

Natural Resource Management

Why study natural resource management?

This track has a strong social science focus. It assumes that most environmental problems are fundamentally caused by mistakes in human behavior, and that better scientific information is but one of many factors affecting our ability to solve environmental problems. Reflecting that successful environmental managers operate at the junction of overlapping natural and social systems, students supplement ESM's core curriculum in the physical and biological sciences with work in resource economics, law, planning, and public policy. It is geared towards those who are interested in working in policy-oriented roles in environmental affairs. Typical career tracks include working for federal, state or local natural resources agencies, environmental consulting firms, governmental liaison offices of private corporations, or non-profit organizations addressing environmental issues. Many graduates of this track also go to professional or graduate school in law, environmental policy, natural resources management, regional planning, public policy, or related fields.



Preparatory Subject Matter Requirements

Preparatory Subject Matter		Quarter(s) Offered	Units	Completed	Notes
Written and Oral Expression					
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	_____	_____
Biological Sciences					
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	_____	_____
Geology					
<i>Choose one of the following</i>					
GEL 1	The Earth	I, II, III	4	_____	_____
GEL 50 (recommended)	Physical Geology	I, II, III	3	_____	_____
Chemistry					
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	_____	_____
Physics					
<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	_____	_____
Economics					
ECN 1A	Principles of Microeconomics	I, II, III, IV	4	_____	_____
Mathematics					
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	_____	_____
Environmental Science and Policy					
ESP 1	Environmental Analysis	I	4	_____	_____

I = fall quarter, II = winter quarter, III = spring quarter, IV = summer session

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

**Course is offered in even years only (2016, 2018, etc.)

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
Global Environment					
ESM 120	Global Environmental Interactions	One college-level chemistry and biology course	II	4	_____
Ecology					
<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	_____
Policy					
ESP 162	Environmental Policy	ECN 1A	II	4	_____
Statistics					
<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	_____
Environmental Monitoring					
<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	_____
GIS Technology					
ABT/LDA 150	Introduction to GIS	PLS 21 or equivalent with consent of instructor	I, III	4	_____
Internship					
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	_____
Capstone					
ESM 195	Integrating Env Science & Management	Senior standing; Environmental science major (e.g.: ESM, EPAP, ETX, WFC)	III	2	_____
Honors Thesis (Optional)					
ESM 194H	Senior Honors Thesis	Senior standing, Overall GPA of 3.50 or higher; Consent of the master adviser		2-6	_____

I = fall quarter, II = winter quarter, III = spring quarter, IV = summer session

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

**Course is offered in even years only (2016, 2018, etc.)

Natural Resource Management

Required Courses	Prerequisites	Qtr(s)	Units	Completed	
Select three environmental policy courses					
ESP 160	The Policy Process	POL 1; ECN 1A; intermediate statistics	III	4	_____
ESP 165N	Climate Policy	ECN 1A, ESP 1, or consent of instructor	III	3	_____
ESP 166N**	Ocean & Coastal Policy	ESP 1 or consent of instructor	II	3	_____
ESP 167**	Energy Policy	ECN 1A; MAT 16B, 17B, or 21B; or consent of instructor	III	4	_____
ESP 168A	Methods of Env Policy Evaluation	STA 13; ECN 100 or ARE 100A; MAT 16B, 17B, or 21B; ESP 1	I	5	_____
ESP 169**	Water Policy & Politics	POL 1 or ECN 1A	III	3	_____
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	_____
Select one environmental law course					
ESP 161	Environmental Law	Upper division standing; one course in environmental science; POL 1 and UWP 1 recommended	III, IV	4	_____
HYD 150	Water Law	ESM 100 or 121 or consent of instructor	II	3	_____
Complete					
STA 103	Applied Stats for Business & Economics	STA 13, 32, 100, or 102; MAT 16A-B	I, II, III, IV	4	_____
Select two biological processes courses					
ENT 104	Behavioral Ecology of Insects	Introductory biology or zoology	II	3	_____
ESM 141**	Fire Ecology	BIS 2A or PLS 2, BIS 2B or 2C	II	4	_____
ESM/PLS 144	Trees & Forests	PLS 2 or BIS 2C	I	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	_____
PLB/EVE 117	Plant Ecology	BIS 2A-C; PLB 111 recommended	I	4	_____
PLS 130**	Rangelands: Ecology, Cons, & Restoration	BIS 2C; intro ecology course & upper div standing recommended	II	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	_____
Select two physical processes courses					
ATM 116**	Climate Change	UWP 1; Consent of instructor	III	4	_____
ESM 121	Water Science & Management	PHY 10 or GEL 1	III	3	_____
ESM 131	Air as a Resource	CHE 10	II	3	_____
SSC 100	Principles of Soil Science	CHE 2A-B, PHY 1A-B, BIS 2A; GEL 50, BIS 2C recommended	I	5	_____
Select one remote sensing course					
ESM 185	Aerial Photo Interpretation & Remote Sensing	Upper division standing	I	4	_____
ESM 186	Environmental Remote Sensing	MAT 16B; PHY 7C or 9B; ABT 150 rec.; upper division standing	II	5	_____

I = fall quarter, II = winter quarter, III = spring quarter, IV = summer session

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

**Course is offered in even years only (2016, 2018, etc.)