Conservation Biology and Ecology Option

The Conservation Biology and Ecology option will give students a clear understanding of the ways that natural and human-related processes affect species, communities, and ecosystems, and relate this knowledge to its broad societal context. This option provides students with strong preparation for graduate study which is necessary for most jobs in Ecology and Conservation Biology. The defining characteristics of the degree include:

- Understanding natural and human-related processes that affect populations, species, communities, and ecosystems
- Understanding methods to quantify and mitigate effects on populations, species, communities and ecosystems
- Strong emphasis on background in basic biology
- Required grounding in courses on physical environment & human dimensions of conservation, including economics, law, history and social science
- High standards for statistical knowledge
- Emphasis on classes in written and spoken communication

Freshman Year	Credits	
	Fall	Spring
BIOE 103CS - Environmental Science and Society	3	
BIOB 170IN - Principles of Biological Diversity	4	
CHMY 141 - College Chemistry I & CHMY 142 - College Chemistry I Lab	4	
COMX 111US - Introduction to Public Speaking or CLS 101US - Knowledge and Community	3	
University Core or Electives	0-3	
PHSX 205 - College Physics I		4
M 161Q - Survey of Calculus		4
WRIT 101W - College Writing I		3
BIOB 160 - Principles of Living Systems (Chem pre-req)		4
University CORE or Additional Electives		0-3
Year Total:	14-17	15-18

Sophomore Year	Credits	
	Fall	Spring
STAT 216Q - Introduction to Statistics	3	
CHMY 143 - College Chemistry II & CHMY 144 - College Chemistry II Lab	4	
ENSC 110 - Land Resources and Environmental Sciences	3	
WRIT 201 - College Writing II or WRIT 221 - Intermediate Tech Writing	3	
ECNS 101IS - Economic Way of Thinking	3	
BIOB 375 - General Genetics		3
CHMY 211 - Elements of Organic Chemistry & CHMY 212 - Elements of Organic Chemistry Lab		5
ERTH 101IN - Earth System Sciences		4
STAT 337 - Intermediate Statistics with Introduction to Statistical Computing		3
Year Total:	16	15

Junior Year	Credits	
	Fall	Spring
Take one of the following:	3-5	
ENSC 245IN - Soils		
BCH 380 - Biochemistry & BCH 381 - Biochemistry Lab		
STAT 411 - Methods for Data Analysis I	3	
Take one of the following:	0-3	
BIOO 412 - Animal Physiology (3, Fall only)		
BIOO 433 - Plant Physiology (3, Spring only)		
Social Sciences Elective	3	
University CORE and Additional Electives	3	
BIOE 370 - General Ecology		3
BIOB 420 - Evolution		3
Social Sciences Elective		3
University CORE or Additional Electives		3-6
Year Total:	12-17	12-15

Senior Year	Credits	
	Fall	Spring
BIOE 440R - Conservation Biology	3	
Directed Electives*	3-6	
University CORE or Additional Electives	3-6	
BIOE 375 - Ecological Responses to Climate Change		3
Directed Electives*		3-6
University CORE and Additional Electives		9-12
Year Total:	9-15	15-21
Total Program Credits:		**120**

Directed Electives

Choose 6 credits from the following:		
BIOE 405	Behavioral and Evolutionary Ecology	3
BIOE 408	Rocky Mountain Vegetation	3
BIOE 416	Alpine Ecology	3
BIOE 420	Field Ornithology	3
BIOE 421	Yellowstone Wildlife Ecology	3
BIOE 428	Freshwater Ecology	3
BIOE 445	Macrosystems Ecology: Linking Plants, Animals, and Ecosystems Across Scales	3
BIOE 455	Plant Ecology	3
BIOO 415	Ichthyology	3
BIOO 470	Ornithology	3
BIOO 475	Mammalogy	3
ENSC 410R	Biodiversity Survey and Monitoring Methods	3

* Check course prerequisites and terms offered (BIOO 415, BIOO 470, and BIOO 475 require BIOO 310, fall only)

Social Sciences Elective Block

A minimum of six (6) credits of electives must be taken in the social sciences, including subjects such as economics, sociology, political science, history, philosophy, or language. It is acceptable to select electives broadly or to focus them in one area. The intention is to develop a better understanding of the ways that conservation biology and ecology are related to broader issues in society, and to develop additional areas of expertise that are useful in the formulation and implementation of conservation policy. If

any of the courses selected have the IS suffix, they will simultaneously satisfy a requirement of the University CORE. Classes may be lower or upper division.

Suggested Electives for the Conservation Biology and Ecology Option

University requirements for graduation also must be completed, including university core requirements and a minimum of 120 total credits of which 42 must be in courses numbered 300 and above. The classes listed above satisfy university core requirements except that you must also take one class each for the Diversity, Arts and Humanities requirements (courses with suffixes of D, A and H). Some of the suggested electives meet these core requirements. The curriculum above completes 37-41 credits numbered 300 and above (including 6 credits in the Social Sciences elective block.). You have some flexibility in the classes that you select to fill your Junior and Senior years. It is intended that you use these credits to develop strength in an area of emphasis that matches your interests and goals. We recommend that you consult the list of suggested electives below and speak to your advisor.

Ecology and Evolution:		
BIOE 405	Behavioral and Evolutionary Ecology	3
BIOE 408	Rocky Mountain Vegetation	3
BIOM 415	Microbial Diversity, Ecology, and Evolution	3
BIOE 428	Freshwater Ecology	3
BIOO 435	Plant Systematics	3
BIOB 484	Population Genetics	3
Environmental Science:		
ENSC 245IN	Soils	3
ENSC 272CS	Water Resources	3
ENSC 353	Environmental Biogeochemistry	3
ENSC 410R	Biodiversity Survey and Monitoring Methods	3
ENSC 448	Stream Restoration Ecology	3
ENSC 465	Environmental Biophysics	3
ENSC 468	Ecosystem Biogeochem and Global Change	3
Fish & Wildlife Management:		
WILD 301	Princ of Fish & Wildlife Mgmt	3
Geography and Earth Science:		
ERTH 212RN	Yellowstone: Scientific Lab	4
ERTH 303	Weather and Climate	3
GPHY 284	Intro to GIS Science & Cartog	3
GPHY 411	Biogeography	3
GPHY 426	Remote Sensing	3
Statistics and Logic:		
STAT 412	Methods for Data Analysis II	3
PHL 236Q	Logic	3
Social Sciences:		
ECNS 317	Economic Development	3