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/)

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.

Major Code: 292

- 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.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HHS 231</td>
<td>*LIFETIME FITNESS FOR HEALTH</td>
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<tr>
<td>HHS 241</td>
<td>*LIFETIME FITNESS (or PAC course)</td>
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<tr>
<td>Mathematics</td>
<td></td>
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<tr>
<td>Met with Rangeland Sciences General Sciences, Math and Statistics</td>
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<tr>
<td>Speech</td>
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<tr>
<td>COMM 111</td>
<td>*PUBLIC SPEAKING</td>
<td>4</td>
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<tr>
<td>or COMM 114</td>
<td>*ARGUMENT AND CRITICAL DISCOURSE</td>
<td>4</td>
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<tr>
<td>or COMM 218</td>
<td>*INTERPERSONAL COMMUNICATION</td>
<td>4</td>
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<tr>
<td>Writing I</td>
<td></td>
<td></td>
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<tr>
<td>WR 121</td>
<td>*ENGLISH COMPOSITION (Must be taken in first 45 credits)</td>
<td>4</td>
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<tr>
<td>Writing II</td>
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<tr>
<td>WR 327</td>
<td>*TECHNICAL WRITING</td>
<td>4</td>
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Perspective Courses 4

- 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 (OPD)

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 | 4
- ANS 420 | *ETHICAL ISSUES IN ANIMAL AGRICULTURE | 4
- ENSC 479 | **ENVIRONMENTAL CASE STUDIES | 4
- FW 435 | *WILDLIFE IN AGRICULTURAL ECOSYSTEMS | 4

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 | 4
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 SCIENCE | 4
& SOIL 206 | and *SOIL SCIENCE LABORATORY FOR SOIL 205 | 4
CSS 205 | *SOIL SCIENCE | 4

Select one course from the following:

SOIL 366 | ECOSYSTEMS OF WILDLAND SOILS | 3
SOIL 466 | SOIL MORPHOLOGY AND CLASSIFICATION | 4

Water

RNG 355 | DESERT WATERSHED MANAGEMENT | 4
RNG 455 | RIPARIAN ECOHYDROLOGY AND MANAGEMENT | 4

Socio-Economic

Select one course from the following:

AEC 351 | *NATURAL RESOURCE ECONOMICS AND POLICY | 3
AEC 352/ECON 352 | *ENVIRONMENTAL ECONOMICS AND POLICY | 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

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
RNG 457  HABITAT ANALYSIS 1: HABITAT USE AND MOVEMENT

General Science, Math and Statistics
Select one of the following biology series:
Series 1
BI 221  *PRINCIPLES OF BIOLOGY: CELLS
& BI 222  and *PRINCIPLES OF BIOLOGY: ORGANISMS
& BI 223  and *PRINCIPLES OF BIOLOGY: POPULATIONS
Series 2
BI 204  *INTRODUCTORY BIOLOGY I
& BI 205  and *INTRODUCTORY BIOLOGY II
& BI 206  and *INTRODUCTORY BIOLOGY III
CH 121  GENERAL CHEMISTRY
& CH 122  and *GENERAL CHEMISTRY
& CH 123  and *GENERAL CHEMISTRY
MTH 241  *CALCULUS FOR MANAGEMENT AND SOCIAL SCIENCE
ST 201  PRINCIPLES OF STATISTICS
or ST 351  INTRODUCTION TO STATISTICAL METHODS

Option or Minor
Select one of four Rangeland Sciences options or a minor of your choice

Total credits required for graduation is 180

* Baccalaureate Core Course (BCC)
- Writing Intensive Course (WIC)

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

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

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

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

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

Total 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

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

Total credits 16

Sample On-Campus 4 Year Plan

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

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

Total credits 16

Major Code: 292
**Rangeland Sciences Undergraduate Major (BS, HBS)**

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### First Year

**Fall**
- WR 121 *ENGLISH COMPOSITION*  
- CH 121 GENERAL CHEMISTRY  
- HHS 231 or HHS 241 *LIFETIME FITNESS FOR HEALTH*  
- RNG 121 *INTRODUCTION TO WILDLAND ECOLOGY*  

**Winter**
- COMM 111 or COMM 114 *PUBLIC SPEAKING (Bacc Core)*  
- CH 122 *GENERAL CHEMISTRY*  
- MTH 111 *COLLEGE ALGEBRA*  
- Bacc Core: Lit. & Arts  

### Second Year

**Fall**
- BI 204 *INTRODUCTORY BIOLOGY I*  
- CH 241 *CALCULUS FOR MANAGEMENT AND SOCIAL SCIENCE*  
- RNG 341 RANGELAND ECOLOGY AND MANAGEMENT  

**Winter**
- BI 205 *INTRODUCTORY BIOLOGY II*  
- WR 271 *TECHNICAL WRITING (Bacc Core)*  
- BOT 331 PLANT PHYSIOLOGY  

### Third Year

**Fall**
- ANTH 466 *RURAL ANTHROPOLOGY*  
- AEC 351 *NATURAL RESOURCE ECONOMICS AND POLICY (Bacc Core Global)*  
- RNG 341 RANGELAND ANALYSIS  

**Winter**
- RNG 352 RANGELAND ANIMAL RELATIONS  
- SOIL 366 ECOSYSTEMS OF WILDLAND SOILS  

### Fourth Year

**Fall**
- RNG 421 WILDLAND RESTORATION AND ECOLOGY  
- RNG 455 RIPARIAN ECOHYDROLOGY AND MANAGEMENT  
- RNG 457 HABITAT ANALYSIS 1: HABITAT USE AND MOVEMENT  

**Winter**
- AG 421 or ANS 420 *WRITING IN AGRICULTURE*  
- RNG 490 RANGELAND MANAGEMENT PLANNING  

### Credits

- Total Credits: 180

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### Sample Online 4 Year Plan

**First Year**

**Fall**
- WR 121 *ENGLISH COMPOSITION*  
- CH 121 GENERAL CHEMISTRY  
- HHS 231 or HHS 241 *LIFETIME FITNESS FOR HEALTH*  
- RNG 121 *INTRODUCTION TO WILDLAND ECOLOGY*  

**Winter**
- COMM 111 or COMM 114 *PUBLIC SPEAKING (Bacc Core)*  
- CH 122 *GENERAL CHEMISTRY*  
- MTH 111 *COLLEGE ALGEBRA*  
- Bacc Core: Lit. & Arts  

**Second Year**

**Fall**
- BI 204 *INTRODUCTORY BIOLOGY I*  
- CH 241 *CALCULUS FOR MANAGEMENT AND SOCIAL SCIENCE*  
- RNG 341 RANGELAND ECOLOGY AND MANAGEMENT  

**Winter**
- BI 205 *INTRODUCTORY BIOLOGY II*  
- WR 271 *TECHNICAL WRITING (Bacc Core)*  
- BOT 331 PLANT PHYSIOLOGY  

**Third Year**

**Fall**
- ANTH 466 *RURAL ANTHROPOLOGY*  
- AEC 351 *NATURAL RESOURCE ECONOMICS AND POLICY (Bacc Core Global)*  
- RNG 341 RANGELAND ANALYSIS  

**Winter**
- RNG 352 RANGELAND ANIMAL RELATIONS  
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**Fourth Year**

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**Credits**

- Total Credits: 180

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**Sample Online 4 Year Plan**

**First Year**

**Fall**
- WR 121 *ENGLISH COMPOSITION*  
- CH 121 GENERAL CHEMISTRY  
- HHS 231 or HHS 241 *LIFETIME FITNESS FOR HEALTH*  
- RNG 121 *INTRODUCTION TO WILDLAND ECOLOGY*  

**Winter**
- COMM 111 or COMM 114 *PUBLIC SPEAKING (Bacc Core)*  
- CH 122 *GENERAL CHEMISTRY*  
- MTH 111 *COLLEGE ALGEBRA*  
- Bacc Core: Lit. & Arts  

**Second Year**

**Fall**
- BI 204 *INTRODUCTORY BIOLOGY I*  
- CH 241 *CALCULUS FOR MANAGEMENT AND SOCIAL SCIENCE*  
- RNG 341 RANGELAND ECOLOGY AND MANAGEMENT  

**Winter**
- BI 205 *INTRODUCTORY BIOLOGY II*  
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**Third Year**

**Fall**
- ANTH 466 *RURAL ANTHROPOLOGY*  
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**Winter**
- RNG 352 RANGELAND ANIMAL RELATIONS  
- SOIL 366 ECOSYSTEMS OF WILDLAND SOILS  

**Fourth Year**

**Fall**
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**Credits**

- Total Credits: 180