiversity		Yes	Economic theories and analytical frameworks are developed and applied to the use, protection, and management of the natural environment.
BUS 660	Ethical, Legal, and Regulatory Issues		Yes	Legal, regulatory, societal and ethical issues encountered by business professionals; analytical skills for making judgments.
BUS 662	International Business		Yes	Role of government regulations and how international firms affected; cultural aspects of business, global marketing, finance, management.

BZ568	Sustaining River Ecosystems in a Changing World		Yes	Applying the concepts and principles of freshwater ecosystem structure and function to develop a multidisciplinary and integrated understanding of the approaches and methods for restoring and sustainably managing these systems in the face of increasing human demands and rapid climate change.
CIVE 511	Coastal Engineering		Yes	Coastal processes (waves, tides, storm surge, currents, coastal morphology, deltas) and their effects on infrastructure design and eco-protection.
CIVE 512	Irrigation Systems Design		Yes	Irrigation systems principles and design procedures for operation of sprinkler, trickle, and surface irrigation systems.
CIVE 514	Hydraulic Structures/Systems		Yes	Analysis and design of hydraulic structures which make up components of water resource systems.
CIVE 516	Water Control and Measurement		Yes	Flow regulation and measurement in gravity flow irrigation systems for efficient and equitable water distribution among users.
CIVE 519	Irrigation Water Management		Yes	Apply soil, plant, water, and atmospheric engineering principles to determine crop water need to sustain agricultural production and the environment.
CIVE 520	Physical Hydrology		Yes	Hydrologic, atmospheric processes in the water cycle; linear systems, hydrologic response; geomorphologic description of hydrologic processes, response.
CIVE 525	Water Engineering: International Development		Yes	Planning and design of small-scale and low-cost drinking water, wastewater, and irrigation systems for rural communities in developing countries
CIVE 531	Groundwater Hydrology		Yes	Groundwater occurrence, distribution, movement, exploration and recharge, well hydraulics and design, interaction of ground and surface water.
CIVE 532	Wells and Pumps		Yes	Well field hydraulics, well drilling methods, well design, aquifer test methods, pumping systems, well maintenance, storage/distribution systems.
CIVE 538	Aqueous Chemistry		Yes	Principles of solution chemistry applied to aquatic systems.
CIVE 541	Environmental Unit Operations-Treatment-Design		Yes	Reactor theory, filtration, adsorption, ion exchange, gas transfer, oxidation, membranes, biological reactors, disinfection.
CIVE 542	Water Quality Modeling		Yes	Processes defining surface water quality, construction and application of computer models for lakes and streams
CIVE 544	Water Resources Planning and Management		Yes	Management and planning of natural and constructed water systems; integrated management and case studies of water use and environmental resources
CIVE 559	Special Topics in Geotechnical Engineering		Yes	Advanced topics in geotechnical engineering including expansive soils, unsaturated soil mechanics, soil-structure interaction and mining geotechnics.
CIVE 571	Pipeline Engineering and Hydraulics		Yes	Water supply, wastewater, storm water, oil and gas, and industrial applications. Emphasis on pressurized water pipelines.
CIVE 572	Analysis of Urban Water Systems		Yes	Behavior and interaction of urban water distribution and collection systems; how system state and driving variables affect system performance.
CIVE 574	Civil Engineering Project Management		Yes	Principles of civil engineering project management including proposals, contracts, scheduling, quality assurance, budgeting, and risk management.
CIVE 576	Engineering Applications of GIS and GPS		Yes	Integration of GPS and GIS in the planning and decision making process, application to case study.
CIVE 577	GIS in Civil and Environmental Engineering		Yes	GIS technology for spatial design/analysis; applications in facilities management, urban infrastructure, water resources, environmental engineering.
CIVE 578	Infrastructure and Utility Management		Yes	Infrastructure and utility planning, management, and security. Systems approach to life cycle management. Problems, analysis, decision support systems.
CIVE 612	Open Channel Flow		Yes	Steady, uniform, and non-uniform flow; backwater curves; flow through bridge piers, transitions, and culverts; spatially varied and unsteady flow.
CIVE 613	River Restoration Design		Yes	Analysis and design for assisting the recovery of hydrologic, geomorphic, and ecological processes and ecosystem services in degraded river systems.
CIVE 622	Risk Analysis of Water/Environmental Systems		Yes	Risk and uncertainty analysis applied to hydrology, hydraulics, groundwater, water resources, and environmental engineering systems.

CIVE 638	Groundwater Quality and Contaminant		Yes	Analysis of hydro chemical data. Advection with and without mixing. Retardation of reactive solutes. Design of groundwater quality investigations.
CIVE 716	Erosion and Sedimentation		Yes	Sediment properties; resistance to flow; incipient motion and bedforms; sediment transport, reservoir sedimentation.
CIVE 717	River Mechanics		Yes	Characteristics of rivers, mechanics of sediment and water discharge emphasizing alluvial systems, channel stabilization, control, response.
CIVE 721	Stochastic Water and Environmental Systems		Yes	Stochastic analysis of water and environmental systems. Simulation, forecasting, spatial analysis, modeling changes, stochastic differential equations.
CM 666	Science and Ethics		Yes	Ethical issues of research on humans and animals; biosafety; fraud and deception in science; genetic engineering.
DM 540	Promotional Strategies in Merchandising		Yes	Integrated marketing communications while fostering cultural and global awareness, social responsibility and ethical decision-making.
ECOL 505	Foundations of Ecology		Yes	Overview of the science of ecology; what questions are asked, how they are answered.
ECOL 571	Advanced Topics in Ecology		Yes	Current research topics in ecology presented and analyzed by visiting scientists.
ECOL 592	Interdisciplinary Seminar in Ecology		Yes	Concepts and principles of basic and applied ecology in an interdisciplinary context.
ECOL 600	Community Ecology		Yes	Current theories and tests of the dynamics and regulation of plant and animal communities.
ECOL 620	Applications in Landscape Ecology		Yes	Spatial patterning of landscape elements and dynamics of ecological systems; spatial heterogeneity. Influence on biotic and abiotic processes.
ECON 540	Environmental and Natural Resource Economics		Yes	Theory, methods, and policy in environmental and natural resource economics.
ECON 640	International Trade Theory		Yes	Theory of international trade including comparative advantage, factor growth, market distortions, and commercial policy.
EDUC 647	School Culture Climate, and Communications		Yes	Assist public school leaders in their facilitation role in enhancing human relations and communication within schools and communities.
EDUC 651	Multicultural and Special Populations		Yes	Special concerns for working with people of various cultural, ethnic, exceptional, and special interest groups.
EDUC 715	Critical Issues for Special Populations		Yes	Social and cultural issues related to special populations are researched and analyzed to understand policy that guides educational decisions.
ENGR 508	Introduction to Power System Markets		Yes	Deregulated electrical power systems, system security, investments in generation and transmission, ancillary services, and nodal pricing.
ENGR 530	Overview of Systems Engineering Processes		Yes	Systems engineering life-cycle process and analysis techniques. Reliability and robustness.
ENGR 532	Dynamics of Complex Engineering Systems		Yes	Higher-level behavior and issues that emerge from interaction between components in complex socio-technical systems.
ENGR 581A4	Human Systems Integration		Yes	Integration of human systems in engineering
ERHS 502	Fundamentals of Toxicology		Yes	Fundamental principles of toxicology; dose-response, organ targets, toxic agents.
ERHS 515	Non-Ionizing Radiation Safety		Yes	Evaluation and safe use of non-ionizing radiation sources. Calculation of safe distances for exposure and maximum permissible exposures.
ERHS 526	Industrial Hygiene		Yes	Theory and application of industrial hygiene principles to management of the occupational environment.
ERHS 528	Occupational Safety		Yes	Introduction to occupational safety hazard recognition and control.
ERHS 546	Environmental Exposure Assessment		Yes	Approaches and techniques for quantitative characterization of environmental exposure to harmful agents via inhalation, ingestion, and dermal pathways.

ERHS 549	Environmental Health Risk Assessment		Yes	Environmental contamination and health effects of chemicals using risk assessment, management and communication approaches.
ERHS 550	Principles of Radiation Biology		Yes	Dose-response relationships; physical, chemical, and biological modification of radiation damage; radiation oncology; radiation genetics and oncogenesis.
ERHS 556	Monte Carlo Methods in Health Physics		Yes	Monte Carlo methods for the assessment of complex systems or macroscopic quantities on basis of statistical nature of microscopic components.
ERHS 561	Radiation Public Health		Yes	Aspects of radiation public health for students in health physics with emphasis on contemporary issues in radiation protection.
ERHS 565	Chemical and Biological Warfare Agents		Yes	Current understanding of chemical and biological agents used in asymmetric warfare.
ERHS 566	Clinical and Forensic Toxicology		Yes	Toxic effects of commonly encountered abused substances and laboratory methods to identify and measure these.
ERHS 568	Pharmaceutical and Regulatory Toxicology		Yes	Toxicology as applied in public (regulatory) and private (pharmaceutical, industrial) sectors.
ERHS 570	Radioecology		Yes	Environmental transport and exposure assessment of radioactive and other contaminants; estimating risk for human health and ecological impacts.
ERHS 601	Metabolism and Disposition of Toxic Agents		Yes	Metabolism of toxic agents and effects on their fate in the body. Covalent and non- covalent interactions with cellular targets.
ERHS 602	Toxicological Mechanisms		Yes	Role of cellular information systems in toxic mechanisms: DNA expression, signal transduction and control of cellular processes.
ERHS 603	Toxicological Pathology		Yes	Toxicological study of pharmacologic, chemical and environmental agents and resulting morphologic and cellular changes.
ERHS 637	Environment, Safety, and Health Management		Yes	Environment, safety, and health management systems for occupational health practitioners; major environmental and DOT regulatory standards and laws.
ERHS 671	Experimental Radioecology		Yes	Experimental techniques used in radioecological and environmental radioactivity studies.
ERHS 679	Occupational Environmental Health Interdisciplinary Seminar		Yes	Evaluation of occupational and environmental health issues, through multidisciplinary interactions in seminars and field visits
ERHS 733	Environmental Carcinogenesis		Yes	Molecular and cellular mechanisms by which environmental carcinogens exert effects.
ESS 524	Foundation for Carbon/Greenhouse Gas Mgmt.		Yes	Foundations for understanding greenhouse gas emissions management and accounting
ESS 655	Multivariate Analysis for Community Ecology		Yes	Techniques and conceptual understanding for analyzing multivariate ecological data characteristic of community ecology, including ordination, classification, and permanova.
ETST 520	Race and U.S. Social Movements		Yes	Intersections of race, class, gender, and sexuality which structure life chances and mobilize movements for rights, recognition, and resources.
ETST 550	Law, Policy, and Indigenous Peoples		Yes	Laws and policies impacting indigenous women, children, families, and communities in North America, New Zealand, and Australia.
F 521	Advanced Quantitative Methods in Forestry II		Yes	Analysis of forest inventory information; dynamic and stochastic models oriented to decision making and research in forestry.
F 524	Forest Fire Meteorology and Behavior		Yes	Effects of atmospheric processes on wild and prescribed fires; interrelationships of weather, fuels, and topography on forest and range fires.
F 721	Forest Policy		Yes	Policies and institutions affecting management of forest lands in U.S.
FIN 669	Financing, Evaluating Sustainable Enterprise		Yes	Theoretical and applied approaches to the funding and evaluation of enterprises.
FSHN 500	Food Systems, Nutrition, and Food Security		Yes	Global and local food systems and their potential influence on nutrition and food security.
FSHN 520	Advanced Medical Nutrition Therapy		Yes	Role of nutrition in etiology and treatment of selected disorders.

FSHN 620	Community Nutrition Planning and Evaluation		Yes	Community nutrition assessment; nutrition program planning and evaluation, nutrition policy analysis.
FSHN 640	Selected Topics in Nutritional Epidemiology		Yes	Overview of topics in nutritional epidemiology; study design, interpretation of findings, linkage of data to action.
FSHN 660	Women's Issues in Lifecycle Nutrition		Yes	Current nutritional issues related to selected stages of the lifecycle compared to normal adult nutritional needs.
FW 567	Wildlife Disease Ecology		Yes	Ecological, epidemiological, and evolutionary principles of disease in fish and wildlife populations; contemporary issues in disease ecology.
FW 662	Wildlife Population Dynamics		Yes	Wildlife population models; experimental evidence and analysis of theories of population regulation; case studies.
GEOL 551	Groundwater Modeling		Yes	Groundwater modeling from a geologic perspective. Conceptual models and computer modeling of groundwater flow and solute transport.
GEOL 652	Fluvial Geomorphology		Yes	Geomorphology of channels, slopes, and drainage systems.
GRAD 544	Ethical Conduct of Research		Yes	Principles and practice of ethical conduct of research.
HES 650	Health Promotion Programming		Yes	Development of skills in health promotion program design, implementation and evaluation.
HORT 511	Green Roof Culture		Yes	Understand the relevance of green roofs in North America, especially the process, from concept to project completion and maintenance
HORT 521	Horticulture and Human Health and Well-Being		Yes	Impact of principles and practices of horticulture on human health and well-being
HORT 522	Horticulture and Human Health Issues		Yes	Horticulture is an essential instrument of public health, but often professionals in these fields view themselves as opponents. Examine issues arising in the production of foods for human consumption that human health professionals often encounter. Overcome the barriers that divide horticulture and human health professionals.
HORT 576	Advanced Environmental Plant Stress Physiology		Yes	Advanced aspects of plant growth, development and physiology, major sources of stress in plants, global issues in environment and plant stress.
IE 679	Applications of International Development		Yes	In-depth interdisciplinary analysis of theoretical and practical issues in implementing economic and community-based international development programs.
JTC 630	Health Communication		Yes	Role of health communication in public health programs and campaigns.
LEAP 600	Arts Policy and Advocacy		Yes	Discussion of the role of artist as citizen and how we affect public policy.
MGT 612	Managing in a Global Context		Yes	Global management and HR development issues/practices. Cross-cultural issues in organization behavior, recruitment, selection, training, compensation.
MIP 533	Epidemiology of Infectious Diseases/Zoonoses		Yes	Epidemiologic features of infectious and parasitic diseases that have a major impact on community medicine.
NR 503	Remote Sensing and Image Analysis		Yes	Resource management applications for interpretation and analysis of photographic, multispectral scanner, and radar data; sensor systems.
NR 505	Concepts in GIS		Yes	Resource management applications for concepts of geographic information systems and spatial data analysis.
NR 510	Ecosystem Services: Theory and Practice		Yes	Theory and application of ecosystem services drawing upon ecological, economic, and institutional analysis.
NR 512	Spatial Statistical Modeling Natural Resources		Yes	Statistical techniques used to model natural and environmental resources; GIS, remote sensing and spatial statistics.
NR 544D	Conservation Methods: Spatial Information		Yes	NONE
NR 545B	Multi-level Views: Society and Conservation - Global		Yes	Myriad and often opposing views of societal and environmental problems across cultures and across scales.
NR 554	Ecological and Social Agent-based Modeling		Yes	Exploring the use and making of agent-based models featuring interacting individuals in ecological and social simulation, with examples and projects.

NR 562	Ecosystem Services in a Changing World		Yes	Understanding of ecosystem services and global change.
NR 563	Research Methods in Conservation--Global		Yes	Reviews the contribution of fieldwork/research in addressing conservation issues, social and ecological data collection, and analysis methods.
NR 564	Systems Thinking and Biodiversity		Yes	Social-ecological systems and the implication of social-ecological systems thinking for biological diversity conservation efforts.
NR 567	Analysis of Environmental Impact		Yes	Preparation and evaluation of environmental impact statements under NEPA.
NR 578	Ecology of Disturbed Lands		Yes	Analysis of basic and applied ecological principles involved in the restoration of drastically disturbed lands.
NRRT 505	Environmental Education History and Theory		Yes	History and theories, planning and instruction; outcomes; historical events; ecological literacy, experiential learning models.
NRRT 600	Tourism Industry Concepts and Practices		Yes	Primary conceptual issues on contemporary tourism important to comprehend the practice of tourism.
NRRT 605	Human Dimensions of Natural Resources Theory		Yes	Application of theories and conceptual approaches from social sciences to study of recreation behavior and natural resource issues.
NRRT 610	Natural Resource Management and Tourism		Yes	Connection between the management of tourism resources and the changing conditions of the natural world.
NRRT 625	Communication/Conflict Management in Tourism		Yes	Negotiation tools for effective organizational communication/conflict management in tourism.
NRRT 655	Tourism Marketing Concepts and Applications		Yes	Marketing processes as they apply to travel and tourism.
NRRT 662	Global Tourism Policy		Yes	Major global policies, trends, and challenges facing the travel and tourism industry.
NRRT 665	Survey Research and Analysis		Yes	Survey research, design, and analysis in human dimensions of natural resources.
NRRT 671	Strategic Management for Travel and Tourism		Yes	Factors, tools, and techniques for strategic management of a travel and tourism business or organization.
NRRT 679	Current Topics in Nature-Based Tourism		Yes	Current topics in nature-based travel and tourism. A) Fall. B) Spring.
OT 631	Program Assessment and Development		Yes	Assessment of program strengths and needs, followed by development of proposals to support occupational performance and participation.
PBHL 530	Environmental Public Health and Policy		Yes	Major concepts, methodologies and issues in the field of environmental public health.
PBHL 540	One Health in Public Health		Yes	One Health history and concepts for public health professionals
POLS 530	International Relations		Yes	Theory and methodology utilized in different approaches to international relations.
PSY 675	Ethics and Professional Psychology Practice		Yes	Ethical practice of psychology, duty-to-warn statutes, Colorado law, problematic ethical situations.
RS 500	Advanced Rangeland Management		Yes	Rangeland management concepts.
RS 532	Rangeland Ecosystem Sampling		Yes	Measurement, analysis techniques for rangeland vegetation. Applications to management emphasized.
RS 552	Range Animal Production and Management		Yes	Biological and ecological basis for production of meat from rangelands.
RS 565	Riparian Ecology and Management		Yes	Analysis of interactions among biotic and abiotic processes as relates to the ecology and management of riparian systems, emphasizing case studies. Field trips required.
SOC 562	Sociology of Food Systems and Agriculture		Yes	How agricultural choices generate intended and unintended consequences for human communities and the natural environment.
SOC 660	Theories of Development and Social Change		Yes	Central concepts, issues, and approaches in sociology of development.

SOCR 567	Environmental Soil Chemistry		Yes	The chemistry of terrestrial environments and the interactions of soil constituents with bacteria, nutrients, and pollutants.
SOCR 620	Modeling Ecosystem Biogeochemistry		Yes	Design and build biogeochemical process and ecosystem models with GUI-based software. Analyze and test models and interpret experimental data.
VM 648	Food Animal Production and Food Safety		Yes	Basic orientation to food animal production units, herd health concepts, and issues of food safety from preharvest through processing and distribution.
VM 707	Emerging Issues in Infectious Disease		Yes	Influence of microbial, host, and environmental changes on the emergence, control, and prevention of infectious disease of veterinary importance.
WR 510	Watershed Management in Developing Countries		Yes	Watershed management problems, approaches, and solutions in developing countries.
WR 574	Advanced Snow Hydrology		Yes	Snow processes in hydrologic cycle; physical and conceptual methods of modeling; techniques for measuring different states and change rates.
WR 616	Hillslope Hydrology and Runoff Processes		Yes	Hillslope hydrology and runoff processes in different environments; implications for management and modeling.
WR 671	Advanced Topics in Watershed Science		Yes	Explores advanced topics in watershed hydrology, biogeochemistry, and ecology
	Total Graduate Courses:	74	186	
	Overall Totals:	**182**	**427**	