ECOLOGICAL MANAGEMENT & RESTORATION, BACHELOR OF SCIENCE

College of Agricultural & Environmental Sciences

As of Fall 2022, the Ecological Management & Restoration major is no longer accepting new students. It has been absorbed into the Plant Sciences major (https://catalog.ucdavis.edu/departments-programs-degrees/plant-sciences/plant-science-bs/**) as an area of specialization.**

The Major Program

This major is designed for students who are interested in understanding how to manage and restore wildland and rangeland plant communities. Courses are selected to provide an interdisciplinary background that encompasses ecology, applied plant biology, and the social sciences. Students will acquire a core understanding of natural and managed ecosystems and how they function, interact with the natural environment, are connected with human society and social change, and are restored and managed.

The Program

The curriculum provides depth in the ecological and botanical sciences directed toward an integrated understanding of how communities and ecosystems function and how this knowledge can assist in their management and restoration. Courses in environmental policy and law expose the students to the social drivers and constraints of ecosystem management. All students gain practical experience through practical field courses and a required internship. Students may also pursue an Honors thesis in their senior year.

Major Advisor

Advising Center for the major is located in 1220 Plant & Environmental Sciences; plsadvising@ucdavis.edu

Career Alternatives

Graduates from this program are prepared to pursue a wide range of careers, including positions in ecological restoration and ecosystem management; rangeland and reserve management; environmental consulting; public, private, or non-profit agencies concerned with restoration and natural resource management; Cooperative Extension; teaching; information and communication services. Graduates are qualified to pursue advanced studies in fields such as ecology, agroecology, environmental studies, geography or weed science.

Code	Title	Units
Preparatory Subject Matter		
Biological Science		
BIS 002A	Introduction to Biology: Essentials of Life on Earth	5
BIS 002B	Introduction to Biology: Principles of Ecology & Evolution	5
BIS 002C	Introduction to Biology: Biodiversity & the Tree of Life	5
Chemistry		
CHE 002A	General Chemistry	5
CHE 002B	General Chemistry	5
Physics		
Choose a series:		6-12
PHY 001A & PHY 001B	Principles of Physics and Principles of Physics	
PHY 007A & PHY 007B & PHY 007C	General Physics and General Physics and General Physics	
Mathematics		
Choose a series:		6-8
MAT 016A & MAT 016B	Short Calculus and Short Calculus	
MAT 017A & MAT 017B	Calculus for Biology & Medicine and Calculus for Biology & Medicine	
MAT 021A & MAT 021B	Calculus and Calculus	
Plant Science		
PLS 120	Applied Statistics in Agricultural Sciences	4
Soil Science		
SSC 100	Principles of Soil Science	5
PLS 101	Agriculture & the Environment	3-4
or ESP 001	Environmental Analysis	
Preparatory Subject Matter Subtotal		49-58
Depth Subject Matter		
Environmental Horticulture		
ENH 160	Restoration Ecology	4
ENH 160L	Restoration Ecology Laboratory	1
Plant Science		
PLS 176	Introduction to Weed Science	4
Soil Science		
Choose one:		3-5
SSC 102	Environmental Soil Chemistry	
SSC 105	Field Studies of Soils in California Ecosystems	
SSC 111	Soil Microbiology	
SSC 118	Soils in Land Use & the Environment	
SSC 120	Soil Genesis, Morphology, & Classification	
PLS 152	Plant Genetics	3-4
or ENH 150	Genetics & Plant Conservation: The Biodiversity Crisis	
Choose two ecology courses:		5-8
ESP 155	Wetland Ecology	
PLB/EVE 117	Plant Ecology	
PLS 131	(Discontinued)	
PLS/ESM 144	Trees & Forests	
PLS 147	California Plant Communities	
WFC 156	Plant Geography	
WFC 157	Coastal Ecosystems	
Choose one:		4-5
EVE 100	Introduction to Evolution	
PLB/EVE 108	Systematics & Evolution of Angiosperms (Discontinued)	
PLS/PLB 102	California Floristics (Discontinued)	
PLS/PLB 116	Plant Morphology & Evolution	

Choose four restoration/conservation courses:		11-16
PLS 130	Grassland Ecology	
PLS 135	Ecology & Community Structure of Grassland & Savannah Herbivores (Discontinued)	
PLS 150	Sustainability & Agroecosystem Management	
ESM 141	Role of Fire in Natural Ecosystems	
ESP 127	Plant Conservation Biology	
ESP 155L	Wetland Ecology Laboratory	
WFC 154	Conservation Biology	
WFC 155	Wildlife Space Use & Habitat Conservation	
WFC 155L	Habitat Conservation & Restoration Laboratory	
Choose one:		3-4
ESM 100	Principles of Hydrologic Science	
HYD 143	Ecohydrology	
HYD/EBS 147	Runoff, Erosion & Water Quality Management	
HYD 151	Field Methods in Hydrology	
PLS 171	Principles & Practices of Plant Propagation	3-4
or ENH 120	Management of Container Media	
PLS 100C	Environmental Interactions of Cultivated Plants	3-4
or PLS 163	Ecosystem & Landscape Ecology	
PLB 111	Plant Physiology	3
or PLS 100A	Metabolic Processes of Cultivated Plants	
Environmental Science & Policy		
Choose one:		4
ESP 160	The Policy Process	
ESP 161	Environmental Law	
ESP 171	Urban & Regional Planning	
ESP 172	Public Lands Management	
ESP 179	Environmental Impact Assessment	
Internship		
Must be selected in consultation with master advisor.		
PLS 164	(Discontinued)	1
PLS 192	Internship	1
In addition to the required coursework listed above, students might consider taking some of the following courses:		
ENT 107	California Insect Diversity	
HYD 124	Plant-Water-Soil Relationships	
LDA/ABT 150	Introduction to Geographic Information Systems	
PLS 135	Ecology & Community Structure of Grassland & Savannah Herbivores (Discontinued)	
PLS 141	Ethnobotany	
PLS 158	Mineral Nutrition of Plants	
PLS 162	Urban Ecology	
SAS 018	GIS & Society	
SSC 109	Sustainable Nutrient Management	

Depth Subject Matter Subtotal	53-68
Total Units	**102-126**