

Department (Academic Unit)	Course Number	Title	Description	Email
Applied Math and Statistics	AMS 7	Statistical Methods for the Biological, Environmental, and Health Sciences	Case-study-based introduction to statistical methods as practiced in the biological, environmental, and health sciences. Descriptive methods, experimental design, probability, interval estimation, hypothesis testing, one- and two-sample problems, power and sample size calculations, simple correlation and simple linear regression, one-way analysis of	
Applied Math and Statistics	AMS 7L	Statistical Methods for the Biological, Environmental, and Health Sciences	Case-study-based introduction to statistical methods as practiced in the biological, environmental, and health sciences. Descriptive methods, experimental design, probability, interval estimation, hypothesis testing, one- and two-sample problems, power and sample size calculations, simple correlation and simple linear regression, one-way analysis of	
Anthropology	ANTH 4	Public Life and Contemporary Issues	How can cultural anthropology help us to understand current events unfolding locally, nationally, and globally? Students learn how to "read" newspapers differently—that is, through the lens of cultural analysis. The world of everyday politics and society,	
Anthropology	ANTH 104	Human Adaptability	Explores the major environmental factors (temperature, altitude, diet, and disease); how they are perceived by the human body; the physiological, micro- and macroanatomical responses; and how	
Anthropology	ANTH 146	Anthropology and the Environment	Examines recent approaches to study of nature and the environment. Considers historical relationship between nature, science, and colonial expansion as well as key issues of contemporary environmental	
Anthropology	ANTH 161	The Anthropology of Food	Critically examines food as a fundamental aspect of social and cultural life and key concept in the development of anthropological theory and methods. Topics include: power relationships; community	

Anthropology	ANTH 173	Origins of Farming	Survey of the ecological and archaeological evidence for the origins of plant and animal domestication in Africa, Eurasia, and the Americas. Discussion will center on the preconditions of this drastic alteration in human ecology and its consequences in	
Anthropology	ANTH 267A	Science and Justice: Experiments in Collaboration	Considers the practical and epistemological necessity of collaborative research in the development of new sciences and technologies that are attentive to questions of ethics and justice.	
Anthropology	ANTH 273	Origins of Farming	Survey of the ecological and archaeological evidence for the origins of plant and animal domestication in Africa, Eurasia, and the Americas. Discussion will center on the preconditions of this drastic alteration in human ecology and its consequences in	
Ecology and Evolutionary Biology	BIOE 20C	Ecology and Evolution	Introduction to ecology and evolution covering principles of evolution at the molecular, organismal, and population levels. Evolutionary topics include genetic and phenotypic variation, natural selection, adaptation, speciation, and macroevolution. Also	
Ecology and Evolutionary Biology	BIOE 107	Ecology	Focuses on physiological, behavioral, and population ecology, and on linking ecological processes to evolution. It includes basic principles, experimental	
Ecology and Evolutionary Biology	BIOE 108	Marine Ecology	Paradigms and designs in marine ecology. A review of the paradigms that have shaped our understanding of marine ecology; analysis and	
Ecology and Evolutionary Biology	BIOE 109	Evolution	An examination of the history and mechanisms of evolutionary change. Topics include molecular evolution, natural and sexual selection, adaptation,	
Ecology and Evolutionary Biology	BIOE 155	Freshwater Ecology	Provides an overview of the physical, chemical, and biological processes that characterize inland waters such as lakes, streams, rivers, and wetlands. Also addresses relationships between humans and	

Ecology and Evolutionary Biology	BIOE 159 A	Field Quarter- Marine Ecology	Total immersion in marine ecology for very motivated students. Students develop a research project during first five weeks on campus and then spend five weeks of immersion in directed research without distraction in isolated locations off campus (past locations include the Gulf of California in Mexico and Moorea in French Polynesia). Not available through University Extension. No other courses may be taken during this quarter. Students must sign a contract agreeing to standards of behavior outlined in the UCSC Rule Book and by the instructors. Students are billed a materials, transportation (not airfare), and room and board fee. Paradigms and designs in marine ecology. A review of the paradigms that have shaped our	
Ecology and Evolutionary Biology	BIOE 163	Ecology of Reefs, Mangroves, and Seagrasses	Integrated treatment of coral reefs, sea grasses, and mangroves emphasizing interactions and processes through time. Major topics: biological and geological history, biogeography, evolution and ecology of dominant organisms, biodiversity, community and	
Ecology and Evolutionary Biology	BIOE 163L	Ecology of Reefs, Mangroves, and Seagrasses	An interdisciplinary laboratory exploration of the anatomy, morphology, adaptations, diversity, evolution, and ecology of corals, mangroves, and	
Ecology and Evolutionary Biology	BIOE 165	Marine Conservation Biology	Initially undertakes an in-depth comparison of the biology and conservation of marine versus terrestrial ecosystems. With this foundation, course examines marine biodiversity loss resulting from overexploitation, habitat loss, species introduction,	
Biomolecular Engineering	BME 5	Introduction to Biotechnology	Introduces the tools and applications of biotechnology in the fields of medicine, agriculture,	
Biomolecular Engineering	BME80G	Bioethics in the 21st Century: Science, Business, and Society	Serves science and non-science majors interested in bioethics. Guest speakers and instructors lead discussions of major ethical questions having arisen from research in genetics, medicine, and industries :	

Biomolecular Engineering	BME 268A	Science and Justice: Experiments in	Considers the practical and epistemological necessity of collaborative research in the development of new sciences and technologies that	
College 8	CLEI 61	Waste Management and Resource Utilization; Fosteri	Analyzes sustainability and its application in daily life and on campus, involving collaboration between students, faculty, staff, administration, and the community. Guest lecturers, discussions, an optional	
College 8	CLEI 61	"Modern Indigeneity Synthesis: Bridging	Analyzes sustainability and its application in daily life and on campus, involving collaboration between students, faculty, staff, administration, and the community. Guest lecturers, discussions, an optional	
College 8	CLEI 61	"Inspiring Sustainable Initiatives"	Analyzes sustainability and its application in daily life and on campus, involving collaboration between students, faculty, staff, administration, and the community. Guest lecturers, discussions, an optional	
College 8	CLEI 61	"Restoring our Place: Ecopsychology, Stewardship and	Analyzes sustainability and its application in daily life and on campus, involving collaboration between students, faculty, staff, administration, and the community. Guest lecturers, discussions, an optional	
College 8	CLEI 61	The Psychology of Permaculture	Analyzes sustainability and its application in daily life and on campus, involving collaboration between students, faculty, staff, administration, and the community. Guest lecturers, discussions, an optional	
College 8	CLEI 61	4. "The Multiversity: Collaborating Local and Global	Analyzes sustainability and its application in daily life and on campus, involving collaboration between students, faculty, staff, administration, and the community. Guest lecturers, discussions, an optional	
College 8	CLEI 80A	Introduction to University Discourse: Environment and	Explores rhetorical principles and conventions of university discourse, providing intensive practice in analytical writing, critical reading, and speaking. Introduces students to environmental history,	
College 8	CLEI 80B	Rhetoric and Inquiry: Environment and Society	Explores the intersections of investigation, interpretation, and persuasion and hones strategies for writing and research. Introduces students to environmental history, ethics, and policy options,	

College 8	CLEI 81A	The Environment and Us	Takes students through a wide range of approaches to environmental citizenship and provides conceptual and practical tools to explore alternatives. Students also participate in a hands-on	
College 8	CLEI 81B	Fundamentals of Environmental Science	Addresses major issues in physical and biological environmental sciences and provides tools to critically evaluate, debate, and make informed choices regarding one's own impact on the environment. Topics include: climate change, water resources, air pollution, evolution, ecology (from	
College 8	CLEI 81C	Designing a Sustainable Future	Introduces key technological solutions to environmental problems; discusses their underlying principles; and examines their societal dimensions. Topics include: conventional and renewable energy; emerging technologies for transportation, energy efficiency clean water; planetary engineering; and	
College 8	CLEI 82	Environment and Society in Film	Students write about and discuss a variety of films and articles about environment and society. Topics may include water, food systems, wilderness, wildlife, pollution, global warming, nuclear energy,	
College 8	CLEI 90	College Eight Garden Internship	One-credit internship in the College Eight Garden. Offers students of College Eight an opportunity to become involved in an experimental learning project focusing on application of concepts of sustainable	
College 8	CLEI 160	Developing Leadership to Facilitate Environmental Education	Prepares students to facilitate an action research team for "Sustainable Living" (courses 61/161) during spring quarter. Workshops and training selected to build the skills and preparation to become successful facilitators. Topics include: facilitation skills; syllabus planning and curriculum building; experiential learning techniques;	
College 8	CLEI 161	Ecology of UCSC	Analyzes sustainability and its application in daily life and on campus, involving collaboration between students, faculty, staff, administration, and the community. Guest lecturers, discussions, an optional	

College 8	CLEI 161	Food Perspectives and Gardening Practicum	Analyzes sustainability and its application in daily life and on campus, involving collaboration between students, faculty, staff, administration, and the community. Guest lecturers, discussions, an optional	
College 8	CLEI 161	Thrive: Tools for Healthy Living Through Holistic Perspective	Analyzes sustainability and its application in daily life and on campus, involving collaboration between students, faculty, staff, administration, and the community. Guest lecturers, discussions, an optional	
College 8	CLEI 161	"Urban Sustainability and Community Development	Analyzes sustainability and its application in daily life and on campus, involving collaboration between students, faculty, staff, administration, and the community. Guest lecturers, discussions, an optional	
College 10	CLTE 105	The Making and Influencing of Environmental Policy	Explores how environmental policy is made and influenced. Students learn about key contemporary environmental issues and the forces at play in determining environmental policy outcomes.	
Community Studies	CMMU 42J	Student-Directed Seminar: Green Justice	Explores the need for social justice in the expanding green economy. Pulling from the environmental, civil rights, women's rights, queer, and environmental justice movements, course explores paths of success	
Community Studies	CMMU 42K	Student-Directed Seminar: Gentrification and Its Discontents	Explores the historical process of gentrification in cities globally, concentrating on the urban experience of the United States. Considers the evolution of urban capitalist development and neoliberal governance. Topics include displacement,	
Community Studies	CMMU 100T	Agriculture, Food, and Social Justice	Examines the primary ways in which activists are attempting to resist, provide alternatives to, and/or transform aspects of the food system using social and environmental justice frameworks to evaluate such activism. Topics explored include organic	
Community Studies	CMMU 162	Community Gardens and Social Change	Examines history, theory, and practice of community gardening, emphasizing contemporary garden projects using the transformative power of direct contact with nature to effect social change. Aims include understanding the nonprofit sector's	

Cowell	COWL 42A	SDS: Brain, Mind & Consciousness	Explores the intersections of physical, biological, and cognitive sciences. Topics covered include: quantum physics, relativity and cosmology, ancient perspectives, basic and obscure neuroscience, mind-	
Cowell	COWL 168	Social Change	How do you change the world, working alone and in concert with others? To find out, students work in groups with specific community partners who, in turn, help place students in social-change	
Crown	CRWN 60	The Environment on Film: Rhetoric of Ecocriticism	Examines the overt as well as the subtle cinematic elements that depict, ponder, and persuade concerning issues of the environment and the role of	
Earth Science	EART 1	Oceanography	An introduction to the physical environment of the ocean. Origin and evolution of ocean basins; sea-floor morphology; origin, distribution, historical record, and economic significance of marine sediments; ocean currents, waves, tides, and changing sea level; beaches, shorelines, and coastal	
Earth Science	EART 9	Earth History and Global Change	Over the past 4.5 billion years, planet Earth has evolved in exciting ways. Environments, climates, and life forms have come and gone in fascinating combinations. Course examines changing physical, biological, and climatological conditions through geologic time, beginning with the evolution of the	
Earth Science	EART 20	Environmental Geology	Introduction to aspects of geology which affect and are affected by humans. Addresses a broad range of topics including resource management, geologic hazards, air and water issues, population and land use, energy costs and effectiveness, and global change, all from a unique geological/environmental	
Earth Science	EART 20L	Environmental Geology Laboratory	Laboratory sequence illustrating topics covered in course 20, with emphasis on rock and mineral identification, geologic hazard assessment, geologic resource management, and land use planning. In-	

Earth Science	EART 81-B	Fundamentals of Environmental Science	Addresses major issues in physical and biological environmental sciences and provides tools to critically evaluate, debate, and make informed choices regarding one's own impact on the environment. Topics include: climate change, water resources, air pollution, evolution, ecology (from	
Earth Science	EART 105	Coastal Geology	An investigation of the evolution, morphology, and processes in the coastal zone including the terrestrial (marine terraces, dunes, estuaries, sea cliffs) and marine (beaches, continental shelves, sea level changes, shoreline erosion and protection,	
Earth Science	EART 116	Hydrology	Introduces processes involving water on and near Earth's surface, including meteorology, water properties, surface flows in streams and runoff, flood analysis, ground water, water budgets, sediment transport, erosion, and water quality. Problem set and laboratory each week. Laboratory/field: 3 hours. Students are billed a materials fee. Alternates annually with course 146. Enrollment	
Earth Science	EART 142	Engineering Geology for Environmental Scientists	Introduction to the formation, composition, and classification of soils; the chemical interaction of soil and groundwater; and basic soil mechanics: stress-strain behavior, effective stress concept, consolidation, soil testing methods. Applications to problems including slope stability, landslides,	
Earth Science	EART 188	Geographic Information Systems with Applications to Earth Sciences	Introduction to basic principles of geographic information systems (GIS). Visualization of earthscapes with applications to problem-solving in the Earth sciences. Laboratory exercises in loading, manipulation, and interpretation of data sets. Field investigations of phenomena visualized in laboratory, including geological description,	

Earth Science	EART 191	Climate Change Science and Policy	Explores the scientific basis of current and pending climate change, and the state of climate policy issues in California, the nation, and the world. Work includes foundational lectures on both public policy and climate science; additional guest lectures from policy makers, politicians, and scientists. Students are introduced to and become familiar with	
Earth Science	EART 254	The Climate System	Focuses on atmospheric and oceanic processes that are important within the Earth's climate system, especially those that operate on annual to centennial time scales. Format includes lectures by the	
Earth Science	EART 290H	Topics in Hydrogeology	Selected topics in groundwater, hydrothermal systems, and related subjects. Discussion of theoretical models, field and laboratory approaches, and recent research. Topics vary from year to year. Course designed for graduate students but available	
Earth Science	EART 290F	Topics in Coastal Processes	Instructor and students lead discussions and make presentations on current research, problems, and publications in coastal processes. These topics include littoral drift, sediment transport and storage on the inner shelf, shoreline erosion/change and its	
Economics	ECON 143	Policy Issues in the International Economy	Covers selected issues concerning the international economy. Topics include: U.S. competitiveness; U.S. trade policy; immigration; trade and the environment; developing countries; foreign	jpoole@ucsc.edu
Economics	ECON 170	Environmental Economics	Economic analysis of environmental issues. Environmental pollution and deterioration as social costs. Economic policy and institutions for environmental control. Influences of technology,	jhgonzal@ucsc.edu
Economics	ECON 175	Energy Economics	Applications of micro, welfare, and international economic theory and methodology to the energy field. Questions considered include optimal allocation of natural resources; pricing and	jhgonzal@ucsc.edu

Electrical Engineering	EE 80J	Renewable Energy Sources	Introduction to energy storage and conversion with special emphasis on renewable sources. Fundamental energy conversion limits based on physics and existing material properties. Various sources, such as solar, wind, hydropower, geothermal, and fuel cells described. Cost-benefit analysis of different alternative sources performed, and key roadblocks for large-scale implementation	
Electrical Engineering	EE 80S	Sustainability Engineering and Practice	Topical introduction to principles and practices of sustainability engineering and ecological design with emphasis on implementation in society. Provides an understanding of basic scientific, engineering, and social principles in the design, deployment, and operation of resource-based human systems, and	
Electrical Engineering	EE 81-C	Designing a Sustainable Future	Introduces key technological solutions to environmental problems; discusses their underlying principles; and examines their societal dimensions. Topics include: conventional and renewable energy; emerging technologies for transportation, energy efficiency clean water; planetary engineering; and	
Electrical Engineering	EE 122 (IDEASS)	Collaborative Sustainability Project Design	This course is the first quarter of a year-long course, the IDEASS Program (Impact Designs: Engineering and Sustainability through Student Service), focusing on planning, implementing, and evaluating interdisciplinary projects that address sustainability in the built environment in the Monterey Bay	
Electrical Engineering	EE 175	Energy Generation and Control	Introduces electrical energy generation, sensing, and control, emphasizing the emerging smart grid. Topics include 3-phase AC power systems, voltage and transient stability, fault analysis, grid	
Electrical Engineering	EE 175L	Energy Generation and Control Laboratory	Computer analysis and simulation of energy generation, components, power-flow analysis, systems, and control covering topics from course 195. Weekly computer simulations reinforce the	

Electrical Engineering	EE 176	Energy Conservation and Control	AC/DC electric-machine drives for speed/position control. Integrated discussion of electric machines, power electronics, and control systems. Computer simulations. Applications in electric transportation,	
Electrical Engineering	EE 176L	Energy Conversion and Control	Simulink-based simulations of electric machines/drives in applications such as energy conservation and motion control in robotics and	
Electrical Engineering	EE 177	Power Electronics	Switch-mode power converter design and analysis. Non-switching power supplies. Electronic power-factor correction. Soft switching. Power-semiconductor devices. Use in energy conservation,	
Electrical Engineering	EE 177L	Power Electronics Laboratory	Buck, boost, buck-boost, flyback, and forward converter design and control. Students are billed a	
Electrical Engineering	EE 180J	Advanced Renewable Energy Sources	Provides a comprehensive overview of renewable energy sources. Fundamental energy-conversion limits based on physics and existing material properties discussed. Various sources and devices, such as solar, wind, hydropower, geothermal, and fuel cells described. Solar- and wind-site assessment, as well as biofuel energy balance, also discussed. Key scientific and economic roadblocks	
Electrical Engineering	EE 181J	Renewable Energy Sources in Practice	Provides a fundamental understanding of renewable energies in practice by experiencing them in a functional context. Students visit and evaluate renewable-energy facilities, such as wind power, solar energy, hydrogen storage, biofuel production, waste-water testing facilities, biomass, biodiesel, and biogas. This intensive one-month program allows students to carry out applied research in a	
Environmental Studies	ENVS 15	Natural History of UCSC	Introduces students to the range of natural species and communities occurring on the UCSC campus. All class time is spent outside, and each week a	

Environmental Studies	ENVS 23	The Physical and Chemical Environment	Provides an overview of the physical and chemical environment of planet Earth. Fundamental chemistry and physics is introduced in the process of learning about Earth in a holistic way. The influence of human societies on the global environment is one focus of discussion. Earth's many "spheres" are explored first: the lithosphere; the atmosphere; the	
Environmental Studies	ENVS 24	General Ecology	Covers principles of ecology including limits to species abundances, evolutionary ecology, population dynamics, community interactions and patterns, and ecosystem patterns and dynamics.	
Environmental Studies	ENVS 25	Environmental Policy and Economics	Introduces basic concepts from policy studies and economics that help explain environmental challenges. Provides an overview of how government, non-governmental organizations, and	
Environmental Studies	ENVS 65	Introduction to Fresh Water: Processes and	Introduction to freshwater resources from multiple scientific and policy perspectives. After a review of basic concepts, water issues affecting cities, farms,	
Environmental Studies	ENVS 80B	The Ecological Forecast for Global Warming	A broad overview of the impacts of human activities on the global climate system. Topics include how climate affects the distribution of ecosystems, the influence of global climate change on biodiversity,	
Environmental Studies	ENVS 91F	Community and Agroecology	Interdisciplinary two-credit seminar designed to introduce students to concepts of community and agroecology in the context of sustainability. Course can serve as a gateway to or as a continuing basis	
Environmental Studies	ENVS 100	Ecology and Society	Introduction to environmental issues in an interdisciplinary matrix. Focuses on three issues at the intersection of ecological questions and social institutions: agroecology and sustainable agriculture; population growth, economic growth, and environmental degradation; and biodiversity conservation and land management. Reviews the	

Environmental Studies	ENVS 100L	Ecology and Society Writing Laboratory	Required writing lab accompanying course 100. Students are introduced to writing in different styles and for different audiences typical of the ecosystem-society interface. Course 100 writing assignments are developed, written, and revised in conjunction	
Environmental Studies	ENVS 104A	Introduction to Environmental Field Methods	A course in the process of field research and monitoring, with emphasis on use of the scientific method; experimental design, data handling, statistical analysis and presentation; and basic field methodologies. Application of basic field skills, including habitat description; methods for sampling	
Environmental Studies	ENVS 104L	Environmental Field Methods Laboratory	Students directly observe elements of natural history and ecological process; design and implement field studies based on lectures; deploy the methods discussed in lectures; and collect data	
Environmental Studies	ENVS 107A,B,C	Natural History Field Quarter	A 15-unit field course that uses California wild lands to develop skills of natural history observation and interpretation. Students gain the ability to identify plants, animals, vegetation types, and landscapes, as well as address the complex issues of	
Environmental Studies	ENVS 110	Institutions, the Environment, and Economic Systems	Debate about environmental policy is often couched in economic terms. Environmental issues have become questions of political economy, as they influence international and domestic policy and reflect on the functioning of the market system. Examines the assumptions and implications of	
Environmental Studies	ENVS 115 A	GIS Environmental Application	Introduction to geographic information systems (GIS) as the technology of processing spatial data, including input, storage and retrieval; manipulation and analysis; reporting and interpretation. Emphasizes GIS as a decision support system for environmental and social problem solving, using	

Environmental Studies	ENVS 115L	Exercises in Geographic Information Systems	Exercises in Geographic Information Systems and Remote Sensing that demonstrate the development of digital geographic data. Students gain hands-on experience with developing datasets, using imagery to create GIS layers, performing spatial analysis, and utilizing GPS technology. Emphasis placed on	
Environmental Studies	ENVS 120	Conservation Biology	Introduces biological and anthropogenic influences on the diversity and scarcity of organisms. Explores the basic ecological models and research tools that provide the foundation for many conservation and management decisions regarding endangered and/or	
Environmental Studies	ENVS 123	Animal Ecology and Conservation	Advanced course in animal ecology and conservation focusing on the ecology, behavior, biogeography,	
Environmental Studies	ENVS 129	Integrated Pest Management	Provides an extensive coverage of applied ecology, pest control technology, and the social, political, and economic factors regulating the ideologies and practice of pest management. Topics include agroecosystem design and population regulation of insects, weeds, vertebrates, and pathogens; field	
Environmental Studies	ENVS 130A	Agroecology and Sustainable Agriculture	Ecological concepts and principles are applied to the design and management of sustainable agroecosystems. Alternatives for agriculture are	
Environmental Studies	ENVS 130L	Agroecology and Sustainable Agriculture Laboratory	Laboratory and field exercises to train in the analysis of ecological processes in agricultural systems, with a focus on the quantification of ecological sustainability. Experimental design, analysis, and	
Environmental Studies	ENVS 130B	Principles of Sustainable Agriculture	Agricultural sustainability is examined as a complex set of interactions between ecological, social, and economic components of an agroecosystem. Case studies are drawn from issues facing current U.S.	
Environmental Studies	ENVS 131	Insect Ecology	Advanced course in ecology featuring insect-plant interactions such as herbivory, pollination, and the effects of plants on insect population dynamics. Lectures emphasize current controversies in	

Environmental Studies	ENVS 133	Agroecology Practicum	Lectures and demonstrations are combined with field applications to give students direct experience and knowledge of sustainable agriculture and horticulture practices and principles. UCSC Farm and Garden are the living laboratories for testing	
Environmental Studies	ENVS 140	National Environmental Policy	An overview of all major federal environmental policy domains. Analyzes political, social, economic, and other forces influencing federal (and some state) public policy responses to land use, natural	
Environmental Studies	ENVS 141	Ecological Economics	Application of economic analysis to natural resource policy and management. Topics include welfare economics, property rights and externalities, natural resource valuation, exhaustible and renewable	
Environmental Studies	ENVS 142	Energy Politics and Policy	Explores the social and environmental dimensions of energy production and consumption. Provides an overview of the tools to evaluate a new clean-energy economy and its wider political and economic implications. Students study assessment tools, such	
Environmental Studies	ENVS 143	Sustainable Development: Economy, Policy, and Environment	Considers whether and how global poverty can be alleviated without irreparably damaging the environment. Examines interactions among population, economic growth, poverty, global consumption ethos, property rights systems, global economy, state capacity, and environmental	
Environmental Studies	ENVS 147	Environmental Inequality/Environmental Justice	Reviews research on race, class, and differential exposure to environmental hazards. Shows how environmental inequality has, from the start, been an essential feature of modernity. Situates the	
Environmental Studies	ENVS 149	Environmental Law and Policy	Surveys a wide range of topics in environmental law, including population control, state and federal jurisdiction, land and resources control, public land management, pollution control, and private rights	

Environmental Studies	ENVS 150	Coastal and Marine Policy	Introduces and analyzes the history, design, implementation, and effectiveness of key legal and institutional frameworks that govern the use and stewardship of coastal and marine areas and resources. Primary focus is on the U.S., although attention is also devoted to international laws and	
Environmental Studies	ENVS 151	Environmental Assessment	Introduction to California land use planning law and practice, and the theory, practice, and public policy aspects of environmental assessment, using the California Environmental Quality Act (CEQA) as a model. The National Environmental Policy Act (NEPA) and other environmental and planning legislation also considered. Covers elements of State law and regulations, environmental impact assessment requirements, and practical procedures	
Environmental Studies	ENVS 158	Political Ecology and Social Change	The object is to provide a rigorous grounding in the method of political ecology and to demonstrate how this approach has been used in environmental analysis and problem solving by environmental	
Environmental Studies	ENVS 160	Restoration Ecology	A multidisciplinary overview of restoring degraded ecosystems. Among the topics addressed are linkages between ecological principles and restoration, planning and implementing restoration	
Environmental Studies	ENVS 161A	Soil/Plant Nutrition	Provides fundamentals of soils and plant nutrition. The physical, biological, and chemical components of soils are investigated in relation to their ecological	
Environmental Studies	ENVS 165	Freshwater Issues and Policy	Concepts, vocabulary, and skills necessary to the analysis of freshwater issues are introduced from hydrology, ecology, law, economics, engineering, and other disciplines. The skills are then applied to	
Environmental Studies	ENVS 166	Agroecosystem Analysis and Watershed Management	Explores a range of approaches to examine agroecosystem function, watershed management, and concepts of sustainability. Uses a combination of lecture, demonstration, field work, and field trips to illustrate approaches to analysis of managed	

Environmental Studies	ENVS 167	Freshwater Ecology	Field and lecture course teaches the physical and biological patterns and processes in freshwater and wetland systems, primarily focusing on Central	
Environmental Studies	ENVS 167L	Freshwater and Wetland Ecology Lab	Provides basic skills to assess chemical, biological, and physical characteristics of freshwater creeks, rivers, and wetlands. These skills are needed in environmental consulting, municipal agencies engaging in water management or impacts on water, and regulatory agencies. Relies on methods	
Environmental Studies	ENVS 168	Biogeochemistry and the Global Environment	Studies biogeochemical cycles and related environmental issues such as global environmental change, eutrophication, ecosystem degradation, and agricultural sustainability. Discusses transformation	
Environmental Studies	ENVS 169	Climate Change Ecology	Advanced topics in atmospheric science and ecological theory. Topics include impacts on biodiversity, carbon sequestration, sustainable	
Environmental Studies	ENVS 173	An Introduction to World Environmental History	Introduces students to some of the central issues in world environmental history such as: human attitudes toward the natural environment; the role of human societies, their institutions and technologies in changing the face of the earth; and the historical impact of environmental and	
Environmental Studies	ENVS 177	Teaching Environmental Education	Designed for environmental studies majors interested in teaching environmental education in the K-12 school system. Students investigate incorporation of environmental education in the classroom; design an environmental education	
Environmental Studies	ENVS 190	Capstone Course: Environmental Problem Solving	A synthetic course that draws on the knowledge and skills students bring from other courses in the major. Focuses on written and oral individual and group projects in which students must take the	
Environmental Studies	ENVS 191F	Community and Agroecology Seminar	Interdisciplinary two-credit seminar designed for upper-division students who want to become involved in PICA (Program in Community and Agroecology) and to explore concepts of community and agroecology as they relate to sustainability. Also	

Environmental Studies	ENVS 196	Senior Seminar	Readings and discussions of primary literature on a current environmental studies topic. Field or literature-based research projects (individual or group) writing multiple drafts resulting in a final paper. Topics vary yearly; consult current course listings. Enrollment by application with selection based on appropriate background and academic performance and by consent of instructor. Satisfies senior comprehensive requirement. Enrollment restricted to senior environmental studies majors;	
Environmental Studies	ENVS 196	Senior Seminar-Sustainable Fisheries	What is the conservation value of seafood eco-labels and similar tools that are increasingly confronting even the most casual of fish eaters – tools that range from fish counter labels, seafood cards, and smartphone apps ranking the sustainability of various fish items on offer all the way to NGO-organized boycotts of retailers who continue to sell notoriously unsustainable species like Chilean seabass or orange roughy? And how does the intent behind this increasingly broad and varied array of non-state, market-based governance initiatives in fisheries and aquaculture compare to their actual on-the-ground performance in triggering improvements in the environmental performance of fisheries and aquaculture operations? The course challenges students to tackle these cutting edge	
Environmental Studies	ENVS 196	Senior Seminar-CA Energy Policy	This course explores how economic and environmental regulatory policies affect renewable energy project development. The focus will be on the regulatory setting in California, but the course also compares the California system to other states, the federal system, and some other countries (especially members of the European Union). Each student must write a 15-20 page final term paper	

Environmental Studies	ENVS 196	Senior Seminar- Wildlife Behavior and Conservation	This course on animal ecology and conservation seeks to understand why animals behave the way they do and how this impacts their conservation. We will focus on the role of natural selection in shaping animal behavior, and the interaction between animal behavior and the environment. Course goals are to help you develop the tools to think intelligently about issues influencing the	
Environmental Studies	ENVS 196	Senior Seminar: restoration research and practicum	Students will work on ongoing research projects on coastal prairie and scrub habitat restoration at Younger Lagoon Reserve. They will write papers that either analyze data from field research or	
Environmental Studies	ENVS 196	Senior Seminar: Agroecology Intensive	This Senior Seminar will focus on agroecology with the goals of studying different aspects of organic crop production using the CASFS farm as a living laboratory. This will be an intensive course that will involve reading relevant academic and practical literature, investigating research methods, and developing and implementing study modules. Students will work in groups of two and choose a topic, such as crop growth and weed management, fertility and soil management, arthropod pest	
Environmental Studies	ENVS 196	Senior Seminar: Science communication and Policy	In this course we analyze how the American political process is / is not responding meaningfully to scientists' warnings about the threat of climate change. Issues to be addressed: how the science has been communicated to the public, by both scientists, environmental activists and other institutional actors who understand the urgency to	

Environmental Studies	ENVS 196	Senior Seminar: Plant Diseases Research Practicum	Students learn basic techniques in studying plant diseases through a complete research project on an important tree disease on the UCSC Campus Natural Reserve. As a group, students conduct basic observational studies on the disease in the field, learning survey methodology. All students complete Koch's proof of pathogenicity with the pathogen. Students then gather and synthesize the published literature on the disease, collectively learning what is known, and what still needs to be discovered. Working individually or in small groups, they design, carry out, analyze, and present a focused research project on some unknown aspect of the disease. Each student individually writes a detailed synthesis	
Environmental Studies	ENVS 196	Senior Seminar- Ecology and Social Justice Interdisciplinary Research	This course involves supervised individual and group interdisciplinary research on ecological and social justice dimensions of conservation, food production, other natural resource use, and community. Students will undertake individual or small group projects based on field observation, public documents, and library materials to consider what	
Environmental Studies	ENVS 201A,B	Keywords and Concepts	Two-quarter course introduces keywords and concepts that underlie interdisciplinary work in environmental studies through lectures, directed readings, and discussion. Modules include resonant concepts in ecology and society; ecology and evolution; environment and development; the global environment and society; agroecology and	
Environmental Studies	ENVS 201N	Interdisciplinary Research Design in Environmental Studies	Provides students with opportunities to learn research protocols, practices, and methods used in environmental studies. Combination of lectures, reading, practical exercises, and short projects used	

Environmental Studies	ENVS 215A	Geographic Information Systems and Environmental Applications	Introduction to geographic information systems (GIS) as the technology of processing spatial data, including input, storage and retrieval; manipulation and analysis; reporting and interpretation. Emphasizes GIS as a decision support system for environmental and social problem solving, using	
Environmental Studies	ENVS 215L	Exercises in Geographic Information Systems	Exercises in Geographic Information Systems and Remote Sensing that demonstrate the development of digital geographic data. Students gain hands-on experience with developing datasets, using imagery to create GIS layers, performing spatial analysis, and utilizing GPS technology. Emphasis placed on	
Environmental Studies	ENVS 220	Conservation Biology	The principles of conservation biology, including a review of the core disciplines of demography, population genetics, island biogeography, and community ecology and discussion of area and edge effects, population viability, and ecosystem issues	
Environmental Studies	ENVS 240	Public Policy and Conservation	Introduction to political and economic approaches to policy analysis, with particular reference to natural resource scarcity, property rights, and environmental conservation. Case studies apply economic and policy process concepts to the	
Environmental Studies	ENVS 290	Interdisciplinary Research Seminar	Research seminars presented weekly throughout the year by environmental studies and affiliated faculty, by visiting scholars, and by graduate students. Students discuss the content and methodology of	
Environmental Studies	ENVS 290L	Graduate Research Seminar	Graduate student presentations of doctoral research proposals, dissertation work-in-progress, grant applications, and conference papers. This weekly laboratory meeting seeks to develop professional	
Environmental Studies	ENVS 291	Advanced Readings in	Advanced Readings in Environmental Studies	
Environmental Studies	ENVS 292	Topics in Research in	Topics in Research in Environmental Studies	

Feminist Studies	FMST 20	Feminism and Social Justice	Examines, and critically analyzes, select post-World War II movements for social justice in the United States from feminist perspectives. Considers how those movements and their participants responded to issues of race, class, gender, and sexuality. A feminist, transnational, analytic framework is also developed to consider how those movements may	
Feminist Studies	FMST 30	Feminism and Science	Explores questions of science and justice. Examines the nature of scientific practice, the culture of science, and the possibilities for the responsible practice of science. Rather than focusing on feminist critiques of science, the course examines how	
Feminist Studies	FMST 40	Sexuality and Globalization	Examines the relationship between sexuality and the contemporary term "globalization" as a dense entanglement of processes that emerges from a history of U.S. empire. Sexuality cannot be separated from power struggles over the classification of bodies, territories, and questions of	
History, Art and Visual Culture	HAVC 141I	Environments, Installations and Sites	A study of conceptual and formal issues that have informed the production of temporary, site-specific art works since 1960. Works that seek to transform the role of the audience, to escape or remake museum and gallery spaces, to introduce	
Kresge	KRSG 62	Transformative Action	Introduces the most effective methods for social change. Examines social entrepreneurs, innovators, and visionaries. Reviews traditional methods of activism and new theories of nonviolent social	
Kresge	KRSG 63	Kresge Garden Cooperative	Offers hands-on gardening skills within a student-run space. Focuses on developing a strong cooperative garden on campus, with special	
Kresge	KRSG 64	Tools for World Changers	Develops life skills that support you and help you support others. Implement effective methods for personal productivity (managing your to-dos, calendar, and inbox), interpersonal communication,	

Kresge	KRSG 65A	Power and Representation: Food and Community	Explores core themes of power and representation through the mediums of food, nature awareness, community, personal empowerment and sustainable living. Students will develop meaningful final projects in collaboration with Kresge Food Co-op,	
Kresge	KRSG 67	Transformative Justice Seminar	Examines the principles and processes of restorative justice juxtaposed to current practices in the judicial and educational systems of contemporary society. Students study leading restorative justice practices	
Kresge	KRSG 68	Transformative Communication	Based on Nonviolent Communication (NVC), this experiential course offers skills in intra- and inter-personal conflict transformation by aligning with core values; understanding what motivates self and others; cultivating compassion, even under difficult circumstances; and bringing greater peace into our world. Enrollment restricted to frosh, sophomores,	
Legal Studies	LGST 132	California Water Law and Policy	Explores the rich history and fundamental legal concepts surrounding water in California. Students identify, evaluate, and debate some critical water	
Legal Studies	LGST 149	Environmental Law and Policy	Surveys a wide range of topics in environmental law, including population control, state and federal jurisdiction, land and resources control, public land management, pollution control, and private rights	
Latino and Latin American Studies	LALS 80P	Energy, Society, and Environment in Latin America	From petroleum extraction to hydroelectric power to ethanol production, Latin America is an important provider of the world's energy. Course examines the implications of this process for economic growth, climate change, environmental degradation, social	
Latino and Latin American Studies	LALS 152	Consumer Cultures Between the Americas	Examines the circuits of media, commodities, and migration connecting the Americas in an age of globalization. Issues of states, transnational markets, social relations, and cultural	

Latino and Latin American Studies	LALS 164	Environmental Justice	Introduces students to participatory-action research, which both creates positive social-environmental change and contributes to scientific knowledge. Through collaboration with environmental justice organizations, students develop research skills, hone critical reflection abilities, and understand the	
Microbiology and Environmental Toxicology	METX 80E	Aquatic Toxicology	An introduction to the sources, cycling, and impacts of toxicants in aquatic systems, including acid rain, ground water, fresh water rivers and lakes, estuaries, and the ocean. Emphasis is on the properties of toxic chemicals that influence their	flegal@ucsc.edu
Microbiology and Environmental Toxicology	METX 101	Sources and Fates of Pollutants	Presents in-depth important principles of environmental toxicology related to the introduction, transport, and fate of toxicants in aquatic and terrestrial environments, including environmental chemistry and biogeochemical cycles as well as exposure to pathways and uptake by organisms.	flegal@ucsc.edu
Microbiology and	METX 119	Microbiology	Cell and molecular biology of bacteria and their viruses, including applications in medicine, public	
Microbiology and	METX 119L	General Microbiology Lab	An introduction to the principles and practices of laboratory microbiology, with a substantial	
Microbiology and Environmental Toxicology	METX 201	Sources and Fates of Pollutants	Presents in-depth important principles of environmental toxicology related to the introduction, transport, and fate of toxicants in aquatic and terrestrial environments including environmental chemistry and biogeochemical cycles as well as exposure pathways and uptake by organisms. Additional emphasis will be placed on the	
Oakes College	OAKS 67	The Politics of Food: Labor and Social Justice	Engages the themes of Oakes College (respect for diversity and social justice) and the interests of UCSC's Center for Agroecology and Sustainable Food Systems. Topics include the racial politics of food,	mbaker@ucsc.edu, ryking@ucsc.edu

Ocean Sciences	OCEA 1	The Oceans	An interdisciplinary introduction to oceanography focusing on biological, chemical, geological, and physical processes. Covers topics such as origins and structure of planet Earth and its oceans, co-evolution of Earth and life, plate tectonics, liquid water and the hydrologic and hydrothermal cycles, salinity and elemental cycles, ocean circulation,	mdmccar@ucsc.edu
Ocean Sciences	OCEA 80B	Our Changing Planet	Interdisciplinary scientific perspective on Earth system, focusing on human impacts on global environment. Introduces concepts of Earth system science and explores topics such as global warming,	
Ocean Sciences	OCEA 102	Oceans and Climate: Past, Present, and Future	An introduction to Earth's environment, particularly its oceanic and climatic components. Emphasizes interactions between chemical, physical, biological, and geological processes, and fundamentals of past, present, and future global environmental change.	jzachos@ucsc.edu
Ocean Sciences	OCEA 130	Biological Oceanography	Biological description of sea, with emphasis on processes and patterns. Topics include microbial dynamics, phytoplankton and zooplankton production, and ecology of marine food webs. Emphasis placed on understanding how physical, chemical, and geological environment shapes	kudela@ucsc.edu
Ocean Sciences	OCEA 211	Climate Dynamics	Introduction to the dynamics of the Earth climate system. Topics: climate system components; the global energy balance; radiative transfer; the hydrological cycle; general circulations of the	
Ocean Sciences	OCEA 230	Biological Oceanography	Biological description of sea, with emphasis on processes and patterns. Topics include microbial dynamics, phytoplankton and zooplankton production, and ecology of marine food webs. Emphasis placed on understanding how physical, chemical, and geological environment shapes biology and ecology of oceans, including such topics	

Ocean Sciences	OCEA 285	Past Climate Change	Reviews the fundamentals of climate dynamics and explores how Earth's environment is a product of the interaction of its components. Uses examples of climate change from historical and geologic records, and from predictions of the future. Recommended	
Physics	PHYS 156	Applications of Solid State Physics	Emphasizes the application of condensed matter physics to a variety of situations. Examples chosen from subfields such as semiconductor physics, lasers, superconductivity, low temperature physics,	
Politics	POLI 70	Global Politics	Can common global interest prevail against particular sovereign desires? Surveys selected contemporary issues in global politics such as wars of intervention, ethnic conflict, globalization, global	
Politics	POLI 125	Political Organizations in American Politics	Introduces the literature on interest groups and attempts to answer the question: Do such groups promote or hinder American democracy? Class readings and lectures review and assess the participation of interest groups in the electoral process and in Congress, the executive branch, and	ctucey@ucsc.edu
Politics	POLI 132	California Water Law and Policy	Explores the rich history and fundamental legal concepts surrounding water in California. Students identify, evaluate, and debate some critical water	rlangrid@ucsc.edu
Politics	POLI 174	Global Environmental Politics	Focus on global environmental "problematique" and how it is being played out in a variety of political economic, and social arenas. Includes technical overview of environmental movements, green	
Politics	POLI 190I	Political Ecology and Ecological Politics	Examines a range of ecological philosophies and their implications for politics, economics, social action, and the Earth. Themes addressed in relation to political ecology include: liberalism, historical	
Psychology	PSYCH 149	Community Psychology: Transforming Communities	Introduction to community psychology, a discipline that blends social psychology, sociology, and anthropology. Class topics include levels of analysis, ecologies, prevention, intervention, feminism,	
Psychology	PSYCH 159X	Psychology of Social Activism	Covers social-psychological scholarship relevant to social justice activism that receives limited academic	

Sociology	SOCY 115	Sustainable Design as Social Change	Using current sociological understandings of knowledge-making and technological innovation, students learn sustainable project design as collaborative "open" processes. Includes computer-assisted, active-learning team workshop exercises and laboratories in both face-to-face and virtual e-	emdupuis@ucsc.edu
Sociology	SOCY 125	Society and Nature	A healthy society requires a stable and sustainable relationship between society and nature. Covering past, present, and future, the course covers environmental history of the U.S., the variety and	jmetcalf@ucsc.edu
Sociology	SOCY 130	Sociology of Food	Following food from mouth to dirt, explores the politics, economy, and culture of eating, feeding, buying, selling, and growing food. Topics cover both the political economy of the food system as well as	
Sociology	SOCY 132	Sociology of Science and Technology	Reviews social and cultural perspectives on science and technology, including functionalist, Marxist, Kuhnian, social constructionist, ethnographic, interactionist, anthropological, historical, feminist, and cultural studies perspectives. Topics include sociology of knowledge, science as a social problem,	
Sociology	SOCY 167	Development and Underdevelopment	Examines contemporary debates about development in the Third World: alternative meanings of development, recent work on the impact of colonial rule, how some economies have industrialized, ideas about agrarian change, and recent research on	akalinic@ucsc.edu
Sociology	SOCY 177	Urban Sociology	Historical and contemporary examination of urban life including community, race, geography, urban and suburban cultures and lifestyles, stratification, housing, crime, economic and environmental issues,	sbearns@ucsc.edu
Sociology	SOCY 177E	Eco-Metropolis: Research Seminar in Urban and Environmental Studies	Explores the intersection of cities and the environment through the emerging field of urban environmental studies. Focuses on varied and often contested efforts at "urban sustainability" in recent history. Draws on literatures in environmental	miriam@ucsc.edu

Sociology	SOCY 179	Nature, Poverty, and Progress: Dilemmas of Development and Environment	Concerns about environmental change, including global warming, threats to the ozone layer, and industrial pollution, raise questions about Third World development. Simple views of the relation between society and nature, such as blaming population growth, industrialization, or poor people,	bencrow@ucsc.edu
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