RANGELAND SCIENCES UNDERGRADUATE MAJOR (BS, HBS)

This major offers the following option(s):

- Habitat Management (http://catalog.oregonstate.edu/college-departments/agricultural-sciences/animal-rangeland-sciences/rangeland-sciences-bs-hbs/habitat-management-option/)
- Pastoral Systems of the World (http://catalog.oregonstate.edu/college-departments/agricultural-sciences/animal-rangeland-sciences/rangeland-sciences-bs-hbs/pastoral-systems-world-option/)
- Sustainable Livestock Ranching (http://catalog.oregonstate.edu/college-departments/agricultural-sciences/animal-rangeland-sciences/rangeland-sciences-bs-hbs/sustainable-livestock-ranching-option/)
- Sustainable Rangeland Ecosystem Stewardship (http://catalog.oregonstate.edu/college-departments/agricultural-sciences/animal-rangeland-sciences/rangeland-sciences-bs-hbs/sustainable-rangeland-ecosystem-stewardship-option/)

Also available at LaGrande and via Ecampus.

Rangeland sciences is about the study and sustainable management of rangelands across a variety of biomes, from arid deserts, to mesic grasslands, to tropical savannahs. The program takes an interdisciplinary approach to provide advanced scientific knowledge regarding multiple ecological processes and social drivers influencing rangeland ecosystems around the globe. Students gain the skills and knowledge needed to deeply understand and effectively manage rangelands for improved productivity and enhanced ecosystem resilience. The end goal is that students graduating from the program will be able to integrate contemporary rangeland ecology and management principles into a systems-based decision-making framework that promotes ecological resilience, sustainable societies, and thriving economies in socioecological rangeland ecosystems.

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- Identify a subset of up to 100 rangeland plants. Correctly spell both common and scientific names. Describe plant species ecological characteristics.
- Students will demonstrate knowledge of appropriate use and competency using common Rangeland Analysis methods.
- Design a sustainable grazing management plan, a wildlife habitat restoration plan, or address a specific related issue using a systems approach.
- Demonstrate knowledge of the hydrologic cycle and describe the factors that influence hydrology in arid/semi-arid environments.
- Students will demonstrate understanding of ecological processes responsible for ecosystem function in arid/semi-arid environments.

Departmental requirements may be utilized to satisfy baccalaureate core and non-departmental minor requirements.

Code	Title	Credits
Baccalaureate Core [1]		
Select 51 credits		51
Skills Courses		
Fitness		
HHS 231	*LIFETIME FITNESS FOR HEALTH	
HHS 241	*LIFETIME FITNESS (or PAC course)	
Mathematics		
Met with Rangeland Sciences General Sciences, Math and Statistics		
Speech		
COMM 111	*PUBLIC SPEAKING	
or COMM 114	*ARGUMENT AND CRITICAL DISCOURSE	
or COMM 218	*INTERPERSONAL COMMUNICATION	
Writing I		
WR 121	*ENGLISH COMPOSITION (Must be taken in first 45 credits)	
Writing II		
WR 327	*TECHNICAL WRITING	
Perspective Courses [2]		
Biological Science (Lecture/Lab)		
Cultural Diversity (CD)		
Literature and the Arts (LA)		
Physical Science (Lecture/Lab or Lab)		
Social Processes and Institutions (SPI)		
Western Culture (WC)		
Difference, Power, and Discrimination Courses (DPD)		
Synthesis Courses [4]		
Contemporary Global Issues (CGI)		
Science, Technology, and Society (STS)		
Writing Intensive Course (WIC)		
Select one course from the following:		
AG 421	^WRITING IN AGRICULTURE	
ANS 420	^ETHICAL ISSUES IN ANIMAL AGRICULTURE	
ENSC 479	^ENVIRONMENTAL CASE STUDIES	
FW 435	^WILDLIFE IN AGRICULTURAL ECOSYSTEMS	
Rangeland Science Base Program		
Fundamentals of Rangeland Ecology		
RNG 121	*INTRODUCTION TO WILDLAND ECOLOGY	4
RNG 341	RANGELAND ECOLOGY AND MANAGEMENT	3
RNG 351	RANGE ECOLOGY I-GRASSLANDS	3
RNG 352	RANGE ECOLOGY II-SHRUBLANDS	3
Methods and Management		
RNG 421	WILDLAND RESTORATION AND ECOLOGY	4
RNG 441	RANGELAND ANALYSIS	4
RNG 442	RANGELAND-ANIMAL RELATIONS	4
RNG 490	RANGELAND MANAGEMENT PLANNING	4
Plants		
BOT 331	PLANT PHYSIOLOGY	4
BOT 341	PLANT ECOLOGY	4
RNG 353	WILDLAND PLANT IDENTIFICATION	4
Soil		
Select one of the following options:		4
SOIL 205 & SOIL 206	SOIL SCIENCE and *SOIL SCIENCE LABORATORY FOR SOIL 205	
CSS 205	*SOIL SCIENCE	
Select one course from the following:		
SOIL 366	ECOSYSTEMS OF WILDLAND SOILS	
SOIL 466	SOIL MORPHOLOGY AND CLASSIFICATION	
Water		
RNG 355	DESERT WATERSHED MANAGEMENT	4
RNG 455	RIPARIAN ECOHYDROLOGY AND MANAGEMENT	4
Socio-Economic		
Select one course from the following:		3
AEC 351	*NATURAL RESOURCE ECONOMICS AND POLICY	
AEC 352/ECON 352	*ENVIRONMENTAL ECONOMICS AND POLICY	
Select one course from the following:		4

ANTH 466	*RURAL ANTHROPOLOGY	
SOC 381	SOCIAL DIMENSIONS OF SUSTAINABILITY	
SOC 475	RURAL SOCIOLOGY	
SOC 480	ENVIRONMENTAL SOCIOLOGY	
SOC 481	*SOCIETY AND NATURAL RESOURCES	
Animals		
ANS 313	APPLIED ANIMAL NUTRITION: FEEDS AND RATION FORMULATION	0,4
Select one course from the following:		
ANS 436	SHEEP PRODUCTION SYSTEMS	
ANS 445	BEEF PRODUCTION SYSTEMS	
ANS 446	GRAZING LIVESTOCK PRODUCTION	
ANS 448/CROP 448/RNG 448	LIVESTOCK PRODUCTION ON PASTURE	
Other Animals		
FW 255	FIELD SAMPLING OF FISH AND WILDLIFE	3
RNG 457	HABITAT ANALYSIS 1: HABITAT USE AND MOVEMENT	3
General Science, Math and Statistics		
Select one of the following biology series:		12
Series 1		
BI 221 & BI 222 & BI 223	*PRINCIPLES OF BIOLOGY: CELLS and *PRINCIPLES OF BIOLOGY: ORGANISMS and *PRINCIPLES OF BIOLOGY: POPULATIONS	
Series 2		
BI 204 & BI 205 & BI 206	*INTRODUCTORY BIOLOGY I and *INTRODUCTORY BIOLOGY II and *INTRODUCTORY BIOLOGY III	
CH 121 & CH 122 & CH 123	GENERAL CHEMISTRY and *GENERAL CHEMISTRY and *GENERAL CHEMISTRY	15
MTH 241	*CALCULUS FOR MANAGEMENT AND SOCIAL SCIENCE	4
ST 201	PRINCIPLES OF STATISTICS	4
or ST 351	INTRODUCTION TO STATISTICAL METHODS	
Option or Minor		
Select one of four Rangeland Sciences options or a minor of your choice		27-32
Total credits required for graduation is 180		

* Baccalaureate Core Course (BCC)

^ Writing Intensive Course (WIC)

1 Certain classes may be used to satisfy both the baccalaureate core and the rangeland ecology and management core

2 No more than two courses (or lecture/lab combinations) from any one department may be used by a student to satisfy the Perspectives category of the core

3 Please reference the baccalaureate core course catalog (http://catalog.oregonstate.edu/earning-degrees/bcc/) for a list of approved courses

4 The two courses used to fulfill the Synthesis requirement may not be in the same department

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Sample On-Campus 4 Year Plan

First Year

Fall		**Credits**
WR 121	*ENGLISH COMPOSITION	3
CH 121	GENERAL CHEMISTRY	5
HHS 231 or HHS 241	*LIFETIME FITNESS FOR HEALTH or *LIFETIME FITNESS	2
RNG 121	*INTRODUCTION TO WILDLAND ECOLOGY	4
	Credits	14

Winter

COMM 111 or COMM 114 or COMM 218	*PUBLIC SPEAKING (Bacc Core) or *ARGUMENT AND CRITICAL DISCOURSE or *INTERPERSONAL COMMUNICATION	3
CH 122	*GENERAL CHEMISTRY	5
MTH 111	*COLLEGE ALGEBRA	4
Bacc Core: Lit. & Arts		3
	Credits	15

Spring

Bacc Core: Western Cult ure		3
AEC 250	*INTRODUCTION TO ENVIRONMENTAL ECONOMICS AND POLICY (Bacc Core SPI)	3
CH 123	*GENERAL CHEMISTRY	5
SOIL 205 & SOIL 206	SOIL SCIENCE and *SOIL SCIENCE LABORATORY FOR SOIL 205	4
	Credits	15

Second Year

Fall

BI 221	*PRINCIPLES OF BIOLOGY: CELLS	4
Bacc Core: Cultural Diversity		3
MTH 241	*CALCULUS FOR MANAGEMENT AND SOCIAL SCIENCE	4
RNG 341	RANGELAND ECOLOGY AND MANAGEMENT	3
Elective/Option/Minor		2
	Credits	16

Winter

BI 222	*PRINCIPLES OF BIOLOGY: ORGANISMS	4
WR 327	*TECHNICAL WRITING (Bacc Core)	3
BOT 331	PLANT PHYSIOLOGY	4
ST 201 or ST 351	PRINCIPLES OF STATISTICS or INTRODUCTION TO STATISTICAL METHODS	4
	Credits	15

Spring

BI 223	*PRINCIPLES OF BIOLOGY: POPULATIONS	4
Bacc Core DPD		3
BOT 341	PLANT ECOLOGY	4
RNG 353	WILDLAND PLANT IDENTIFICATION	4
	Credits	15

Third Year

Fall

ANS 445	BEEF PRODUCTION SYSTEMS	4
AEC 351	*NATURAL RESOURCE ECONOMICS AND POLICY (Bacc Core Global)	3
FW 251	PRINCIPLES OF FISH AND WILDLIFE CONSERVATION	3
RNG 441	RANGELAND ANALYSIS	4
	Credits	14

Winter

ANTH 466	*RURAL ANTHROPOLOGY	4
RNG 352	RANGE ECOLOGY II-SHRUBLANDS	3
RNG 442	RANGELAND-ANIMAL RELATIONS	4
SOIL 366	ECOSYSTEMS OF WILDLAND SOILS	3
Elective/Option/Minor		2
	Credits	16

Spring

ANS 313	APPLIED ANIMAL NUTRITION: FEEDS AND RATION FORMULATION	4
Bacc Core STS		4
RNG 351	RANGE ECOLOGY I-GRASSLANDS	3
RNG 355	DESERT WATERSHED MANAGEMENT	4
	Credits	15

Fourth Year

Fall

RNG 421	WILDLAND RESTORATION AND ECOLOGY	4
RNG 455	RIPARIAN ECOHYDROLOGY AND MANAGEMENT	4

RNG 457	HABITAT ANALYSIS 1: HABITAT USE AND MOVEMENT	3
Elective/Option/Minor		4
	Credits	15
Winter		
AG 421 or ANS 420 or FW 435	^WRITING IN AGRICULTURE or ^ETHICAL ISSUES IN ANIMAL AGRICULTURE or ^WILDLIFE IN AGRICULTURAL ECOSYSTEMS	3
Elective/Option/Minor		12
	Credits	15
Spring		
RNG 490	RANGELAND MANAGEMENT PLANNING	4
Elective/Option/Minor		11
	Credits	15
	Total Credits	180

Sample Online 4 Year Plan

First Year		
Fall		**Credits**
WR 121	*ENGLISH COMPOSITION	3
CH 121	GENERAL CHEMISTRY	5
HHS 231 or HHS 241	*LIFETIME FITNESS FOR HEALTH or *LIFETIME FITNESS	2
RNG 121	*INTRODUCTION TO WILDLAND ECOLOGY	4
	Credits	14
Winter		
COMM 111 or COMM 114 or COMM 218	*PUBLIC SPEAKING (Bacc Core) or *ARGUMENT AND CRITICAL DISCOURSE or *INTERPERSONAL COMMUNICATION	3
CH 122	*GENERAL CHEMISTRY	5
MTH 111	*COLLEGE ALGEBRA	4
Bacc Core: Lit. & Arts		3
	Credits	15
Spring		
Bacc Core: Western Culture		3
AEC 250	*INTRODUCTION TO ENVIRONMENTAL ECONOMICS AND POLICY (Bacc Core SPI)	3
CH 123	*GENERAL CHEMISTRY	5
CSS 205	*SOIL SCIENCE	4
	Credits	15
Second Year		
Fall		
BI 204	*INTRODUCTORY BIOLOGY I	4
Bacc Core: Cultural Diversity		3
MTH 241	*CALCULUS FOR MANAGEMENT AND SOCIAL SCIENCE	4
RNG 341	RANGELAND ECOLOGY AND MANAGEMENT	3
Elective/Option/Minor		2
	Credits	16
Winter		
BI 205	*INTRODUCTORY BIOLOGY II	4
WR 327	*TECHNICAL WRITING (Bacc Core)	3
BOT 331	PLANT PHYSIOLOGY	4
ST 201 or ST 351	PRINCIPLES OF STATISTICS or INTRODUCTION TO STATISTICAL METHODS	4
	Credits	15
Spring		
BI 206	*INTRODUCTORY BIOLOGY III	4
Bacc Core DPD		3
BOT 341	PLANT ECOLOGY	4
RNG 353	WILDLAND PLANT IDENTIFICATION	4
	Credits	15
Third Year		
Fall		
ANTH 466	*RURAL ANTHROPOLOGY	4
AEC 351	*NATURAL RESOURCE ECONOMICS AND POLICY (Bacc Core Global)	3
FW 251	PRINCIPLES OF FISH AND WILDLIFE CONSERVATION	3
RNG 441	RANGELAND ANALYSIS	4
Elective/Option/Minor		4
	Credits	18
Winter		
ANS 446	GRAZING LIVESTOCK PRODUCTION	4
RNG 352	RANGE ECOLOGY II-SHRUBLANDS	3
RNG 442	RANGELAND-ANIMAL RELATIONS	4
SOIL 366	ECOSYSTEMS OF WILDLAND SOILS	3
	Credits	14
Spring		
ANS 313	APPLIED ANIMAL NUTRITION: FEEDS AND RATION FORMULATION	4
Bacc Core STS		3
RNG 351	RANGE ECOLOGY I-GRASSLANDS	3
RNG 355	DESERT WATERSHED MANAGEMENT	4
	Credits	14
Fourth Year		
Fall		
RNG 421	WILDLAND RESTORATION AND ECOLOGY	4
RNG 455	RIPARIAN ECOHYDROLOGY AND MANAGEMENT	4
RNG 457	HABITAT ANALYSIS 1: HABITAT USE AND MOVEMENT	3
Elective/Option/Minor		4
	Credits	15
Winter		
AG 421 or ANS 420 or FW 435	^WRITING IN AGRICULTURE or ^ETHICAL ISSUES IN ANIMAL AGRICULTURE or ^WILDLIFE IN AGRICULTURAL ECOSYSTEMS	3
Elective/Option/Minor		12
	Credits	15
Spring		
RNG 490	RANGELAND MANAGEMENT PLANNING	4
Elective/Option/Minor		10
	Credits	14
	Total Credits	180