

# Ecology, Biodiversity & Conservation

## Why study ecology, biodiversity, and conservation?

The Ecology, Biodiversity and Conservation Track aims to give students a broad ecological training that prepares them to be field ecologists, organismal biologists (biodiversity specialists) or conservation specialists. It trains students for working for public agencies or private companies, and serves as preparation for graduate school in a variety of environmental biology disciplines. A series of foundation courses are required, including upper division statistics, physical environmental sciences, public policy, evolution, genetics, biogeography, and a field course for hands on field experience of hypothesis testing in nature. The track then allows students to specialize in options in Organismal Biology and Biodiversity, Ecology, or Conservation. UC-Davis has more ecologists than any other institution in the World, and this track draws on this rich human resource.



## Preparatory Subject Matter Requirements

Preparatory Subject Matter		Quarter(s) Offered	Units	Completed	Notes
<b>Written and Oral Expression</b>					
UWP 101, 102A-G, 104A-F	Upper Division Writing	I, II, III, IV	4	_____	<u>May test out of requirement</u> <u>UWP 102G, Env Writing, offered I, III</u>
CMN 1, 3, or DRA 10	Public Speaking	I, II, III, IV	4	_____	_____
<b>Biological Sciences</b>					
BIS 2A	Essentials of Life on Earth	I, II, III, IV	5	_____	_____
BIS 2B	Principles of Ecology and Evolution	I, II, III, IV	5	_____	_____
BIS 2C	Biodiversity and the Tree of Life	I, II, III, IV	5	_____	_____
<b>Geology</b>					
<i>Choose one of the following</i>					
GEL 1	The Earth	I, II, III	4	_____	_____
GEL 50 (recommended)	Physical Geology	I, II, III	3	_____	_____
<b>Chemistry</b>					
CHE 2A or 2AH	General Chemistry	I, II, IV	5	_____	_____
CHE 2B or 2BH	General Chemistry	II, III, IV	5	_____	_____
CHE 2C or 2CH (recommended, not required)	General Chemistry	I, III, IV	5	_____	_____
<b>Physics</b>					
<i>Complete either 1AB or 7ABC</i>					
PHY 1A	General Physics	I, II, IV	3	_____	_____
PHY 1B	General Physics	II, III	3	_____	_____
PHY 7A	General Physics	I, II, III, IV	4	_____	_____
PHY 7B	General Physics	I, II, III, IV	4	_____	_____
PHY 7C	General Physics	I, II, III, IV	4	_____	_____
<b>Economics</b>					
ECN 1A	Principles of Microeconomics	I, II, III, IV	4	_____	_____
<b>Mathematics</b>					
MAT 16A, 17A, or 21A	Calculus	I, II, III, IV	3-4	_____	<u>MAT 17AB recommended</u>
MAT 16B, 17B, or 21B	Calculus	I, II, III, IV	3-4	_____	_____
<b>Environmental Science and Policy</b>					
ESP 1	Environmental Analysis	I	4	_____	_____

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\*Course is offered in odd years only (2017, 2019, etc.)

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## Core Subject Matter Requirements

NOTE: Students graduating with this major are required to attain at least a C average (2.0 GPA) in all courses taken at the university in Depth Subject Matter *and* pass all coursework. See requirements of the College of Agriculture & Environmental Science in the UC Davis General Catalog.

Depth Subject Matter	(29-32 Units)	Prerequisites	Qtr(s)	Units	Completed
<b>Global Environment</b>					
ESM 120	Global Environmental Interactions	One college-level chemistry and biology course	II	4	_____
<b>Ecology</b>					
<i>(Choose one of the following)</i>					
ESP 100	General Ecology	BIS 2A-C and MAT 16A-B, STA 13 recommended	I, III, IV	4	_____
EVE 101	Introduction to Ecology	BIS 2A-C and MAT 16A-B or the equivalent	I, II, III, IV	4	_____
<b>Policy</b>					
ESP 162	Environmental Policy	ECN 1A	II	4	_____
<b>Statistics</b>					
<i>(Choose one of the following – Statistics 100 recommended)</i>					
STA 13	Elementary Statistics	Two years of high school algebra or equivalent in college	I, II, III, IV	4	_____
STA 100	Applied Statistics for Biological Sciences	MAT 16B or the equivalent	I, II, III, IV	4	_____
<b>Environmental Monitoring</b>					
<i>(Choose one of the following)</i>					
ESM 108	Environmental Monitoring	Entry level course in the environmental sciences	III	3	_____
ESP 179	Environmental Impact Assessment	Upper division standing, one course in environmental science	II, IV	4	_____
<b>GIS Technology</b>					
ABT/LDA 150	Introduction to GIS	PLS 21 or equivalent with consent of instructor	I, III	4	_____
<b>Internship</b>					
ESM/ESP 192	Internship	Upper division standing, permission of instructor Variable unit – must take at least 3 units of internship May complete internship in a different area with prior approval (e.g.: PLS, SSC, ATM)	I, II, III, IV	3	_____
<b>Capstone</b>					
ESM 195	Integrating Env Science & Management	Senior standing; Environmental science major (e.g.: ESM, EPAP, ETX, WFC)	III	2	_____
<b>Honors Thesis (Optional)</b>					
ESM 194H	Senior Honors Thesis	Senior standing, Overall GPA of 3.50 or higher; Consent of the master adviser		2-6	_____

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## Ecology, Biodiversity, & Conservation

Required Courses		Prerequisites	Qtr(s)	Units	Completed
<b>Select one physical processes course</b>					
ATM 60	Introduction to Atmospheric Science	MAT 16A or 21A and PHY 1A, 7A, or 9A	I	4	_____
ATM 116**	Climate Change	UWP 1 and Consent of instructor	III	4	_____
ATM 133	Biometeorology	One biological course and MAT 16B or consent of instructor	II	4	_____
ESM 121	Water Science & Management	PHY 10 or GEL 1	III	3	_____
ESM 131	Air as a Resource	CHE 10	II	3	_____
ESP 152	Coastal Oceanography	Acceptance into the Bodega Marine Lab summer program	IV	3	_____
SSC 100	Principles of Soil Science	CHE 2A-B, PHY 1A-B, BIS 2A; GEL 50, BIS 2C recommended	I	5	_____
GEL 134 <sup>†</sup>	Env Geology & Land Use Planning	One course in Geology or consent of instructor		3	_____
<b>Select one environmental policy course</b>					
ESP 170*	Conservation Biology Policy	ESP 1, ECN 1A; ECN 100 or ARE 100A recommended	III	4	_____
ESP 171	Urban & Regional Planning	ESP 1	III	4	_____
ESP 172	Public Lands Management	ECN 1A	I	4	_____
ESP 179	Environmental Impact Assessment	Upper division standing; one course in environmental science	II, IV	4	_____
SOC 160	Sociology of the Environment	Upper division standing in Sociology strongly recommended	II	4	_____
<b>Complete</b>					
EVE 100	Introduction to Evolution	BIS 2A-C; BIS 101; MAT 16A-C or equiv; STA 13 or 100	I, II, III, IV	4	_____
<b>Complete</b>					
WFC 154	Conservation Biology	EVE 101 or ESP 100 or equivalent	I	4	_____
<b>Select one field experience course</b>					
BIS 124	Coastal Marine Research	Acceptance into the Bodega Marine Lab summer program	IV	3	_____
ENH 160/L	Restoration Ecology & Fieldwork	PLB/EVE 117 or EVE 121 or PLS 147 or the equivalent	III	3/1	_____
ESP 123**	Intro to Field & Lab Methods in Ecology	ESP 100 or equivalent; STA 102 or equivalent	III	4	_____
EVE 180A*	Exp Ecology & Evolution in the Field	EVE 100; ESP 100 or EVE 101; ENT 105	II	4	_____
PLS 147/L	California Plant Communities & Fieldwork	PLS 2 or BIS 2C	III	3/1	_____
WFC 100	Field Methods in Wildlife, Fish, & Cons. Bio	EVE 101 or ESP 100 or equivalent; consent of instructor	III	4	_____
<b>Select one population ecology course</b>					
ESP 121	Population Ecology	BIS 2B-C; MAT 16A-B	II	4	_____
WFC 122	Population Dynamics and Estimation	MAT16A-B; STA13 or equivalent; ESP 100 or equivalent	III	4	_____
<b>Select one community ecology course</b>					
ESP 151	Limnology	Upper division standing; BIS 2A	III	4	_____
ESP 155	Wetland Ecology	ESP 100 or PLB 117; ESP 110 or 151 recommended	I	4	_____
EVE 115*	Marine Ecology	ESP 100, EVE 101, or BIS 2B	II	4	_____
EVE 181**	Animal-Plant Interaction	BIS 2B and 2C, BIS 2C may be taken concurrently	I	4	_____
PLB/EVE 117	Plant Ecology	BIS 2A-C; PLB 111 recommended	I	4	_____
WFC 155 <sup>†</sup>	Habitat Conservation & Restoration	ESP 100 or EVE 101; WFC 154 and ENH 160 recommended		3	_____

<sup>†</sup>Future availability unknown

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## Ecology, Biodiversity, & Conservation (Cont.)

Required Courses	Prerequisites	Qtr(s)	Units	Completed	
<b>Select one ecosystems course</b>					
ENH 160	Restoration Ecology	PLB/EVE 117 or EVE 121 or PLS 147 or the equivalent	III	3	_____
EVE 147*	Biogeography	BIS 2B	I	4	_____
PLS 162	Urban Ecology	Course in general or plant ecology	II	3	_____
<b>Select one biome level course</b>					
ESM/PLS 144	Trees & Forests	PLS 2 or BIS 2C	I	4	_____
ESP 150C	Biological Oceanography	Acceptance into the Bodega Marine Lab summer program	IV	4	_____
ESP 151	Limnology	Upper division standing; BIS 2A	III	4	_____
ESP 155	Wetland Ecology	ESP 100 or PLB 117; ESP 110 or 151 recommended	I	4	_____
EVE 115*	Marine Ecology	ESP 100, EVE 101, or BIS 2B	II	4	_____
EVE 138*	Ecology of Tropical Latitudes	One course in BIS, ENT, WFC, or GEO, or consent of the instructor	III	5	_____
PLS 130**	Rangelands: Ecology, Cons, & Restoration	BIS 2C; intro ecology course & upper div standing recommended	II	3	_____
<b>Select one organismal biology course</b>					
ENT 103**	Insect Systematics	Introductory course in zoology or entomology	III	3	_____
ENT 116	Freshwater Macroinvertebrates	BIS 2B or equivalent	III	3	_____
EVE 112**	Biology of Invertebrates	BIS 2B-C; courses in systematics, ecology, & evolution recommended	II	4	_____
EVE 114	Experimental Invertebrate Biology	Acceptance into the Bodega Marine Lab summer program	IV	3	_____
PLB/PLS 102 <sup>‡</sup>	California Floristics	PLS 2 or BIS 2C or equivalent	III	5	_____
PLB 116 <sup>‡</sup>	Plant Morphology & Evolution	BIS 2A-C; plant anatomy (e.g.: PLB 105) recommended	II	5	_____
PLB/EVE 119 <sup>‡</sup>	Population Bio of Invasive Plants & Weeds	BIS 2A-C; elementary statistics course recommended	III	3	_____
WFC 110	Biology & Conservation of Wild Mammals	BIS 2A-C; EVE 101 or ESP 100 or equivalent	III	3	_____
WFC 111	Biology & Conservation of Wild Birds	BIS 2A-C; EVE 101 or ESP 100 or equivalent	I	3	_____
WFC 120	Biology & Conservation of Fishes	BIS 2A-C	I	3	_____
WFC 134*	Herpetology	BIS 2A-C; EVE 101, ESP 100 or equivalent rec.	II	3	_____
<b>Select one biome or organismal biology lab course</b>					
ENT 116L	Aquatic Insect Collection	High school biology recommended	III	2	_____
ESP 155L	Wetland Ecology Laboratory	Summer Abroad Only	IV	3	_____
EVE 112L**	Biology of Invertebrates: Lab	EVE 112 concurrently	II	2	_____
EVE 180B*	Exp Ecology & Evolution in the Field	EVE 180A, EVE 100; ESP 100 or EVE 101; ENT 105	III	4	_____
WFC 110L	Biology & Cons of Wild Mammals Lab	WFC 110 (may be concurrent); consent of instructor	III	3	_____
WFC 111L	Biology & Conservation of Wild Birds Lab	WFC 111 (may be concurrent); consent of instructor	I	3	_____
WFC 120L	Biology & Cons of Fishes Lab	WFC 120 (may be concurrent)	I	2	_____
WFC 134L*	Herpetology Laboratory	WFC 134 concurrently	II	2	_____
ESP 151L <sup>†</sup>	Limnology Laboratory	ESP 151 concurrently		3	_____

<sup>‡</sup>These are combined lecture and lab courses, an additional lab is not required if you complete one of these courses

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