NATURAL RESOURCES UNDERGRADUATE MAJOR (BS, HBS)

This major offers the following option(s):

- Conservation Law Enforcement (http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/conservation-law-enforcement-option/)
- Ecological Restoration (http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/ecological-restoration-option/)
- Fish and Wildlife Conservation (http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/fish-wildlife-conservation-option/)
- Forest Ecosystems (http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/forest-ecosystems-option/)
- Human Dimensions in Natural Resources (http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/human-dimensions-natural-resources-option/)
- Individualized Specialty (http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/individualized-specialty-option/)
- Integrated Conservation Analysis (http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/integrated-conservation-analysis-option/)
- Landscape Analysis (http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/landscape-analysis-option/)
- Natural Resource Education (http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/natural-resource-education-option/)
- Policy and Management (http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/policy-management-option/)
- Urban Forest Landscapes (http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/urban-forest-landscapes-option/)
- Wildland Fire Ecology (http://catalog.oregonstate.edu/college-departments/forestry/forest-ecosystems-society/natural-resources-bs-hbs/wildland-fire-ecology-option/)

Also available at OSU-Cascades and via Ecampus.

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Students who graduate with a BS degree in Natural Resources from OSU should be able to integrate technical field or laboratory skills with analytical skills to solve critical natural resource problems. The curriculum is designed to help students acquire knowledge about a range of natural resource issues, work in interdisciplinary teams, and deal with social and political aspects of resource management.

Students acquire knowledge in biophysical and social sciences, math, and statistics. They will learn holistic resource management approaches that emphasize the interconnectedness of humans and the environment. In addition, students will develop a toolbox of resource management skills such as communication, collaboration, analysis, assessment, and planning. They explore conservation and management of key resources which include fish and wildlife, land and water resources, and a wide range of ecosystems from forests to rangelands. Students develop disciplinary depth in a focused area through a required specialty option, choosing from a number of pre-approved options, or creating an individualized (student designed) specialty option.

The Natural Resources major is also available at the OSU-Cascades campus in Bend and through the OSU Ecampus program. The Natural Resources major is an interdisciplinary program administered by the College of Forestry.

Major Code: 671

- Describe ecological processes, including human impacts that influence ecosystem change, natural succession and the future sustainability of natural resources.
- Characterize natural resources and be able to quantify at least one of these resources.
- Envision desired future conditions in an area to achieve a set of natural resource-related objectives, prescribe management actions needed to achieve those objectives, and evaluate success of these actions.
- Describe how the use, management, and allocation of natural resources are affected by laws, policies, economic factors (both market and non-market), and characteristics (including demographic, cultural, ethnic, and “values” differences) of private and public resource owners and users.
- Communicate effectively, orally and in writing, with audiences of diverse backgrounds.
- Work effectively with, and within, interdisciplinary and diverse groups to resolve management problems and achieve management objectives.

Only two courses used to complete the Natural Resources major requirements may be taken S/U.

The Natural Resources Specialty option requires a minimum GPA of 2.25.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FES 485</td>
<td>*CONSENSUS AND NATURAL RESOURCES</td>
<td>3</td>
</tr>
<tr>
<td>NR 201</td>
<td>MANAGING NATURAL RESOURCES FOR THE FUTURE</td>
<td>3</td>
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<tr>
<td>NR 455</td>
<td>NATURAL RESOURCE DECISION MAKING</td>
<td>4</td>
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</table>

Advanced Communication (3-4 credits)

Select one course from the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>COMM 321</td>
<td>INTRODUCTION TO COMMUNICATION THEORY</td>
</tr>
<tr>
<td>COMM 322</td>
<td>SMALL-GROUP PROBLEM SOLVING</td>
</tr>
<tr>
<td>COMM 324</td>
<td>COMMUNICATION IN ORGANIZATIONS</td>
</tr>
<tr>
<td>COMM 326</td>
<td>INTERCULTURAL COMMUNICATION</td>
</tr>
<tr>
<td>COMM 328</td>
<td>NONVERBAL COMMUNICATION</td>
</tr>
<tr>
<td>COMM 385</td>
<td>COMMUNICATION AND CULTURE IN CYBERSPACE</td>
</tr>
<tr>
<td>COMM 440</td>
<td>THEORIES OF CONFLICT AND CONFLICT MANAGEMENT</td>
</tr>
<tr>
<td>COMM 442</td>
<td>BARGAINING AND NEGOTIATION PROCESSES</td>
</tr>
</tbody>
</table>
Select one course from the following:

- Statistics (4 credits)
- Mathematics (4 credits)
- Mathematics and Statistics (8 credits)
- Earth or Soil Science (4 credits)
- Climate Science (3-4 credits)
- Biological Sciences (27-29 credits)

**Biological Sciences (27-29 credits)**

Select one group of courses from the following:

- Biology (12 credits)
- Chemistry (5 credits)
- Climate Science (3-4 credits)

**Biology (12 credits)**

Select one group of courses from the following:

1. BI 101
   - *ENVIRONMENTAL BIOLOGY: ECOLOGY, CONSERVATION, GLOBAL CHANGE
   - and *ANIMAL BIOLOGY: GENES, BEHAVIOR AND EVOLUTION OF LIFE
   - and *HUMAN BIOLOGY: ANATOMY, PHYSIOLOGY AND DISEASE
2. BI 204
   - *INTRODUCTORY BIOLOGY I
   - & BI 205
   - and *INTRODUCTORY BIOLOGY II
   - & BI 206
   - and *INTRODUCTORY BIOLOGY III
3. BI 221
   - *PRINCIPLES OF BIOLOGY CELLS
   - & BI 222
   - and *PRINCIPLES OF BIOLOGY ORGANISMS
   - & BI 223
   - and *PRINCIPLES OF BIOLOGY POPULATIONS

**Chemistry (5 credits)**

Select one of the following:

- CH 121
  - GENERAL CHEMISTRY
- CH 231
  - GENERAL CHEMISTRY
- CH & CH 261
  - and *LABORATORY FOR CHEMISTRY 231

**Climate Science (3-4 credits)**

Select one course from the following:

1. ATS 201
   - *CLIMATE SCIENCE
2. FW 345
   - *GLOBAL CHANGE BIOLOGY
3. GEOG 323
   - *CLIMATOLOGY
4. SUS 103
   - *INTRODUCTION TO CLIMATE CHANGE

**Earth or Soil Science (4 credits)**

Select one course from the following:

1. CSS 205
   - *SOIL SCIENCE
2. CSS 305
   - *PRINCIPLES OF SOIL SCIENCE
3. GEO 101
   - *THE SOLID EARTH
4. GEO 201
   - *PHYSICAL GEOLOGY
5. GEO 202
   - *EARTH SYSTEMS SCIENCE
6. GEO 221
   - *ENVIRONMENTAL GEOLOGY
7. GEOG 102
   - *PHYSICAL GEOGRAPHY
8. SOIL 205
   - SOIL SCIENCE
9. FOR 206
   - & FOREST SOILS LABORATORY FOR SOIL 205 (or SOIL 206) 2

**Ecology (3-4 credits)**

Select one course from the following:

1. BI 351
   - MARINE ECOLOGY
2. BI 370
   - ECOLOGY
3. BIOT 341
   - PLANT ECOLOGY
4. FES 341
   - FOREST ECOLOGY

**Mathematics and Statistics (8 credits)**

**Mathematics (4 credits)**

Select one course from the following:

1. MTH 112
   - *ELEMENTARY FUNCTIONS
2. MTH 241
   - *CALCULUS FOR MANAGEMENT AND SOCIAL SCIENCE
3. MTH 245
   - *MATHMATICS FOR MANAGEMENT, LIFE, AND SOCIAL SCIENCES
4. MTH 251
   - *DIFFERENTIAL CALCULUS

**Statistics (4 credits)**

Select one course from the following:

1. ST 201
   - PRINCIPLES OF STATISTICS
2. ST 351
   - INTRODUCTION TO STATISTICAL METHODS

**Resource Management (23–33 credits)**

Animal ID (2-4 credits)

Select one course from the following:

1. FES 412
   - FOREST ENTOMOLOGY
2. FW 312
   - SYSTEMATICS OF BIRDS
3. FW 316
   - SYSTEMATICS OF FISHES
4. FW 318
   - SYSTEMATICS OF MAMMALS
5. Z 365
   - BIOLOGY OF INSECTS
6. Z 473
   - HERPETOLOGY
7. Z 477
   - AQUATIC ENTOMOLOGY

Environmental Assessment and Planning (3-4 credits)

Select one course from the following:

1. FES 445/FW 445
   - ECOCLOGICAL RESTORATION
2. FW 462
   - ECOSYSTEM SERVICES
3. GEOG 250
   - *LAND USE PLANNING FOR SUSTAINABLE COMMUNITIES
4. GEOG 450
   - LAND USE IN THE AMERICAN WEST
5. GEOG 451
   - PLANNING PRINCIPLES AND PRACTICES FOR RESILIENT COMMUNITIES
6. GEOG 452
   - SUSTAINABLE SITE PLANNING
7. RNG 421
   - WILDLAND RESTORATION AND ECOLOGY
8. RNG 490
   - RANGELAND MANAGEMENT PLANNING
9. SUS 304
   - *SUSTAINABILITY ASSESSMENT
10. SUS 350
    - *SUSTAINABLE COMMUNITIES

Fisheries and Marine Sciences (3-4 credits)

Select one course from the following:

1. BI 150
   - INTRODUCTION TO MARINE BIOLOGY
2. BI 347
   - *OCEANS IN PERIL
3. BI 351
   - MARINE ECOLOGY
4. FW 302
   - BIOLOGY AND CONSERVATION OF MARINE MAMMALS
5. FW 320
   - INTRODUCTORY POPULATION DYNAMICS
6. FW 323
   - MANAGEMENT PRINCIPLES OF PACIFIC SALMON IN THE NORTHWEST
7. FW 426
   - COASTAL ECOLOGY AND RESOURCE MANAGEMENT
8. FW 454
   - *FISHERY BIOLOGY
9. FW 465
   - MARINE FISHERIES
10. FW 473
    - FISH ECOLOGY
11. FW 481
    - WILDLIFE ECOLOGY
12. OC 201
    - *OCEANOGRAPHY
13. OC 332
    - COASTAL OCEANOGRAPHY

Forestry (3-4 credits)

Select one course from the following:

1. FE 456/FOR 456
   - *INTERNATIONAL FORESTRY
2. FES 240
   - *FOREST BIOLOGY
3. FES 341
   - FOREST ECOLOGY
4. FES 342
   - FOREST TYPES OF THE NORTHWEST
5. FES 350/HORT 350
   - URBAN FORESTRY
6. FES 440
   - WILDLAND FIRE ECOLOGY
7. FES 445/FW 445
   - ECOCLOGICAL RESTORATION
8. FES 452/FW 452
   - BIODIVERSITY CONSERVATION IN MANAGED FORESTS
9. FES 477/NR 477
   - *AGROFORESTRY
10. FOR 346
    - TOPICS IN WILDLAND FIRE
11. FOR 441
    - SILVICULTURE PRINCIPLES

Land and Water (3-5 credits)

Select one course from the following:

1. FE 430
   - WATERSHED PROCESSES
Select one course from the following:

- Ethics and Philosophy (3-4 credits)
- Social and Political Dimensions (15–20 credits)

Select one course from the following:

- Wildlife Management (3-4 credits)
- Vegetation ID (3-4 credits)

Select one course from the following:

- Range (3-4 credits)
- Spatial Analysis (3-4 credits)

Select one course from the following:

- Political Issues (3-4 credits)

Select one course from the following:

- Natural Resources Policy (3-4 credits)

Select one course from the following:

- Economics

Select one course from the following:

- Social Issues (3-4 credits)

Select one course from the following:

- Ethics and Philosophy (3-4 credits)

Select one course from the following:

- Natural Resources Undergraduate Major (BS, HBS)
Select one course from the following: 3-4
- CROP 414/HORT 414, PRECISION AGRICULTURE
- FE 257, GIS AND FOREST ENGINEERING APPLICATIONS
- FW 303, SURVEY OF GEOGRAPHIC INFORMATION SYSTEMS IN NATURAL RESOURCE
- GEOG 201, *FOUNDATIONS OF GEOSPATIAL SCIENCE AND GIS
- GEOG 360, GISCIENCE I: GEOGRAPHIC INFORMATION SYSTEMS AND THEORY

Total credits required for graduation is 180 3

Baccalaureate Core Course (BCC)
1 The BI 2XX series is required for some specialty options.
2 SOIL 205 is a Bacc Core course only when taken in conjunction with a laboratory course (FOR 206 or SOIL 206)
3 Completion of an option is required to earn a degree in Natural Resources

Major Code: 671

First Year

Fall Credits
Chemistry 5
Mathematics 4
WR 121, *ENGLISH COMPOSITION 3
HHS 231, *LIFETIME FITNESS FOR HEALTH 2

Credits 14

Winter

NR 201, MANAGING NATURAL RESOURCES FOR THE FUTURE 3
Climate Science 4
Bacc Core: Speech 3
Political Issues 4

Credits 14

Spring

Earth or Soil Science 4
Social Issues 4
Bacc Core: Physical Activity 1
Writing II 3
Bacc Core: Western Culture 3

Credits 15

Second Year

Fall
Biology I with Lab 4
Statistics 4
Ethics & Philosophy 4
Bacc Core: Cultural Diversity 3

Credits 15

Winter
Biology II with lab 4
Spatial Analysis 4
Economics 4
Bacc Core: Literature & The Arts 3

Credits 15

Spring
Biology III with lab 4
Vegetation ID 3
Forestry 4
Bacc Core: Literature & The Arts 3

Credits 14

Third Year

Fall
Ecology 4
Animal Identification 3
Fisheries & Marine Sciences 4
Specialty Option Course 4

Credits 15

Winter
Range 3
Advanced Communication 4
Wildlife Management 4
Specialty Option Course 4

Credits 15

Spring
Environmental Assessment & Planning 4
Spatial Analysis 4
Specialty Option Course 4
Specialty Option Course 4

Credits 15

Fourth Year

Fall
Land & Water 4
Natural Resources Policy 4
Specialty Option Course 4
Specialty Option Course 4

Credits 16

Winter
FES 485, *CONSENSUS AND NATURAL RESOURCES 3
Specialty Option Course 4
Specialty Option Course 4

Credits 15

Spring
NR 455, NATURAL RESOURCE DECISION MAKING 4
Specialty Option Course 4
Specialty Option Course 4
Electives 4

Credits 16

Total Credits 180