



## 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 2016-2017 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 2016-2017 academic year that met the definitions and were not already included in the inventory.

Our inventory covers one academic year (2016-2017) 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 (e.g. the course contributes toward achieving principles outlined in the [Earth Charter](#)). This includes:

- 1) 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.
- 2) 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.

3) 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).

At Colorado State, our School of Global Environmental Sustainability has a curriculum committee that endorses courses across all of the eight colleges (<http://sustainability.colostate.edu/sites/sustainability.colostate.edu/files/docs/GESendorsedcoursesWEB.pdf>). These courses are both undergraduate and graduate level and are designated in the online course catalog. These courses are included in our inventory as sustainability courses as they have undergone a rigorous review process by the curriculum committee and were also reviewed by the associated Department Chairs as part of our methodology.

**Courses that includes 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 Course	Course Includes Sustainability	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 180A	The Science and Context of Sustainable Energy	Yes		Basic understanding of the sustainability of energy resources and addresses the benefits and costs of energy production methods.
GES 192	Global Environmental Sustainability Seminar	Yes		Critical interconnections of global environmental sustainability, the environment, economics, and society.
GES 330	Sustainability in Practice	Yes		Introduction to sustainability practice via experiential learning, field trips, and independent research projects or programs on campus.
GES 470	Applications of Environmental Sustainability	Yes		Integration of dimensions of global environmental sustainability environment, society, and economy through case studies and team project.
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.
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.

AN EQ 448	Livestock Manure Management and Environment	Yes		Manure management; maximizing benefits to soils and crops; minimizing air and water quality hazards; complying with regulations.
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.
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		Economic evaluation of alternative resource use patterns and land use plans from environmental perspective
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 381	Introduction to Environmental Economics	Yes		Design and measurement of economic values and environmental policy; how the theory can be used to construct solutions to real-world problems.
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.

BUS 201	Foundations of Sustainable Enterprise	Yes		Basics of sustainability in business and implications for business decision making.
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 472	Stream Biology and Ecology Laboratory	Yes		Field sampling and laboratory analysis of habitats, biota, and ecological relationships in running waters
CBE 439	Environmental Engineering Chemical Concepts	Yes		Application of chemical principles to environmental engineering problems..
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.
CON 450	Travel Abroad-Sustainable Building	Yes		Major components of sustainable design and construction, energy, healthy buildings, natural resources, and other environmental issues.
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 344	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.
ECON 346	Economics of Outdoor Recreation	Yes		Benefit cost framework in public planning for outdoor recreation, pricing problems, projecting demand, and regional economic development.
ESS 211	Foundations in Ecosystem Science	Yes		Linkage between society and ecosystems services as foundation for sustainability of the coupled human-environmental system.
ESS 311	Ecosystem Ecology	Yes		Principles of ecosystems ecology, emphasis on their application to coupled natural and human systems.
ESS 400	Sustainability and Ecosystem Science	Yes		Integrates ecosystems services and sustainability strategies, application to coupled natural and human systems.
ESS 440	Practicing Sustainability	Yes		Capstone integration of ecosystem science and sustainability, focused on case studies.

ESS 486	Ecosystem Practicum	Yes		One-week field practicum to examine ecosystem science and sustainability issues in Colorado landscapes.
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 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 world's poor and minorities self-empower to challenge institutional racism and government apathy in order to secure basic environmental goods.
FSHN 496B	Group Study in Dietetics and Nutrition-Sustainable Food Issues	Yes		Current topics in nutrition and professional skills for the dietetics profession.
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.
GEOL 120	E1ploring 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 124	Geology of Natural Resources	Yes		Develops scientific understanding through introduction to the origin, use, and environmental impact of geological resources extracted from the Earth.

GR 304	Sustainable Watersheds	Yes		Effects of climate, land use, and water use on the sustainability of water quantity and quality.
GR 410	Climate Change	Yes		Implications and consequences for earth systems including the cryosphere, hydrosphere, and biosphere.
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 368	Landscape Irrigation and Water Conservation	Yes		Practical approaches and methods of irrigation, water conservation, and water management in the designed landscape.
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 179	Globalization: Exploring Our Global Village	Yes		Analysis and implications of social, cultural, economic, and political change in the context of globalization and transnational relationships.
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.
INTD 450	Travel Abroad-Sustainable Building	Yes		Major components of sustainable design and construction, energy, healthy buildings, natural resources, and other environmental issues.
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 earth's 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 355	Contemporary Environmental Issues	Yes		Fundamental concepts of energy, population, and ecology applied to range of contemporary environmental issues.
NR 365	Environmental Education	Yes		Principles of interpretation related to natural resource management and public informal education.
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.
NR 492	Seminar on Environmental Conservation	Yes		Specific topics selected each semester related to environmental conservation.
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 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		Emphasizes human-environment interaction. Areas of focus include strategies for effective management of natural resources, psychological factors in the valuation of public environmental goods.
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 321	Soil, Environment, and Society	Yes		Role of soil in our environment and its value as it relates to the social and economic well-being of society.
SOC 322	Introduction to Environmental Justice	Yes		Unequal distribution of environmental risks, benefits, policies and regulatory practices across different populations.
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.
SOCR 341	Microbiology for Sustainable Agriculture	Yes		Functional roles and management of soil organisms in organic agriculture, emphasis on ecological interactions with plants and plant pathogens.
SOCR 342	Organic Soil Fertility	Yes		Organic soil fertility management in framework of holistic organic farming system.
SOCR 343	Composting Principles and Practices	Yes		Fundamentals of compost production, use, and regulation.
SOCR 345	Diagnosis and Treatment in Organic Fields	Yes		Field experience in diagnosis of pest and nutrient problems on organic farms and development of treatment recommendations.
SOCR 400	Soils and Global Change: Science and Impacts	Yes		Foundations on the science of global change and its impact on soil processes and biota.
SOCR 424	Topics in Organic Agriculture	Yes		Examination of issues specific to organic food production systems and marketing.
SPCM 429	Environmental Discourse	Yes		Environmental communication in advocacy campaigns, media representations of science, encounters with nature, and public policy.
WR 304	Sustainable Watersheds	Yes		Effects of climate, land use, and water use on the sustainability of water quantity and quality.
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 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 330	Human Dimensions in Natural Resources		Yes	Social, political, cultural, and economic considerations in natural resource management.
NR 367	Concepts in Vertebrate Nutrition		Yes	Concepts in suborganismal and organismal vertebrate nutrition; introduction to nutritional ecology.
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 382	Social-Ecological Field Methods		Yes	Social and ecological field methods commonly used in natural resource management. Study abroad. A) Kenya. B) Belize.
NR 383	U.S. Travel-Integrated Resource Management		Yes	Evaluation of integrated ranch management decision alternatives in conjunction with professional resource managers.
NR 387	Internship I		Yes	Course prepares students for field experience in natural resources management.
NR 400	Public Relations in Natural Resources		Yes	Effective public relations and public information programs applicable to natural resource professions.

NR 401	Techniques in Public Relations		Yes	Effective communications methods related to natural resource professions; preparation of graphics, organization of programs using slide show format.
NR 420	Integrated Ecosystem Management		Yes	Natural resource management exercises; quantitative integration techniques, group dynamics.
NR 432	Foundations of National Forest Lands Program		Yes	History of U.S. public land law and evolution of National Forests. Nature, policy, trend, and needs of lands program; its integration into management.
NR 433	Special Uses Management		Yes	Authorities, application, and administration; agriculture, aviation, community, public information, industrial, water, treasure trove, and cultural uses.
NR 434	Linear Uses and FERC Licenses		Yes	Rights-of-way authorities and management; road and trail grants and easements; communication uses; Federal Energy Regulatory Commission licenses.
NR 435	Valuation and Landownership Adjustment		Yes	Authorities, coordination, valuation, title; land purchase, donation, exchange, interchange, transfers, sales, condemnation, and negotiation.
NR 436	Right-of-Way Acquisition		Yes	Need, authority, policy, planning, acquiring, negotiating, and managing rights-of-way; cost-share agreements.
NR 440	Land Use Planning		Yes	Integration of natural resource, social, institutional factors in regional resource planning.

NR 460	Wilderness Management		Yes	Management of wilderness in the U.S. National Wilderness Preservation System and equivalent international wildlands.
NR 479	Restoration Case Studies		Yes	Analysis of ecological restoration projects. Required field trips one week prior to first day of semester.
ACT 350	Accounting Information Systems		Yes	A lecture topic on sustainability accounting from the information systems viewpoint.
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.
AGRI 300	Issues in Agriculture		Yes	Scientific, technical, cultural, and social issues facing agriculture, and their interrelationships
AGRI 330	Agricultural Ethics		Yes	Basic concepts in ethics and their application to agriculture and the food system.
AGRI 374	Professional Development Seminar		Yes	Assess personal workplace skills and strengths, including teamwork and decision-making, for use in career planning.
AGRI 383	U.S. Travel-Integrated Resource Management		Yes	Evaluation of integrated ranch management decision alternatives in conjunction with professional resource managers.

AGRI 465	Pesticide Management		Yes	Reasons for and safe and correct pesticide use.
AGRI 466	Management of On-Farm Stored Grain		Yes	Basic principles of grain storage and management strategies for insects and fungi; chemical controls and safe pesticide use.
AGRI 467	Management and Control of Wood-Destroying Pests		Yes	Wood-destroying agents; wood preservative chemicals and treatment; industry regulations; labels; safety; environmental concerns
AGRI 468	Management and Control of Turfgrass Pests		Yes	Classification of turfgrass pests; pest management, control; environmental concerns, industry regulations; safety, skill in pesticide applications
AHS 201	Perspectives in Gerontology		Yes	Using multidisciplinary perspectives to explore a variety of issues in human aging; emphasis on applied gerontology.
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 466	Retail Environment Design and Planning		Yes	Application of design/merchandising principles to retail selling environments, including traditional store design/layout, direct mail, and websites.
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 220	Feeds and Feeding		Yes	Advantages and limitations of feedstuffs; nutrients and their functions; and feed practices for all physiological stages of livestock.
ANEQ 286	Livestock Practicum		Yes	Livestock breeds and terminology; classification of feedstuffs; livestock handling and care; basic animal management techniques, hands-on experience.
ANEQ 300W	Topics in Animal Sciences: Equine Manure		Yes	Practices which maximize the benefits of manure to soils and crops while minimizing hazards to air and water quality; complying with regulations.

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 475	Travel Abroad-Animal Agriculture		Yes	Onsite evaluation of international animal agriculture systems with emphasis on production, 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.
ANEQ 486	Therapeutic Riding Instructor Practicum		Yes	Mentor-guided teaching hours to students preparing for the PATH International Instructor examination.
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 310	Peoples and Cultures of Africa		Yes	Sub-Saharan lifestyles including marriage and family, traditional government, religion and magic, ecology and economy, art, music, and literature.
ANTH 312	Modern Indian Culture and Society		Yes	Anthropological contributions to the understanding of contemporary India.
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 318	Peoples and Cultures of the Southwest		Yes	Analyze development of cultures of the American Southwest; colonialism, migration, political incorporation, and socioeconomic processes.

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 350	Archaeology of North America		Yes	Native American life, tools, architecture, religion, food-getting from cultures of 12,000 years ago or earlier until European contact.
ANTH 351	Archaeology of Europe and Africa		Yes	Human culture, tools, art, religion, social life, subsistence, and paleoecology from 4 million B.C. to 1200 B.C. in the Old World.
ANTH 359	Colorado Prehistory		Yes	Human behavioral responses to environmental diversity, cultural adaptation, Pleistocene and recent climates, anthropogenic environmental change.

ANTH 411	Indians of South America		Yes	Ethnographic and cultural characteristics of South American indigenous groups and the current critical issues they face.
ANTH 412	Indians of North America		Yes	Native American peoples, their cultural variation across the continent, and cultural encounters with colonial expansion.
ANTH 413	Indigenous Peoples Today		Yes	Contemporary cultural and social issues of indigenous peoples around the globe, including North and South American Indians and Australian Aborigines.
ANTH 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.
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 422	Comparative Legal Systems		Yes	Traditional approaches to law, competing concepts of law in the global system, and experiences of minorities in state legal systems.
ANTH 423	Ethnopsychiatry and Spiritual Healing		Yes	Social determinants of mental health. Cross-cultural health and healing. Cultural contexts of U.S./Western and Indigenous/non-Western psychiatries.
ANTH 438	Approaches to Community-Based Development		Yes	Explores the structure and practice of community development globally, engaging in critical analysis of different approaches and their impact.
ANTH 439	Community Mobilization		Yes	Structural, social, and psychological barriers that inhibit cooperation and collective action.

ANTH 446	New Orleans and the Caribbean		Yes	New Orleans and the Caribbean connections through colonization, slavery, modernity, legacies of race, gender and class, the expressive arts.
ANTH 447	Gender Equity in Development		Yes	Various forms of women's power, and potentials for disempowerment within the context of international development.
ANTH 448	Development and Empowerment		Yes	Development as an economic process of wealth accumulation, as well as a socio-political process of empowerment.
ANTH 450	Hunter-Gatherer Ecology		Yes	Development of anthropological method and theory; study of contemporary and prehistoric foraging peoples.
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 453	Impacts on Ancient Environments		Yes	Major issues and case studies in the archaeology of ancient human societies and their environmental impacts
ANTH 455	Great Plains Archaeology		Yes	Prehistoric people on Great Plains from earliest hunter-gatherers to historic contact; cultural responses to changing conditions.
ANTH 460	Field Class in Archaeology		Yes	Directed fieldwork in local archaeology, site survey, and excavation; recovery, preservation, cataloging, analysis of artifactual and skeletal materials.
ANTH 472	Human Biology		Yes	Human biological responses to environmental conditions and constraints including diet, nutrition, disease, climate, culture change, and urbanization

ANTH 478	Heritage Resource Management		Yes	Cultural resource laws and policy; practices commonly employed in management and preservation of these diverse resources.
ANTH 479	International Development Theory and Practic		Yes	Contemporary issues in international community and economic development, with practical and theoretical analysis from interdisciplinary perspectives.
AREC 224	Introduction to Agribusiness Entrepreneurship		Yes	Introductory exposure to entrepreneurship for agribusinesses through presentations by industry professionals.
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 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 442	Water Resource Economics		Yes	An in-depth exploration of the role of economics in water resource planning.
AREC 460	Economics of World Agriculture		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.
AREC 480A1	Agriculture Trade		Yes	Current issues in agriculture trade, patterns of trade across developed and developing countries, trade laws, trading blocks and partners.
ART 110	Art History I		Yes	The arts of ancient cultures and civilizations.
ART 111	Art History II		Yes	Medieval through early modern art history.
ART 113	Native Art Survey		Yes	Visual arts of native peoples of North America, Africa, and Oceania.
ART 208	Native American Art and Material Culture		Yes	Traditional arts and material culture of the indigenous peoples of North America.



ART 310	History of American Art to 1945		Yes	American art from 17th century to 1945.
ART 312	History of Pre-Columbian Art		Yes	History of the art of Central and South America.
ART 314	Women in Art History		Yes	Women as artists in history of art and women's media in art.
ART 325	Concepts in Art Education		Yes	Artistic learning in children, adolescents, adults, and special populations.
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
ATS 351	Introduction to Weather and Climate Laboratory		Yes	Actual weather data, visualization of meteorological phenomena, in-depth discussion of current environmental issues.
BSMP 302	Applied and General Entomology		Yes	Biology and management of insects.
BSMP 308	Ecology and Management of Weeds		Yes	Classification, characteristics; weed biology and ecology; control by cultural, mechanical, chemical, and biological means; successional management.
BSMP 310	Understanding Pesticides		Yes	Identification, properties, use, labeling, environmental interactions, and application of major classes of pesticides.
BSMP 361	Elements of Plant Pathology		Yes	Diseases of economic plants.
BSMP 365	Integrated Tree Health Management		Yes	Insects and diseases in forest and urban ecosystems. Effects, diagnosis, prevention, and interactions.
BSMP 415	Pollinator Management in Agroecosystems		Yes	Fundamental concepts of pollinator management, sustainable crop-pollinator interactions, global issues on pollinator conservation.

BSMP 450	Molecular Plant-Microbe Interactions		Yes	Principles of plant-microbe/insect interactions, physiological and molecular aspects of plant defense, genomics approaches to study plant defense.
BSMP 451	Integrated Pest Management		Yes	Concepts of integrated pest management and the strategies and tactics employed in the application of these concepts.
BSMP 462	Parasitology and Vector Biology		Yes	Protozoa, helminths, and insects and related arthropods of medical importance; systematics, epidemiology, host damage and control.
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 201	Weed Management and Control		Yes	Basic overview of weeds and weed 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.
BUS 405	Contemporary Business Topics		Yes	Course integrates the social responsibility aspect of sustainability in business environments
BZ 332	Introductory Phycology		Yes	Evolution, diversity, ecology and global impact of algae

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 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.
CBE 493	Professional Development Seminar		Yes	Topics in engineering professional development, including ethics, role of engineers in society, and life-long learning.
CHEM 103	Chemistry in Context		Yes	Chemistry, chemical principles from more conceptual, less mathematical perspective; how chemical substances, chemical reactions affect our daily lives.
CHEM 380A2	Environmental Chemistry		Yes	Fundamental environmental chemistry concepts, and sources and fates of chemical pollutants in aquatic, soil, and atmospheric environments.
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 355	Introduction to Geotechnical Engineering		Yes	Soil behavior, stress-strain and strength properties, application to earth pressure, slope and foundation problems.
CIVE 401	Hydraulic Engineering		Yes	Basic principles of fluid mechanics applied to practical problems in hydraulic engineering.
CIVE 423	Groundwater Engineering		Yes	Development of groundwater resources; origin, movement, distribution of water below ground surface.
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 425	Soil and Water Engineering		Yes	Control of the soil-water-plant medium for optimum plant growth and environmental protection
CIVE 437	Wastewater Treatment Facility Design		Yes	Design concepts and principles for wastewater treatment systems and unit processes, principles of treatment plant operation.
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.

CIVE 455	Applications in Geotechnical Engineering		Yes	Geotechnical engineering applications of earth retaining structures, foundations, dams and embankments, geosynthetics, waste containment systems.
CO 150	College Composition		Yes	The course includes expository and argumentative writing emphasizing purpose and audience; writing and reading processes; development of ideas; coherence; effective style. The primary goals of this course are to teach learning, thinking, critical reading,
CO 300	Writing Arguments		Yes	Reading, analyzing, researching, and writing arguments.
CO 301B	Writing in the Disciplines: Sciences		Yes	Learning writing strategies for addressing general audiences in 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 120	Textiles		Yes	Fibers, fabrics, and finishes basic to selection, use, and care.
DM 272	Consumers in the Marketplace		Yes	Analysis and evaluation of consumers in the marketplace as applied to merchandising.
DM 470A-B	International Design and Merchandising		Yes	Historical, cultural, and business aspects of international design and merchandising in selected countries.
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 234	Introduction to Native American Literature		Yes	Native American writings and their significance in American culture.

E 238	20th-Century Fiction		Yes	20th-century fiction chosen for its relevance to global and cultural awareness.
E 330	Gender in World Literature		Yes	Selected world literature ranging from ancient world to present, considered in light of various complexities of gender relations.
E 331	Early Woman Writers		Yes	Selected women writers from any period before the 20th century.
E 332	Modern Woman Writers		Yes	Selected 20th-century women writers in variety of genres emphasizing relationships between gender, writing, and reading.
E 334	Gay and Lesbian Literature		Yes	Literature by gay and lesbian authors on gay and lesbian themes.
E 338	Ethnic Literature in the United States		Yes	Comparative study of literatures from a range of U.S. ethnic experiences and perspectives.
E 339	Literature of the Earth		Yes	Non-fiction, fiction, and poetry on landscape, climate, animality, ecology, place.
E 370	American Literature in Cultural Contexts		Yes	American literature in social, political, economic, aesthetic, intellectual, and multimedia contexts.
E 421	Asian American Literature		Yes	Asian American writing on immigration, exile, exclusion, detainment, neocolonialism, resistance, hybridity, and transnationalism.
E 422	African-American Literature		Yes	African-American literature as a distinct tradition of writing and protest.
E 423	Latino/a Literature		Yes	Latino/a writing on themes of settlement, expropriation, resistance, conquest, immigration, exile, hybridity and transnationalism.

E 433	Literatures of the American West		Yes	Relationships between places, environments, cultures, and literature in the American West.
E 438	Native American Literature		Yes	Literature of Native Americans emphasized as distinctive tradition in American literature and cultural expression of indigenous peoples.
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 202	Principles of Microeconomics		Yes	Introduction to decision-making by households, firms, and government, and resulting allocation of resources through markets.
ECON 204	Principles of Macroeconomics.		Yes	Determinants of national output, employment, and price level; inflation and unemployment; fiscal and monetary policy.
ECON 211	Gender in the Economy		Yes	Role gender plays in economies; the way gender affects economic outcomes for individuals and societies.
ECON 212	Racial Inequality and Discrimination		Yes	Economic inequality between Afro-Americans and Euro-Americans. Debates about causes, consequences, and remedies.
ECON 310	Poverty and the Welfare State		Yes	Description and analysis of US poverty; the "underclass"; feminization of poverty; working poor; the welfare state.
ECON 325	Health Economics		Yes	Economic analysis of health care markets, health insurance markets, and public policy regarding health care.

ECON 332	International Political Economy		Yes	Theories on relations between international politics and economics. Policy implications of different theories and case studies.
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 404	Macroeconomic Policy		Yes	Alternative macroeconomic policies, policy coordination; application to current macroeconomic problems, policies, proposals.
ECON 410	Labor Economics		Yes	Capital/labor relationship; supply, demand of labor; wage determination; role of unions; unemployment and instability; structure of modern working class.
ECON 440	International Economics I		Yes	Theory of international trade; payments, commercial policies, and economic integration.
ECON 442	International Economics II		Yes	Balance of payments, adjustment mechanisms, and international monetary systems.
ECON 460	Economic Development		Yes	Economic problems of underdeveloped nations.
ECON 463	Regional Economics-Tools/Analysis/Policy		Yes	Introduction to economic importance of location for firms, consumers, and policy makers. Basic tools, applications, and student research.



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 220	Envriomental 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 230	Envriomental Health Field Methods		Yes	Field and laboratory techniques necessary for practice of environmental health.
ERHS 320	Environmental Healthâ€™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 405	Fundamentals of Ergonomics		Yes	Basic skills, knowledge, and abilities in ergonomics; focus on musculoskeletal injury prevention.
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 130	System Theory and Information Management		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 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 250	African American History		No	Slavery, emancipation, labor, political, socioeconomic, and cultural history of African Americans since colonial times.
ETST 254	La Chicana in Society		No	Historical contributions of Chicana women and current gender issues in Chicano communities in the US.
ETST 261	Latina/o Populations in the U.S		No	Historical processes and sociocultural phenomena that define Latina/o populations in the U.S.
ETST 300	Queer Studies and Women of Color		No	Historical/contemporary analysis of the contributions of women of color to queer studies; racialized sexual/gender identities; written and cultural works.
ETST 352	Indigenous Women, Children, and Tribes		No	Historical and contemporary lives of women, children, and tribal communities.
ETST 364	Asian American Social Movements, 1945-Present		No	Historical relationships between Asian American and social movements for social, economic, and political equity in the U.S. since 1945.

ETST 404	Race Formation in the United States		No	Concept of race as a social construct in the shaping of U.S. character, values, and institutions.
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 428	Nutrition Teaching and Counseling Techniques		Yes	Objectives, principles, and organization of subject matter for nutrition education and counseling.
FSHN 444	Nutrition and Aging		Yes	Effect of aging on nutrient needs and impact of nutrition on successful aging and health in the elderly.

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.
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.
FTEC 420	Quality Assessment of Food Products		Yes	Quality control of raw ingredients to manufactured products; assessment and sensory evaluation of foods.
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	Ichthyology		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 350	Teaching Shooting Responsibility		Yes	Education and instructor certification course to develop knowledge, skills, behavior for teaching about firearms, shooting sports, and associated ethics.
FW 355	Hunter Education for Instructors		Yes	Principles of learning and teaching for instructors of state hunter education courses.
FW 356	Leopold's Ethic for Wildlife and Land		Yes	Philosophy, art, history, and science of wildlife and land management from writings of Aldo Leopold.
FW 357	Wildlife Habitat on the Great Plains		Yes	Management of cover, food, and water for wildlife and fish in the Great Plains. Emphasis on practices compatible with other uses of private land.
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 382	Travel Abroad—Wildlife Conservation		Yes	Study tour of various overseas ecosystems and natural resources conservation programs; discussions with local ecologists/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 405	Fish Physiology		Yes	Physiological ecology of fishes; functional adaptations and adjustments used to cope with environmental and physiological states.
FW 455	Principles of Conservation Biology		Yes	Review of efforts to study and conserve biological diversity, focused on fish and wildlife populations.
FW 465	Managing Human-Wildlife Conflicts		Yes	Methods for resolving conflicts caused by wildlife: integrating animal behavior, population dynamics, economics, and human dimensions into solutions.
FW 467	Wildlife Disease Ecology		Yes	Ecological, epidemiological, and evolutionary principles of disease in fish and wildlife populations; contemporary issues in disease ecology.
FW 468	Wild Bird Management		Yes	Ecology and management of game, pest, and rare bird populations and nongame bird communities.
FW 469	Conservation and Management of Large Mammals		Yes	Principles of behavior, ecology, population dynamics, and conservation related to large mammals. Required field trips.
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.
FW 477	Wildlife Habitat Use and Management		Yes	Wildlife habitat evaluation, classification, and improvement; analysis of habitat use patterns; planning and implementation of management plans.
FW 482	Travel Abroad: Conserving Desert/Marine Animals		Yes	Ecology of desert and marine animals and application to problems of animal conservation.
GEOL 401	Geology of the Rocky Mountain Region		Yes	Field course; geology of the local Rocky Mountain region.
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 436	Geology Summer Field Course		Yes	Geologic mapping, measuring sections, interpreting geologic history in Colorado. Required comprehensive reports, geologic maps, and cross sections.
GEOL 446	Environmental Geology		Yes	Geology applied to environmental problems.
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 345	Geography of Hazards		Yes	Causes, effects, distributional patterns, and human adjustments to environmental hazards.
GR 348	Biogeography		Yes	Species distribution of plants and animals in relation to earth history and environments, evolution, and ecology.
GR 415	The Geography of Commodities		Yes	Social relations, international trade, and environmental impacts surrounding the production, transportation, exchange and consumption of commodities.
HES 345	Population Health and Disease Prevention		Yes	Causes of disease throughout the lifespan and interventions designed to prevent disease.
HES 356	Wellness Programming		Yes	Assessment of wellness concerns and organizational problems, selection and implementation of program design.
HES 410	Bioethics: Concepts and Controversies		Yes	Origins of bioethics and analysis of cases/controversies in contemporary bioethics.
HES 434	Physical Activity Throughout the Lifespan		Yes	Impact of physical activity on biology and physiology of human development and aging processes.
HES 456	Advanced Wellness Programming		Yes	Investigation of established wellness programs with special emphasis on design, implementation, and evaluation of programming models.
HES 476	Exercise and Chronic Disease		Yes	Interaction of physical activity with pathophysiology and treatment of chronic diseases and conditions.



HIST 100	Western Civilization		Yes	Historical development of Western civilization from antiquity to the early modern era (c. 1600 C.E.)
HIST 101	Western Civilization, Modern		Yes	Historical development of Western civilization from c. 1600 C.E. to the contemporary era.
HIST 170	World History, Ancient-1500		Yes	Historical developments and interactions of world societies from the ancient to modern periods.
HIST 255	Native American History		Yes	History of Native American peoples in the United States to the present, including origin stories.
HIST 312	Women in Medieval Europe		Yes	Women in the European Middle Ages; political, social, economic, religious, and cultural developments.
HIST 321	Industrial Society in Europe, 1600-1871		Yes	Causes and consequences of European industrialization and its impact on European Societies between 1600 and 1871.
HIST 322	Industrial Society in Europe, 1871-1989		Yes	Causes and consequences of industrialization and its impact on European societies between 1871 and 1989.
HIST 340	Colonial North America, 1492-1800		Yes	New World encounters between Native Americans, Europeans, and Africans, and the colonial societies they built.
HIST 352	American West Since 1900		Yes	Social, political, economic, environmental developments and intercultural relationships in trans-Mississippi West since 1900.
HIST 363	Colorado History		Yes	History of Colorado from pre-history to present.

HIST 463	Science and Technology in Modern History		Yes	Impact of science and technology on industry, agriculture, medicine, education, etc. Issues in science and technology policy.
HIST 471	History of Antarctica, 1800-Present		Yes	History of Antarctica from discovery in the early nineteenth century to the present.
HIST 476	History of America's National Parks		Yes	The national park system and its development from concept to design to implementation.
HIST 478	Heritage Resource Management		Yes	Cultural resource laws and policy; practices commonly employed in the management and preservation of these diverse resources.
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 232	Principles of Landscape Design		Yes	Basic concepts in the art and process of landscape design.
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 345	Diagnosis and Treatment in Organic Fields		Yes	Field experience in diagnosis of pest and nutrient problems on organic farms and development of treatment recommendations.
HORT 367	Landscape Irrigation		Yes	Practical design of sprinkler and trickle irrigation systems for commercial and residential landscapes.

HORT 370	Landscape Irrigation		Yes	Necessary skills to design and manage irrigation systems used in the landscape industry.
HORT 377	Horticultural Methods for Therapy Programs		Yes	Horticultural methods for health care and human service settings, including indoor and outdoor growing techniques, management and plant selection.
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 424	Topics in Organic Agriculture		Yes	Examination of issues specific to organic food production systems and marketing.
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 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.

INTD 129	Introduction to Interior Design		Yes	Interior design discipline's professional values with emphasis on elements and principles of design.
INTD 210	Interior Design Anatomy		Yes	Applying basic concepts of human behavior, anthropometrics, and space planning to residential interiors.
INTD 330	Lighting Design		Yes	Application of lighting design in interior environments.
INTD 340	Interior Materials and Finishes		Yes	Analysis of materials and resources for interiors.
INTD 350	Codes-Health and Safety		Yes	Health and safety issues in interior design, including codes, regulations, and universal design.
INTD 356	Professional Communications-Interior Design		Yes	Mastery of written communication skills required in the field of interior design.
INTD 400	Interior Design Research Proposal		Yes	Research, development, and presentation of a programming proposal for a large scale interior design project with service learning component.
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 150	Diverse Students in Higher Education		Yes	Issues surrounding educational opportunity and social mobility through direct mentoring with high school students.
IU 170	A Call to Lead I: Theories and Skills		Yes	Fundamentals of leadership theories and skills.
IU 171	A Call to Lead II: Social Change Model		Yes	Social change model of leadership development.
IU 270	Leadership Styles I: Personal Application		Yes	Leadership styles and contexts for personal application.

IU 271	Leadership Styles II: Prominent Leaders		Yes	Leadership styles and contexts of prominent leaders for personal application.
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 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 360	Basic Landscape Design and Construction		Yes	Site programming analysis, design, and construction, including skill development in specifying earthwork, drainage, and vegetative composition.
LAND 364	Design and Nature		Yes	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, psychrometrics, loads, solar radiation, heating and cooling system design, transport, solar system design, economics.
MGT 325	Leadership Communication		Yes	Interpersonal communication for leaders and managers in organizational settings.

MGT 430	Leadership and Social Responsibility		Yes	Social responsiveness of managers as they face expectations in the firm's internal and external environment.
MGT 475	International Business Management		Yes	Multinational corporations: their scope, activities, managerial problems and decisions.
MGT 476	Negotiation and Conflict Management		Yes	Principles and practices of negotiation and conflict management including bargaining as a social and managerial activity.
MIP 432	Microbial Ecology		Yes	Principles of microorganism interaction with their living and non-living environments: implication for the environment, plants and animals.
MKT 365	International Marketing		Yes	Analysis of international markets and development of strategic and tactical options for marketing across national boundaries.
NRRT 231	Principles-Parks/Protected Area Management		Yes	Tools and strategies used by managers in parks and protected areas.
NRRT 270	Principles of Natural Resource Tourism		Yes	Tourism and private commercial outdoor recreation industry in America.
NRRT 320	International Issues-Recreation and Tourism		Yes	History, development, and preservation of international parks, preserves, tourist and historical sites.
NRRT 321	Travel Abroad-Marine Ecotourism-Bahamas		Yes	Environmental and socio-cultural aspects of marine ecotourism in the Bahamas.
NRRT 330	Social Aspects of Natural Resource Management		Yes	Conceptual frameworks of human dimension research and its application to resource management decisions.

NRRT 340	Principles in Conservation Planning and Mgmt		Yes	Social, economic, legal, and ecological concepts that shape planning and management frameworks within conservation.
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	Planning for regional tourism resources and programs.
NRRT 470	Tourism Impacts		Yes	Social, cultural, physical, and economic impacts of tourism; techniques for assessing impacts on environment.
NRRT 473	Ski Area Management		Yes	Ski area management; history and trends, ski area operations, human resource management, environmental issues, liability, resort planning and design.
OT 355	Handicapped Individual in Society		Yes	Description and exploration of disabling conditions; review of support systems including legal and financial implications.
PH 121	General Physics I		Yes	Consistent treatment of sustainability-related topics throughout the semester including energy efficiency, climate change, and alternative energy sources.



PH122	General Physics II		Yes	Consistent treatment of sustainability-related topics throughout the semester including energy efficiency, climate change, and alternative energy sources.
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 130	Bioethics and Society		Yes	Major issues in bioethics.
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.
PHIL 325	Philosophy of Natural Science..		Yes	Structure of theories; basic concepts and assumptions; methods of explanation and confirmation; emphasis varies between physical and life sciences.
PHIL 330	Agricultural Ethics		Yes	Basic concepts in ethics and their application to agriculture and the food system.
POLS 232	International Relations		Yes	Basic concepts and approaches to international relations.
POLS 364	U.S. 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 442	Environmental Politics in Developing World		Yes	Examines environmental politics in developing countries and evaluates climate change, natural resource governance and environmental justice.
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 300	Rangeland Conservation and Stewardship		Yes	Conservation and management of rangeland-ecosystem values using sustainable practices.
RS 351	Wildland Ecosystems in a Changing World		Yes	Understanding and conserving non-forested wildland ecosystems, processes, and services under changing environmental conditions.
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 471	Rangeland Planning and Grazing Management		Yes	Definition of grazing management, grazing systems. Synthesis of animal, plant responses to grazing management. Structure, function of rangeland planning.
RS 472	Rangeland Ecosystem Planning		Yes	Range allotment, ranch and restoration planning.
RS 478	Ecological Restoration		Yes	Analysis of environmental factors influencing restoration of disturbed lands and practices for successful restoration of disturbed ecosystems.
SOC 192	Civic Culture and Social Responsibility		Yes	Erosion of civility in society with particular emphasis on civic culture on the university campus.
SOC 323	Sociology of Environmental Governance		Yes	Roles of government and civil society in creating environmental problems and in developing effective responses to those problems.
SOC 330	Social Stratification		Yes	Theories of social inequality and mobility and their ramifications in American society.
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 344	Crop Development Techniques		Yes	Conventional and transgenic approaches to crop variety development.
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 475	Global Challenges in Plant and Soil Science		Yes	Evaluation of case studies to define problems and develop solutions to address global challenges in plant and soil science.
SOWK 110	Contemporary Social Welfare		Yes	Principles, values and institutions of U.S. social welfare in context of human need within family, groups, and society.
SOWK 330	Human Diversity Practice Issues		Yes	Legal principles, procedures, and issues relevant to social work including policy research and courtroom testimony.
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 406	Seasonal Snow Environments		Yes	Evaluation of the physical environment; characteristics of snow; methods of studying snow; snow safety.
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.
WR 486	Watershed Field Practicum		Yes	Field visits to watershed management projects and sites of significant field studies.

## Graduate Courses

Course #	Course Name	Sustainability Course	Course Includes Sustainability	Sustainability Content
AGRI 510	Sustainable Agriculture	Yes		An interdisciplinary study comparing conventional and alternative land management practices, using an agroecosystem analysis approach.
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.
AREC 741	Advanced Environmental Economics	Yes		Advanced theory, methods, and literature in environmental economics.
BZ 572	Phytoremediation	Yes		Course focuses on methods of environmental cleanup utilizing 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		Principles of green chemistry including renewable feedstocks, sustainable synthetic polymers, water contamination, recycling of chemicals, and impacts on greenhouse gases and global warming.
CHEM 581A1	Science, Policy and Management of Environmental Issues	Yes		The science, past and current policies, and management of four current environmental issues.
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 625	Quantitative Eco-Hydrology	Yes		Quantitative examination of the hydrologic and ecologic mechanisms underlying climate-soil-vegetation and soil moisture dynamics.
CON 576	Sustainable Technology in Built Environments	Yes		Major components of creating environmentally sustainable built environments.
CON 577	Leadership of Sustainable Community Projects	Yes		Learn and apply principles of sustainable construction management through leading and building service-learning projects.
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		Public natural resources policy, effect on resource use in private sector, optimal pricing of minerals, timber and fisheries, public project analysis.
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 597	Group Study in Systems Engineering	Yes		Capstone study experience in systems engineering to include sustainability topics.
ENGR 601	Bioenergy Technology	Yes		Science and engineering aspects of bioenergy production, including plant biology, fermentation, and biofuel properties. Required field trips.
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 543	Current Topics in Climate Change	Yes		Climate fundamentals and current topics in climate change.

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 575	Models for Ecological Data	Yes		Gaining insight about the operation of ecological processes using models and data.
ESS 625	Ecology of Forest Production	Yes		Develops student expertise in understanding carbon and nutrient flows in forests.
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.
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.
HIST 539	Reading Seminar - World Environmental History.	Yes		Major works in the field of world environmental history and the major historiographical debates.
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		With an over-riding sustainability goal and a focus on global challenges, this course examines important marketing activities and provides students the opportunity to gain experience in marketing related decision making.

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 548	Conservation Planning and Management	Yes		Fundamental theories and management practices of protected areas in the context of southern Mexico.
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.â€”historical, geographical, environmentalâ€”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.
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.
PSY 692A	Energy Efficiency and Behavioral Sciences	Yes		Behavior impacts both energy efficiency and energy conservation.
SOC 564	Environmental Justice	Yes		Unequal distribution of environmental risks, benefits, policies and regulatory practices across different populations.

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.
STAA 576	Methods in Environmental Statistics	Yes		Statistical methodologies used in environmental/ecological studies. Topics in spatial statistics, abundance estimation for biological populations.
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.
AGRI 521	Emerging Issues and Challenges for Global Agr		Yes	Interdisciplinary course containing tools and knowledge to discuss the emerging challenges of the global agriculture, water, and food system.
AGRI 545	Plant Tissue Culture		Yes	Theory, technology, and techniques of cell, organ, tissue, and protoplast culture of plants.
AGRI 546	Principles of Cooperative Extension		Yes	Traditional and contemporary delivery systems of Cooperative Extension emphasizing structures of nonformal education.
AGRI 547	Delivery of Cooperative Extension Programs		Yes	Methods, techniques, and procedures in planning, implementation, and delivery of Cooperative Extension programs.
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 601	Bioenergy Technology		Yes	Science and engineering aspects of bioenergy production, including plant biology, fermentation, and biofuel properties.

AGRI 630	Integrated Decision Making/Management Skills		Yes	Motivation for management, decision making, introduction to systems, information management, introduction to statistics.
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 634	Animal Production Systems		Yes	Developing animal management systems for a variety of animal species in a forage-based environment.
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 500	Apparel Supply Chains/Social Responsibility		Yes	Challenges for social responsibility in the context of the structure, relationships, and long-standing practice of the apparel industry.

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.
AN EQ 500	Recent Developments		Yes	Recent developments in animal science, avian science, and food technology.
AN EQ 520	Applied Comparative Nutrition		Yes	Comparative digestion strategies and mechanisms of nutrient utilization for terrestrial vertebrates: livestock, pets, wildlife, and zoo animal models.
AN EQ 567	HACCP Meat Safety		Yes	Control of health problems in meat products through hazard analysis critical control point (HACCP) and total quality management (TQM) practices.
AN EQ 660	Topics in Meat Safety		Yes	Topics of current concern in meat safety.
AN EQ 720	Nutritional Energetics		Yes	Dietary energy use to meet animal requirements for maintenance, growth, pregnancy, and lactation; environmental, nutritional, and physiological effects.
ANTH 513	Capitalism and Global Ethnic Conflicts		Yes	Causes of global ethnic conflicts with emphasis on resource competition, capitalist development schemes, and role of the state.
ANTH 515	Culture and Environment		Yes	Societies'™ variable relationships to their environments; indigenous peoples'™ interactions with nature in context of modernity
ANTH 530	Human-Environment Interactions		Yes	Paradigms and concepts in ecological anthropology with an emphasis on adaptation and resilience.
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 535	Globalization and Culture Change		Yes	Evolving paradigms and patterns of globalization and international development; cultural responses -- resistance, dependency, fragmented identities.

ANTH 539	Anthropology of Modernity		Yes	Critical examination of the institutions, values, and processes which constitute the modern world. Impact of modern forces on "traditional" peoples.
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 571	Anthropology and Global Health		Yes	Global health concerns and problems including poverty, urbanization, malnutrition, diet, war and refugees, climate, and environment.
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 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 505	Agricultural Production Economics		Yes	Empirical applications of production economic theory for use of inputs and allocation of resources in agricultural, natural resource sectors.
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 542	Applied Advanced Water Resource Economics		Yes	Theory and application of economics in water resource planning.
AREC 547	Public Lands Planning and Management		Yes	Principles and techniques used by federal land management agencies including Forest Service, Park Service, Fish and Wildlife Service, and BLM.



AREC 563	Regional Economics-Theory, Methods, and Issues		Yes	Tools and methods of regional economics, including supply, demand, and externality analysis. Applications to current urban and regional policy issues.
AREC 566	Contemporary Issues of Developing Countries		Yes	Social, economic, and technological factors in developing countries.
AREC 572	Social Benefit Cost Analysis		Yes	Theory, application of concepts relating to social benefit cost analysis of public projects, policies intended to promote social welfare, economic growth.
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 660	Economics of Agricultural Development		Yes	Economic literature-based exploration of human welfare measures and implications of approaches to agriculture and resource-based economic development.
AREC 678	Agricultural and Resource Policy		Yes	Evaluate and analyze economic theory, applications and public incentives related to government policies for agriculture and natural resources.
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.
AREC 740	Advanced Natural Resource Economics		Yes	Advanced theory, methods, and literature in natural resource economics, including dynamic programming and optimal control.

AT 550	Accounting Information Technologies		Yes	ACT550 includes sustainability accounting metrics and resources/tools in its content.
ATS 555	Air Pollution		Yes	Nature, ambient concentrations, sources, sinks, and physiological activities of pollutants; meteorology; legislation; social and economic factors.
ATS 560	Air Pollution Measurement		Yes	Examination and application of techniques for air pollution measurement. Includes sampling and analysis of gases, aerosols, and precipitation.
ATS 601	Atmospheric Dynamics I		Yes	Momentum, continuity equations; circulation, vorticity, thermodynamics; boundary layer; synoptic scale motions in midlatitudes.
ATS 602	Atmospheric Dynamics II		Yes	Sound waves, gravity waves, Rossby waves; numerical weather prediction; baroclinic instability; general circulation; tropical dynamics.
ATS 604	Atmospheric Modeling		Yes	Design of numerical models of the atmosphere; applications to current problems. Emphasis on practical understanding of relevant numerical methods.
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 623	Atmospheric Boundary Layer		Yes	Equations for shallow atmospheric motions; thermal instability of a fluid layer; atmospheric turbulence; flow stability; 1-D mixed layer models.
ATS 631	Introduction to Atmospheric Aerosols		Yes	Physical, chemical and microphysical characteristics of atmospheric particulate matter; measurement principles and techniques.
ATS 640	Synoptic Meteorology		Yes	Synoptic-scale weather systems; moist and dry atmospheric variables; static stability; vertical motion; fronts; cyclones and anticyclones.
ATS 641	Mesoscale Meteorology		Yes	Mesoscale weather systems; mesoanalysis techniques; upper- and low-level jets; instabilities; dynamics of convective storms; organized convection.
ATS 711	Microclimate		Yes	Momentum, heat, water, and trace gas fluxes near the earth's surface, including fluxes between the atmosphere and the land/ocean/ice surfaces.
ATS 715	Atmospheric Oxidation Processes		Yes	Atmospheric hydrocarbon and nitrogen oxide reactions; aqueous phase scavenging and reactions; chemical pathways in the atmosphere.
ATS 716	Air Quality Characterization		Yes	Planning, executing, and reporting on a measurement campaign to characterize local air quality.
ATS 742	Tropical Meteorology		Yes	Overview of the tropical atmosphere, monsoons, intraseasonal variability, hurricanes, theory of tropical convection and the large-scale circulation.
ATS 743	Interactions of the Ocean and Atmosphere		Yes	Ocean-atmosphere interactions in observations, theory, and models. Time mean atmosphere-ocean circulations through climate variability and change.
ATS 750	Climate Dynamics: Atmospheric Variability		Yes	Analysis and interpretation of large-scale patterns of climate variability and observed climate change

ATS 753	Global Hydrologic Cycle		Yes	Hydrologic cycle, moisture transport and air-ground exchange; water budgets of meteorological phenomena; climatology of atmospheric water.
ATS 760	Global Carbon Cycle		Yes	Exchanges of CO <sub>2</sub> between the atmosphere, the land surface, and oceans. Biogeochemical processes. Micrometeorological and inverse flux estimation.
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 502A-G	Topics in Plant Pathology		Yes	Course integrates health and environmental aspects of sustainability related to plants
BSMP 508	Environmental Fate of Pesticides		Yes	Processes that affect fate of pesticides and their metabolites in the environment with emphasis on soil and water.
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 510	Insect-Plant Disease Relationships		Yes	Relationships between insects and various plant pathogens as they affect survival and transmissions of pathogens.

BSMP 521	Forest Health Issues		Yes	Current topics related to forest and shade tree health from ecosystems to tree defense physiology.
BSMP 526	Evolutionary Ecology		Yes	Adaptation to abiotic and biotic environments; how current ecological processes interact with evolutionary history.
BSMP 528	Invasive Plants/Weeds: Ecosystems to Molecules		Yes	Contributions of disciplines of weed science and invasion ecology to understanding the biology, ecology and management of "problem plants."
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 556	Biological Control of Plant and Insects		Yes	Management of insect pests of plants and weeds using biological control agents such as insects, bacteria, viruses, and fungi.
BSMP 570	Chemical Ecology		Yes	Chemical interactions among animals, plants, fungi, and microorganisms.
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.
BSMP 592	Fundamentals of Bioagricultral Sciences and Pest Management		Yes	Major questions and theory pertinent to understanding current and relevant science topics.
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 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.
BZ 561	Landscape Ecology		Yes	Concepts, methods, and models for examining spatial patterns and processes of natural and managed landscapes and their effects on ecological dynamics.
CIVE 506	Wind Effects on Structures		Yes	Analysis of wind effects on buildings and structures; deterministic and probabilistic methods; aerodynamic loading and response; codes and standards.
CIVE 510	Applied Hydraulic System Design		Yes	Operational management systems, data collection, real-time control, management modeling, rehabilitation and retrofit, maintenance.
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 518	Sprinkler and Trickle Irrigation Systems		Yes	Basic principles, design, and evaluation of pressurized irrigation systems.
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 521	Hydrometry		Yes	Principles, methods, instruments, and equipment for measuring water quantity and water quality variables in nature.
CIVE 522	Engineering Hydrology		Yes	Hydrologic design under uncertainty; conventional and remote sensing; design flows and storms; river routing; reservoir design; watershed models.
CIVE 524	Modeling Watershed Hydrology		Yes	Development and application of watershed models: structure, calibration, evaluation, sensitivity analysis, simulation.
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 537	Residuals Management		Yes	Planning and design for processing and disposal of residuals including solid wastes, sludges, and hazardous wastes.
CIVE 538	Aqueous Chemistry		Yes	Principles of solution chemistry applied to aquatic systems.
CIVE 539	Water and Wastewater Analysis		Yes	Chemical and biological methods of assessing water quality; significance of chemicals in aquatic systems.
CIVE 540	Advanced Biological Wastewater		Yes	Fundamentals of environmental biotechnology: environmental microbiology, microbial kinetics, basic reactor design, wastewater treatment.
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 546	Water Resource Systems Analysis		Yes	Applications of systems analysis and optimization techniques in water resources planning and management.
CIVE 547	Statistics for Environmental Monitoring		Yes	Applications of statistics in environmental pollution studies involving air, water, or soil monitoring
CIVE 549	Drainage and Wetlands Engineering		Yes	Drainage and wetlands design for agricultural and natural resource applications. Water table modification for nonpoint sources pollution control.
CIVE 553	Slope Stability and Retaining Structures		Yes	Slope stability theory and application, retaining walls, sheet-pile walls, braced excavations, geosynthetic uses.
CIVE 556	Seepage and Earth Dams		Yes	Hydraulic conductivity measurements; seepage analysis and control; earth dam and embankment design; computer applications.
CIVE 558	Containment Systems for Waste Disposal		Yes	Basic principles governing the design of containment systems used in waste disposal applications.
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, stormwater, 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 573	Urban Stormwater Management		Yes	Effects of urbanization on watershed hydrology and receiving waters; control practices to mitigate effects using mathematical models.
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 579	Risk and Security of the Built Environment		Yes	Infrastructure security and safety to prepare the built environment against natural and human-caused threats
CIVE 592A-L	Seminar		Yes	Seminar integrates topics in wind and environmental engineering including environmental aspects of sustainability
CIVE 595	Independent Study		Yes	Independent study in sustainability topics including wind engineering, water resources, environmental engineering, bioresource
CIVE 610	Special Topics in Hydraulics		Yes	Advanced topics in hydraulics including environmental hydraulics

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	Stream Rehabilitation Design		Yes	Analysis and design of streams and channels in harmony with the environment
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 624	Control of Floods and Droughts		Yes	Flood and drought characteristics, impacts; structural, nonstructural flood control measures; drought prediction, drought control, drought response.
CIVE 638	Groundwater Quality and Contaminant		Yes	Analysis of hydrochemical data. Advection with and without mixing. Retardation of reactive solutes. Design of groundwater quality investigations.
CIVE 645	Computer-Aided Water Management and Control		Yes	Real-time management and control of water resource systems; applications of computer control concepts to improve system performance.
CIVE 654	Experimental Soil Mechanics		Yes	Experimental design; data acquisition; soil fabric; isotropic/K0 condensation; swelling; stiffness; shear wave velocity; triaxial; hollow cylinder; partial saturation.
CIVE 655	Advanced Soil Mechanics		Yes	Advanced topics in shear strength and consolidation of soils; stress paths; anisotropy; submergence; partial and radial drainage; numerical methods.
CIVE 658	Remediation Systems-Subsurface Contamination		Yes	Applications in geoenvironmental engineering practice involving design of in situ containment and remediation systems.

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.
CIVE 722	Large Scale Hydrology		Yes	Global and regional scale hydrologic processes; land/atmosphere interaction; scaling in hydrology, geomorphoclimatic structure of hydrologic response.
CIVE 724	River Basin Morphology		Yes	Analysis of river basin properties including their connections to statistical theories and erosion processes and their hydrologic implications.
CIVE 742	Advanced Topics in Environmental Engineering		Yes	Selected topics from current environmental engineering research including molecular methods, water/wastewater treatment, hazardous waste remediation.
CIVE 751	Soil Dynamics		Yes	Soil behavior under dynamic loading; stress wave propagation; foundation response to vibratory and transient loading; elements of earthquake effects.
CM 601	Responsible Conduct of Research in CMB		Yes	Key aspects of responsible conduct of research and ethical considerations in cell and molecular biology.
CM 666	Science and Ethics		Yes	Ethical issues of research on humans and animals; biosafety; fraud and deception in science; genetic engineering.
CON 562	Issues and Trends in Construction Management		Yes	Current issues and trends related to management of technology in fields associated with manufacturing and construction industries.

DM 518	Consumer Issues-Global Perspectives		Yes	Understanding and analysis of consumer well-being and issues from global perspective.
DM 540	Promotional Strategies in Merchandising		Yes	Integrated marketing communications while fostering cultural and global awareness, social responsibility and ethical decision-making.
E 635	Critical Studies in Literature and Culture		Yes	Advanced interpretation in contemporary literary and critical studies.
E 679	Community Service Learning		Yes	Opportunities to learn, practice, and develop skills by serving the community.
ECE 508	Introduction to Power System Markets		Yes	Examining modern grid with both traditional and renewable sources of energy that must be integrated; deregulated electrical power systems, system security, investments in generation and transmission, ancillary services, and nodal pricing.
ECE 565	Electrical Power Engineering		Yes	Analysis of power systems in terms of current, voltage, and active/reactive power; introduction of computer-aided tools for power systems.
ECE 566	Energy Conversion for Electrical Power Systems		Yes	Energy conversion; fuel cell, battery storage, solar-photovoltaic, wind energy and traditional rotating-magnetic-field based machines.
ECE 568	Electrical Energy Generation Systems		Yes	Energy systems: renewable and traditional. Physics and operation of energy devices; solar-photovoltaic, wind energy, gas, coal, and nuclear plants.
ECE 621	Energy Storage for Electrical Power Systems.		Yes	Physics and operation of electrical, mechanical, thermal and novel energy storage systems/devices.
ECE 622	Energy Networks and Power Distribution Grids		Yes	Energy networks: generation, storage, consumers. Systems approach to analysis of distribution networks and transition to intelligent grid systems.
ECE 623	Electric Power Quality		Yes	Interconnecting power electronic devices and renewable energy sources to power systems

ECE 670B-D	Topics in Architecture/ Systems		Yes	B) Performance evaluation and modeling. C) Distributed systems. D) Architecture of advanced systems.
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 563	Regional Economics-Theory, Methods, and Issues		Yes	Tools and methods of regional economics, including supply, demand, and externality analysis. Applications to current urban and regional policy issues.
ECON 640	International Trade Theory		Yes	Theory of international trade including comparative advantage, factor growth, market distortions, and commercial policy.
ECON 663	Urban and Regional Modeling		Yes	Methodological approaches in regional economics: general equilibrium, input-output, computable general equilibrium models; social accounting matrices.
ECON 771	Political Economy of Race and Gender		Yes	Economic approaches to inequality based on race/ethnicity, gender, and class.
EDUC 572	Special Needs-Foundations and Practices		Yes	Theory related to foundations and professional practices relevant for teaching students with mild/moderate special needs.
EDUC 635	Educators, Systems and Change		Yes	Process of change in education, focusing on teacher's role as leader and facilitator.
EDUC 645	Leadership and Ethics in Public Education		Yes	Focus on leadership functions for public schools and ethical dimensions of leadership.

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.
EDUC 716	Capstone: Educational Equity and Reform		Yes	Applies tenets of educational leadership research and theory into a context of equity, global citizenship and environmental responsibility.
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 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 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 565	Electrical Power Engineering		Yes	Analysis of power systems in terms of current, voltage, and active/reactive power; introduction of computer-aided tools for power systems including integrating renewables.
ENGR 568	Electrical Energy Generation Systems		Yes	Energy systems: renewable and traditional. Physics and operation of energy devices; solar-photovoltaic, wind energy, gas, coal, and nuclear plants.

ENGR 621	Energy Storage for Electrical Power Systems		Yes	Physics and operations of electrical, mechanical, thermal, and novel energy storage systems/devices.
ENGR 622	Energy Networks and Power Distribution Grids		Yes	Energy networks: generation, storage, consumers. Systems approach to analysis of distribution networks and transition to intelligent grid systems.
ENGR 623	Electric Power Quality		Yes	Interconnecting power electronic devices and renewable energy sources to power systems.
ENVE 580A1	Water Rights Analysis		Yes	Technical aspects of water rights systems, analysis processes and water rights transfers and exchanges, and environmental aspects.
ERHS 502	Fundamentals of Toxicology		Yes	Fundamental principles of toxicology; dose-response, organ targets, toxic agents.
ERHS 503	Toxicology Principles		Yes	Principles of toxicology for applications in industrial hygiene and environmental public health.
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 520	Environmental and Occupational Health Issues		Yes	Issues in environmental and occupational health sciences in the context of public health and regulatory concerns.
ERHS 526	Industrial Hygiene		Yes	Theory and application of industrial hygiene principles to management of the occupational environment.
ERHS 527	Industrial Hygiene Laboratory		Yes	Industrial hygiene field monitoring equipment and techniques.
ERHS 528	Occupational Safety		Yes	Introduction to occupational safety hazard recognition and control.
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 555	Quantitative Methods for Radiation Safety		Yes	Analytical methods used in health physics, radioecology and radiochemistry. Quantification of uncertainty in radioactive samples and dosimetry.
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 563	Environmental Contaminant Modeling I		Yes	Mathematical modeling of radionuclide and chemical transport in aquatic and terrestrial ecosystems.
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 658	Environmental/Occupational Epidemiology		Yes	Epidemiologic analyses of effects of exposure to environmental and occupational health hazards
ERHS 726	Aerosols and Environmental Health		Yes	Properties and behavior of environmental and occupational aerosols emphasizing how airborne particles affect health of humans and the environment.
ERHS 733	Environmental Carcinogenesis		Yes	Molecular and cellular mechanisms by which environmental carcinogens exert effects.
ERHS 765	Environmental Contaminant Modeling II		Yes	Development and analysis of advanced computer models for radionuclide and chemical transport in aquatic and terrestrial ecosystems.
ESS 660	Biogeochemical Cycling in Ecosystems		Yes	Biotic and abiotic processes responsible for distribution and fluxes of elements at ecosystem, landscape, and global scales.
ETST 503	Contemporary Ethnic Studies Issues		Yes	Contemporary ethnic studies issues in the United States and abroad.
ETST 510	Ethnicity, Race, and Health Disparities in US		Yes	Health status of ethnic/racial populations; cultural dimensions that underlie health and health disparities.
ETST 513	Capitalism and Global Ethnic Conflicts		Yes	Causes of global ethnic conflicts with emphasis on resource competition, capitalist development schemes, and role of the state.
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 541	Gender, Violence, and Indigenous Peoples		Yes	Multiple forms of violence against indigenous women and children in the Americas, Australia, and New Zealand.
ETST 544	National Identities and Nation Building		Yes	How statist conceptions of race and ethnicity have been mobilized in nation-building projects.
ETST 545	Immigration and Citizenship in U.S. History		Yes	Comparative survey of immigration and citizenship debates in the U.S. since the 19th century, with a focus on the politics of racial formations.
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.
ETST 560	Race, Ethnicity, and Higher Education		Yes	Historical and contemporary experiences of people of color as students, faculty, and staff in higher education in the United States.
F 510	Ecophysiology of Trees		Yes	Environmental factors affecting physiology of woody plants; emphasis on water relations in trees and importance of water in physiological processes.
F 520	Advanced Quantitative Methods in Forestry I		Yes	Design and analysis of optimization models in forest management operations: linear, goal, and dynamic programming.
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 522	Advanced Forest Economics		Yes	Analysis of forestry issues: financial maturity, management intensity, federal policy, taxation, natural environments, and silviculture.
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 525	Silvicultural Practices		Yes	Comprehensive coverage of silvicultural practices as applied in U.S. forestry.

F 540	Fuels, Vegetation and Fire Management		Yes	Develop, test, and display the impact of alternative fuels and vegetation treatments on vegetation development, fuels and fire behavior.
F 541	Data Analysis/Interpretation-Fire Managers		Yes	Knowledge and skills for complex analyses of fire information.
F 542	Wildland Fire Economics and Management		Yes	Managerial economics and management techniques applied to wildland fire situations.
F 544	Decision Methods for Fire Managers		Yes	Application of decision methods, including optimization techniques, finance, and decision trees to initial attack and fuels management problems.
F 622	Ecology of Forest Production		Yes	Develops student expertise in understanding carbon and nutrient flows in forests.
F 624	Fire Ecology		Yes	Fire in forest and range ecosystems; principles and techniques for evaluating fire effects on vegetation, soils, watersheds, and wildlife
F 625	Ecology of Forest Production		Yes	Develops student expertise in understanding carbon and nutrient flows in forests.
F 721	Forest Policy		Yes	Policies and institutions affecting management of forest lands in U.S.
FIN 601	Financial Management and Markets		Yes	The purpose of this course is to provide students with an introduction to foundational concepts of financial management and markets, including but not limited to, the concepts of financial institutions and interest rates, financial statement analysis, ris
Fin 669	Financing, Evaluating Sustainable Enterprise		Yes	A major learning objective relates to economic sustainability but we also specifically address measurement/quantification of sustainability initiatives.
FSHN 500	Food Systems, Nutrition, and Food Security		Yes	Global and local food systems and their potential influence on nutrition and food security.
FSHN 507	Nutrition Education in the Community		Yes	Principles and practices of teaching individuals and groups to translate nutrition knowledge into action. Emphasis on research and evaluation.

FSHN 511	Maternal and Child Nutrition		Yes	Behavioral, physiological and public health issues impacting dietary and nutritional factors that support growth and development.
FSHN 512	Nutritional Aspects of Oncology		Yes	Relationships between nutrition and cancer including the role of nutrition in specific cancers, cancer prevention and patient management.
FSHN 520	Advanced Medical Nutrition Therapy		Yes	Role of nutrition in etiology and treatment of selected disorders.
FSHN 575	Nutrition Education for a Healthy Heart		Yes	Nutrition-related issues of atherosclerotic cardiovascular disease risk reduction and background in the art/science of facilitating behavior change.
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.
FSHN 661	International Nutrition		Yes	Roles of technological programs and international agencies in meeting nutritional needs.
FTEC 572	Food Biotechnology		Yes	Interrelationships among microorganisms, food processing methods, advances in biotechnology and food quality, spoilage, shelf-life and safety.
FTEC 574	Current Issues in Food Safety		Yes	Current food safety issues from field to table; microbiological, consumer, processing, and agricultural issues.
FTEC 576	Cereal Science		Yes	Chemistry and functionality of cereal grain components and their importance in human nutrition.

FW 540	Fisheries Ecology		Yes	Population, community, and ecosystem management for fishes and other aquatic organisms in freshwater habitats.
FW 544	Ecotoxicology		Yes	Ecological effects of contaminants on populations, communities, and ecosystems.
FW 551	Design of Fish and Wildlife Studies		Yes	Principles, types of studies and philosophy of science in design of experimental, observational, and sampling studies for wildlife investigations.
FW 552	Applied Sampling for Wildlife/Fish Studies		Yes	Survey sampling theory and techniques, including distance sampling, with emphasis on wildlife and fish studies.
FW 567	Wildlife Disease Ecology		Yes	Ecological, epidemiological, and evolutionary principles of disease in fish and wildlife populations; contemporary issues in disease ecology.
FW 573	Travel Abroad-Wildlife Ecology/Conservation		Yes	Study tour of various overseas ecosystems and natural resources conservation programs; discussions with local ecologists/managers.
FW 575	Wildlife Habitat Evaluation for Educators		Yes	Teachers or leaders implement wildlife habitat evaluation procedures in classroom or community programs and evaluate performance of students.
FW 576	Wildlife Policy, Administration, and Law		Yes	Evolution of policy affecting wildlife and humans using historical, current, philosophical, legal, and administrative constructs.
FW 605	Advanced Physiological Ecology of Fishes		Yes	Physiological ecology of fishes; functional adaptations and adjustments used to cope with environmental and physiological states.
FW 662	Wildlife Population Dynamics		Yes	Wildlife population models; experimental evidence and analysis of theories of population regulation; case studies.
FW 663	Sampling and Analysis of Vertebrate Populations		Yes	Sampling and analysis of fish and wildlife populations, including survival estimation, capture-recapture sampling, and transect sampling.

FW 673	Hierarchical Modeling in Ecology		Yes	Hierarchical ecological modeling using common forms of data in fish and wildlife studies and emphasizing spatial and temporal aspects of analysis.
FW 677	Wildlife Habitat Management		Yes	Habitat models; vegetation manipulation and monitoring for wildlife; extended field trips.
GEOL 551	Groundwater Modeling		Yes	Groundwater modeling from a geologic perspective. Conceptual models and computer modeling of groundwater flow and solute transport.
GEOL 552	Advanced Topics in Hydrogeology		Yes	Current literature, new techniques, legislative and political developments in hydrogeology, and appropriate case histories.
GEOL 562	Statistical Data Analysis in Earth Resources		Yes	Analyzing Earth's resource via statistical parameters, sequential data, map analysis, and multivariate data.
GEOL 565	Petroleum Geochemistry and Geology		Yes	Geochemistry and geology of hydrocarbon generation, migration, and accumulation. Applications to hydrocarbon exploration.
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.
GRAD 592	Water Resources Seminar		Yes	Content relates to a preselected water resources theme each semester.
HDFS 677	Ethical and Legal Issues		Yes	Ethical and legal issues in field of human development and family studies.
HES 645	Epidemiology of Health and Physical Activity		Yes	Foundation in chronic disease epidemiology that will enable students to evaluate the current epidemiologic literature.
HES 650	Health Promotion Programming		Yes	Development of skills in health promotion program design, implementation and evaluation.
HES 710	Exercise in Disease Prevention		Yes	Role of exercise/physical activity in the prevention, pathophysiology and treatment of chronic diseases.

HORT 571	Soil-Plant-Water Relations/Water Stress		Yes	Movement of water in the soil-plant-atmosphere continuum. Instrumentation for measuring plant-water relations. Plant responses to drought and salinity.
HORT 575	Plant Germplasm Conservation		Yes	Principles, concepts, and methodology for collection, conservation, and utilization of plant genetic resources.
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 517	Perspectives in Global Health		Yes	Science, skills, and beliefs directed at the maintenance and improvement of health for all people.
IE 550	Ethics and International Development		Yes	Ethical reflection applied to development goals, strategies of Third World countries; relations between developed and developing countries.
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 570	Political Economy of Global Media		Yes	Examination of the changing media information system worldwide and the role of social, political, legal and economic forces upon it.
JTC 630	Health Communication		Yes	Role of health communication in public health programs and campaigns.
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.
LAND 560	Structure of Landscape Patterns		Yes	Mechanisms and concepts in landscape structure for planning, design, and environmental management.
LEAP 600	Arts Policy and Advocacy		Yes	Discussion of the role of artist as citizen and how we affect public policy.

MECH 504	Specification and Procurement of Energy Systems		Yes	Specification and procurement of engineering systems, including contracts, legal, ethics and Statement of Work development.
MECH 527	Hybrid Electric Vehicle Powertrains		Yes	Hybrid powertrains and modeling including vehicle dynamics, internal combustion engine, electric motor, energy storage, and control.
MECH 661	Theory/Control of Internal Combustion Engines		Yes	Theory and applications of internal combustion engines. Alternative fuels, engine control, and pollution prevention.
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 501	Leadership and Public Communications		Yes	Skill development for natural resource leaders including two-way communication skills used to involve publics and write for various media.
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 504	Computer Analysis of Remote Sensing Data		Yes	Resource management applications of computer-aided analysis techniques for extracting resource information from aerial and satellite remote sensing data.
NR 505	Concepts in GIS		Yes	Resource management applications for concepts of geographic information systems and spatial data analysis.
NR 506	GIS Methods for Resource Management		Yes	Resource management applications for current methods in applied 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 Modelingâ€”Natural Resources		Yes	Statistical techniques used to model natural and environmental resources; GIS, remote sensing and spatial statistics.
NR 515	Natural Resources Policy and Biodiversity		Yes	Review evolution of natural resource policy, administration, and law emphasizing interdisciplinary concept of managing for biodiversity.
NR 520	Applied Optimization in Resource Management		Yes	Design optimization models to integrate economics, ecology, ecology and social concerns in natural resource management.
NR 521	Natural Resource Administration		Yes	Expertise developed in preparing effective implementation plans for park and wilderness ecosystems.
NR 522	Wilderness Ecosystem Planning		Yes	Expertise developed in preparing effective implementation plans for park and wilderness ecosystems.
NR 523	Quantitative Spatial Analysis		Yes	Resource management techniques in spatial analysis: point pattern analysis, spatial autocorrelation, trend surface and spectral analysis.
NR 525	World Natural Resources		Yes	Interdisciplinary approach to overview global problems and solutions in natural resources.
NR 526	Techniques for Ecosystem Management		Yes	Assessing the biophysical and sociopolitical environment and decision-making techniques used in ecosystem management.
NR 527	Methods-Human Dimensions of Natural Resources		Yes	Human dimensions research in in natural resources: research process, survey methods, sampling, validity and reliability.
NR 528	Analysis: Human Dimensionsâ€”Natural Resources		Yes	Human dimensions analysis techniques in natural resources: codebook development and data entry, univariate statistics, and bivariate/multivariate statistics.

NR 529	Concepts: Human Dimensions-Natural Resources		Yes	Concepts guiding human dimensions research in natural resources: motivations/satisfactions, attitudes, values, attitude/behavior change and norms.
NR 530	Human Dimensions-Application		Yes	Natural resources application of human dimensions information; incorporate information into decision-making process.
NR 531	Public Participation		Yes	Natural resource diagnostic tools for public involvement; appropriate methods for specific situations, issues, and stakeholders.
NR 544	Conservation Methods		Yes	Examination of watershed sciences, ecological sciences, social sciences, spatial information, and integrative field work.
NR 545	Multi-level Views of Society and Conservation		Yes	Myriad and often opposing views of societal and environmental problems across cultures and across scales.
NR 546	Human Ecosystem Context		No	Background for field site-specific conservation: ecosystems, peoples, politics, and development.
NR 551	Cultural Resource Mgmt on Military Lands		Yes	Intro to cultural resource laws and policies for broad range of heritage resources, prehistoric and historic, with emphasis on tools and techniques.
NR 552	Ecology of Military Lands		Yes	Landscape ecology of military lands with emphasis on ecological processes and principles as related to militarily-induced disturbances.
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 555	Preparation of Grant Proposals		Yes	Idea development, preparation, writing, and presentation of research proposals in natural resources.
NR 561	Habitat Evaluation Procedures		Yes	Rationale, philosophy, and use of habitat as a mechanism for conducting environmental impact assessments.

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 565	Principles of Natural Resources Ecology		Yes	Overview of ecological fundamentals examined from the perspective of forest, rangeland, wildlife and fisheries science and management.
NR 566	Natural Resource Inventory and Data Analysis		Yes	Sampling designs, implementation and analysis for inventory and monitoring of forests, rangelands, wetlands and streams.
NR 567	Analysis of Environmental Impact		Yes	Preparation and evaluation of environmental impact statements under NEPA.
NR 568	Economics of Forests, Restoration and Fire		Yes	Overview of basic microeconomics principles as applied to forestry, restoration, and wildland fire management.
NR 578	Ecology of Disturbed Lands		Yes	Analysis of basic and applied ecological principles involved in the restoration of drastically disturbed lands.
NR 600	Advanced Public Relations in Natural Resources		Yes	Public relations aspects of current natural resource management programs; case history approach.
NR 621	Design of Geographic Information Systems		Yes	Procedures and applications of spatial data handling and spatial analysis.
NR 676	Ecological Models		Yes	Model development for ecosystems, subsystems; deterministic, stochastic models; validation, sensitivity analysis.
NR 684	Supervised College Teaching		Yes	Hands-on experience teaching natural resource subject matter.
NR 687	Var. Natural Resources Internship		Yes	Field experience and exercises in international natural resources management.

NR 693	Natural Resources Stewardship Seminar		Yes	Invited speakers will present different perspectives on natural resources.
NR 793	Seminar on Remote Sensing and GIS		Yes	Resource management techniques, use of remote sensing, GIS technologies for forest, range, wildlife, water, geology, recreation, and other applications.
NRRT 504	Water-Based Recreation		Yes	Identify issues and management strategies for recreation utilization of water resources.
NRRT 505	Environmental Education History and Theory		Yes	History and theories, planning and instruction; outcomes; historical events; ecological literacy, experiential learning models.
NRRT 506	Methods in Environmental Education Research		Yes	Research methods and designs; literature reviews, needs assessments and program evaluation of environmental education in informal settings.
NRRT 507	Environmental Education Planning		Yes	Informal learning theory; evaluation models focused on education in informal settings such as nature centers, zoos, etc.
NRRT 508	Current Issues in Environmental Education		Yes	Impact of current events, legislation, demographic changes, and other events on informal environmental education.
NRRT 509	Science Education in Informal Settings		Yes	Theory, application of teaching environmental science in informal settings “ nature centers, zoos, etc. Inquiry, safety, group management, experience.
NRRT 565	Research-Human Dimensions Natural Resources		Yes	Theory, research, literature review, hypothesis development, scientific writing, proposal development.
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 666	Qualitative Research in NRRT		Yes	Qualitative approaches to tourism research and techniques from a range of disciplinary backgrounds; methodological aspects.
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.
NSCI 610	Team Research in Quantitative Ecology		Yes	Interdisciplinary team-based research aimed at studying real life models in quantitative ecology using mathematical and statistical tools.
NSCI 650	Pollution and Environmental Biology for Educators		Yes	Biological consequences of energy production and consumption for grade 6-12 science teachers.
NSCI 660	Evolutionary Biology for Educators		Yes	Evolutionary theory, with an emphasis on innovative methods for teaching evolutionary biology in grades 6-12.
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.

PHIL 550	Ethics and International Development		Yes	Ethical reflection applied to development goals, strategies of Third World countries; relations between developed and developing countries.
PHIL 565	Seminar in Environmental Philosophy		Yes	Aesthetic appreciation of nature, duties concerning fauna, flora, endangered species, ecosystem.
POLS 530	International Relations		Yes	Theory and methodology utilized in different approaches to international relations.
POLS 531	Policy Making, Diplomacy, and World Politics		Yes	Theories of policy making and bargaining in international politics as applied to different countries, organizations, and historical periods.
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 501	Range Habitat Manipulation		Yes	Improvement of range habitats and effects on ecosystem components.
RS 520	Range Issues and Policy		Yes	Explores and evaluates current issues and policies concerning range use.
RS 531	World Grassland Ecogeography		Yes	Distribution, climate, and structure of the world's major grasslands with emphasis on North America.
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.
RS 630	Ecology of Grasslands and Shrublands		Yes	Distributions and climatic controls on grassland and shrubland plant communities.
RS 640	Vegetation-Environment Analysis		Yes	Multivariate analyses and ecological interpretations of vegetation communities.

RS 651	Primary Production and Decomposition		Yes	Energy transformations within primary producer compartment; dissipation of ecosystem biomass by decomposers, mineralization.
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 566	Contemporary Issues of Developing Countries		Yes	Social, economic, and technological aspects of sustainability in relation to developing countries.
SOC 661	Gender and Global Society		Yes	Course integrates social and global aspects of sustainability via gender relations and social change in global society.
SOC 664	Sociology of Water Resources		Yes	Social organization, conflict, and power in arid environments.
SOC 666	Globalization and Socioeconomic Restructuring		Yes	Sociological theories and issues in globalization; socioeconomic restructuring of the world economy.
SOC 669	Global Inequality and Change		Yes	Major issues in global inequality and change from a historical and contemporary perspective.
SOCR 567	Environmental Soil Chemistry		Yes	The chemistry of terrestrial environments and the interactions of soil constituents with bacteria, nutrients, and pollutants.
SOCR 571	Foundations of Soil Science		Yes	Importance of soils in ecology and earth system science with regard to the study and management of the soil resource.
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.
STAT 547	Statistics for Environmental Monitoring		Yes	Applications of statistics in environmental pollution studies involving air, water, or soil monitoring; sampling designs; trend analysis; censored data.
VM 570	Issues in Animal Agriculture		Yes	Issues that have a major impact on the direction of changes in animal agriculture.

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 511	Water Resource Development		Yes	Basic principles of water resource management including surface and subsurface flows.
WR 512	Water Law for Non-Lawyers		Yes	Basics of water law and policy for Colorado, western states, and the U.S.
WR 516	Cumulative Effects and Watershed Analysis		Yes	Definition, casual processes, and modeling of cumulative watershed effects; comparison and evaluation of current watershed analysis procedures.
WR 524	Modeling Watershed Hydrology		Yes	Development and application of watershed models: structure, calibration, evaluation, sensitivity analysis, simulation.
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 575	Snow Hydrology Field Methods		Yes	Field course offering hands-on experience in snow hydrology.
WR 616	Hillslope Hydrology and Runoff Processes		Yes	Hillslope hydrology and runoff processes in different environments; implications for management and modeling.
WR 712	Watershed Systems		Yes	Dynamic simulation of watershed behavior; application and evaluation of current hydrologic models.
WR 714	Water Quality for Wildland Managers		Yes	Sampling, statistics of sampling, concepts of ionic equilibrium, water quality modeling, instream flow requirements.