

Environmental Sciences Upper Division Electives

Each student must complete at least one 3 or 4 unit upper division course in their area of concentration. Please refer to the following list to determine the concentration that each course falls under, or check the list online at <http://environmentalsciences.berkeley.edu/udelectives.html>

B=Biological Sciences Concentration P=Physical Sciences Concentration S=Social Sciences Concentration

Bio.	Soc.	Phys.	Course	Course Name	Cross Listed	
			Architecture			
		P	140	Intro. to Energy and Environmental Management/4		
		P	149	Seminar on the Physical Environment in Buildings/variable units		
			Chemical Engineering			
		P	140	Intro. to Chemical Process Analysis/4		
		P	141	Chem. Engineering Thermodynamics/3		
		P	142	Chem. Kinetics and Reaction Engineering/3		
		P	150A	Transport Processes/4		
		P	150B	Transport Separation Processes/4		
			Chemistry			
B		P	103	Inorganic Chemistry in Living Systems/3		
		P	104A	Advanced Inorganic Chemistry/3		
		P	104B	Advanced Inorganic Chemistry/3		
		P	105	Instrumental Methods of Analysis/4		
B		P	112A	Organic Chemistry/5		
B		P	112B	Organic Chemistry/5		
B			115	Organic Chemistry--Advanced Laboratory Methods/5		
		P	120A	Physical Chemistry/3		
		P	120B	Physical Chemistry/3		
		P	125	Physical Chemistry Lab/3		
		P	130A	Biophysical Chemistry/3		
		P	130B	Biophysical Chemistry/3		
		P	C182	Atmospheric Chemistry and Physics/3	EPS C182	
			Civil and Environmental Engineering			
		P	100	Elementary Fluid Mechanics/4		
B		P	101	Fluid Mechanics of Rivers, Streams, and Wetlands/3		
		P	103	Introduction to Hydrology/3		
B	S	P	107	Climate Change Mitigation/3		
		P	108	Air Pollutant Emissions and Control/3		
		P	109	Indoor Air Quality/3		
B		P	110	Water Pollution Control and Treatment/3		
		P	111	Environmental Engineering/3		
B		P	113	Lakes and Reservoirs: Ecology and Management/3		
B			114	Environmental Microbiology/3		
		P	115/L	Water Chemistry/3,1		
		P	C116	Environmental Aqueous Geochemistry/3	ESPM C128	
		P	117/L	Environmental Organic Chemistry/2,1		
		P	171	Intro. to Geological Engineering/3		
		P	173	Groundwater and Seepage/3		
			Demography			
	S		C126	Population Issues/4	Sociology C126	
	S		C175	Economic Demography/3	Economics	
			Earth and Planetary Science (EPS)			
B		P	C100	Communicating Ocean Science/2	IB C100	
		P	100A	Minerals: Their Constitution and Origin/4		
		P	100B	Genesis and Interpretation of Rocks/4		
		P	101	Field Geology and Digital Mapping/4		
		P	105	Hydrogeology/3		
		P	117	Geomorphology/4		
		P	119	Geologic Field Studies/2		
B	S	P	C120	Analysis of Environmental Data/4	ERG C130	
B			C129	Biometeorology/3	ESPM C129	
		P	131	Geochemistry/4		
		P	C141	Paleoclimatology/4	Geography	

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		P	C146	Geological Oceanography/4	Geography
	S	P	170AC	Crossroads of Earth Resources and Society/4	L&S 170AC
		P	C180	Atmospheric Chemistry/3	ESPM C180
		P	C181	Atmospheric Physics and Dynamics/3	Geography
		P	C182	Atmospheric Chemistry and Physics/3	Chemistry C182
B		P	185	Marine Geobiology/2	
			Economics		
	S		C102	Natural Resource Economics/4	EEP C102
	S		C125	Environmental Economics/4	Econ C101
	S		C171	Economic Development/4	EEP C151
	S		C175	Economic Demography/3	Demography
			Energy and Resources Group (ERG)		
	S	P	100	Energy and Society/4	
B	S	P	102	Quantitative Aspects of Global Environmental Problems/4	
		P	120	Renewable Resources for Electric Generation/3	
B	S	P	C130	Analysis of Environmental Data/4	EPS C120
	S	P	151	Politics of Energy and Environmental Policy/4	
	S		166	Science for the Public/3	
	S		170	Environmental Classics/3	
	S		C180	Ecological Economics in Historical Context/3	EEP C180
			Engineering		
		P	115	Engineering Thermodynamics/4	
	S		124	Ethics and the Impact of Technology on Society/3	
			Environmental Economics and Policy (EEP)		
	S		100	Micro-economic Theory w/ Application to Natural Resources/4	
	S		C101	Environmental Economics/4	EEP C125
	S		C102	Natural Resource Economics/4	Econ. C102
B	S		C115	Modeling and Mangement of Biological Resources/4	ESPM C104
	S		131	Globalization and the Natural Environment/3	
	S		141	Agricultural and Environmental Policy/4	
	S		C151	Economic Development/4	Econ C171
	S		153	Population, Environment, and Development/3	
	S		161	Advanced Topics in Environmental & Resource Economics/4	
	S		162	Economics of Water Resources/3	
			Environmental Sciences		
B	S	P	125	Environments of the SF Bay Area/3	
			Environmental Science Policy and Management (ESPM)		
B	S		100	Environmental Problem Solving/4	
B			101A	Sierra Nevada Ecology/4	
B			102A	Terrestrial Resource Ecology/4	
B		P	102B/L	Natural Resource Sampling/2,2	
	S		102C	Resource Management/4	
	S		102D	Resource and Environmental Policy/4	
B			C103	Principles of Conservation Biology/4	IB C156
B	S		C104	Modeling and Management of Biological Resources/4	EEP C115
B			105A	Conservation Biology/4	
B			106	American Wildlife: Identification and Conservation/3	
B			C107	Biology and Geomorphology of Tropical Islands/13	IB C158
B			108A	Trees: Taxonomy, Growth, and Structures/3	
B			109	Range Plants/3	
B			110	Primate Ecology/4	
B			111	Ecosystem Ecology/3	
B			112	Microbial Ecology/3	
B			113	Insect Ecology/2	
B			114	Wildlife Ecology/3	
B			115B	Biology of Aquatic Insects/3	
B			116A	Forest Ecology/4	
B			116B	Range Ecology, Improvements, and Management/3	
B			116C	Tropical Forest Ecology/3	
B	S		117	Urban Garden Ecosystems/4	

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B			118	Agricultural Ecology/3	
B			119	Chemical Ecology/2	
B		P	120	Soil Characteristics/3	
B		P	121	Development and Classification of Soils/3	
		P	122	Field Study of Soil Development/1	
B			124	The Soil as a Medium for Plant Growth/3	
		P	125	Soil Physics/4	
		P	126	Environmental Soil Chemistry/3	
		P	127	Terrestrial Ecosystem Analysis: Below Ground Processes/4	
		P	C128	Environmental Aqueous Geochemistry/3	Civil & Envir Engin C116
B			C129	Biometeorology/3	EPS C129
		P	C130	Water in Terrestrial Environment/3	Geography
B		P	131	Soil Microbiology/2	
B			134	Fire, Insects, and Diseases in Forest Ecosystems/3	
B			135	Biological Control of Pests/3	
B			136	Forest Health/3	
B			C138	Introduction to Comparative Virology/4	MCB C114, Plant Bio C114
B			140	General Entomology/4	
B			144	Insect Physiology/3	
B			145	Anthropod-borne Zoonotic Diseases/2	
B			146/L	Medical and Veterinary Entomology/3,1	
B			147	Field Entomology/1	
B		P	C148	Pesticide Chemistry and Toxicology/3	NST C144
B			C149/L	Molecular Ecology /2,2	IB C149/L
	S		155	Sociology of Natural Resources/4	
	S		160AC	American Environmental and Cultural History/4	History 120AC
	S		161	Environmental Philosophy and Ethics/3	
B	S		162	Bioethics/3	
	S		163AC	Environmental Justice: Race, Class, Equity, and the Env/3	Sociology
	S		165	International Rural Development Policy/4	
	S		166	Natural Res. Policy and Indigenous Peoples/4	
	S		167	Environmental Health and Development/3	
	S		168	Political Ecology/4	
	S		169	International Environmental Politics/4	
B		P	172	Photogrammetry and Remote Sensing/3	
		P	C180	Atmospheric Chemistry/3	EPS C180
B		P	181A	Fire Science and Mgmt in the Urban-Wildland Interface/3	
	S		181B	Understanding Urban-Wildland Interface Fires/3	
	S		183	Forest Planning and Management/4	
B			184	Agroforestry Systems/3	
B			185	Multiple Resource Silviculture/4	
B			186	Management of Grassland and Woodlands/4	
B			187	Wildlife Conservation/3	
B			188	Case Histories in Wildlife Management/2	
				Geography	
	S		130	Natural Resources and Population/4	
B	S	P	134	Natural Hazards and Problems/4	
		P	C136	Water in Terrestrial Environment/3	ESPM C130
		P	C139	Atmospheric Physics and Dynamics/3	EPS C181
		P	140A	Physical Landscapes: Process and Form/4	
		P	140B	Physiography and Geomorphologic Extremes	
		P	C141	Paleoclimatology/4	EPS C141
B			142	Climate Dynamics/4	
B		P	143	Global Change and Biogeochemistry/4	
		P	144	Principles of Meteorology/4	
		P	C145	Geological Oceanography/4	EPS C146
B			148	Biogeography/4	
		P	180	Field Methods for Physical Geography/5	
		P	183	Cartographic Representation/4	
		P	184	Topographic Map Analysis/4	

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B	S	P	C188	Geographic Information Systems/4	Land Arch C188
			History		
	S		120AC	American Environmental and Cultural History/4	ESPM 160AC
			Integrative Biology		
B		P	C100	Communicating Ocean Science/2	EPS C100
B			C101/L	Diversity of Plants and Fungi/2,2	Plant Bio
B			102/L	Introduction to California Plant Life/2,2	
B			103/L	Invertebrate Zoology/3,2	
B			104/L	Natural History of the Vertebrates/3,2	
B			106	Biological Oceanography/3	
B		P	106A	Physical and Chemical Environment of the Ocean/4	
B			106L	Laboratory in Biological Oceanography/2	
B	S		117/L	Medical Ethnobotany/2,2	
B			C144	Animal Behavior/4	Psychology
B			146	Behavioral Ecology/3	
B			C149L	Molecular Ecology /2,2	ESPM C149
B			151/L	Plant Physiological Ecology/3,1	
B			152	Marine Pollution/4	
B			153/L	Population and Community Ecology/3,3	
B			154/L	Plant Population and Community Ecology/3,2	
B			C156	Principles of Conservation Biology/4	ESPM C103
B			157L	Ecosystems of California/4	
B			C158	Biology and Geomorphology of Tropical Islands/13	ESPM C107
B			160	Evolution	
B			162	Ecological Genetics/4	
B			C163	Survey of General Genetics/4	MCB C142
B			168/L	Systematics of Vascular Plants/2,2	
B			173/L	Mammalogy/2,3	
B			174/L	Ornithology/2,2	
B			175/L	Herpetology/2,2	
			Landscape Architecture		
B	S		110	Ecological Analysis/4	
		P	120	Topographic Form and Design Technology/2	
B	S	P	C188	Geographic Information Systems/4	Geog C188
			Letters & Science (L&S)		
	S	P	170AC	Crossroads of Earth Resources and Society/4	EPS 106AC
			Mathematics		
		P	121A	Mathematical Tools for Phys. Sciences/4	
		P	121B	Mathematical Tools for Phys. Sciences/4	
			Mechanical Engineering		
		P	106	Fluid Mechanics/3	
			Molecular and Cell Biology (MCB)		
B			102	Survey of the Principles of Biochemistry and Molecular Biology/4	
B			C112/L	General Microbiology/4,2	Plant Bio
B			C114	Introduction to Comparative Virology/4	ESPM C138, Plant Bio C114
B			C116	Microbial Diversity/3	Plant Bio C116
B			C142	Survey of General Genetics/4	IC C163
			Nutritional Sciences and Toxicology (NST)		
B			110	Food Toxicology/3	
B			113	Food Microbiology/2	
B			C119	Toxicology/3	Public Health
			Plant Biology		
B			C102/L	Diversity of Plants and Fungi/2,2	IB C101/L
B			110/L	Biology of Fungi/2,2	
B			C112/L	General Microbiology/4,2	MCB C112/L
B			C114	Introduction to Comparative Virology	ESPM C138,
B			C116	Microbial Diversity/3	MCB C116
B			120/L	Biology of Algae/2,2	
B			180	Environmental Plant Biology/2	
			Psychology		

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B			C115B	Animal Behavior/4	IB C144
			Public Health		
B	S		140	Introduction to Risk and Demographic Statistics/4	
B			150A	Introduction to Epidemiology/3	
B			150B	Introduction to Environmental Health Sciences/3	
B			162A/L	Public Health Microbiology/3,1	
B			C170B	Toxicology/3	NST C119
		P	171	Air Pollution/3	
			Public Policy		
	S		158	Risk & Uncertainty in Public Policy/3	
			Sociology		
	S		C126	Population Issues/4	Demography
	S		128AC	Environmental Justice: Race, Class, Equity, and the Env/3	ESPM 163AC