

Natural Resources Advising Guide

OSU-Cascades

In this guide:

- Understanding the Natural Resources major.
- University requirements
- NR Major Checklist (including Bacc Core, NR Core, Breath, Specialty Options)
- COCC Transfer Course information

Maintaining the integrity of the Earth's ecosystems is a key challenge of the 21st century. Increasing human population continues to place greater demands on our limited resources. Students in the Natural Resources program at Oregon State University gain an understanding of complex biophysical, social, and cultural systems shaping natural resource management.

With this degree program students will:

- Study an interdisciplinary curriculum based in agricultural sciences, forestry, liberal arts, and science.
- Learn about the social and political components of resource management.
- Begin preparation for a career in ecological restoration, fish and wildlife conservation, forest ecosystem science, natural resource planning, human dimensions, natural resource policy, watershed management, analysis of complex environmental problems, or other natural resources professions.

Recent program graduates are working as natural resource specialists and planners with state and federal agencies, working with non-profit conservation groups, managing lands for private entities, attending law school, training/working as teachers in K-12 education, and pursuing graduate degrees in a variety of disciplines.

Curriculum Overview

The Bachelor of Science in Natural Resources curriculum consists of four blocks of study.

Baccalaureate Core - A standard set of courses that are required for all Oregon State University students

Natural Resources Core - Foundational courses that will give you a solid background in sciences, math, and policy. Minimum GPA for this block is 2.0.

Natural Resources Breadth - Upper division (300-400) courses that will broaden your knowledge of the field of Natural Resources. Minimum GPA for this block is 2.0.

Natural Resources Specialty Option - Focused areas of study that will tailor your degree to your career interests and goals. Minimum GPA for this block is 2.25

MyDegrees

Oregon State University uses an online degree audit system to help you track your progress toward your degree. Take some time to familiarize yourself with the tools and information provided by this system. The MyDegrees system will automatically apply baccalaureate courses and courses that fit in the Natural Resources Specialty Option. Courses in the NR Core and Breadth will need to be manually applied by the Advisor as you complete each term. It's helpful if you can let your advisor know which requirement you would like the class applied to as some courses can fit in multiple areas. If you ever see something missing or in a place you didn't expect contact your advisor directly for assistance.

Requirements for Graduation

In addition to the University and degree program requirements, students in the **Natural Resources program** must also meet specific requirements to graduate.

Minimum GPA met for each block in the major – 2.0 for the NR Core and Breadth, 2.25 for the specialty option. A cumulative OSU GPA of 2.0 is required for graduation.

S/U Grading - The Natural Resources Program allows up to two total S/U graded courses in the Core, Breadth, or Option. *Please see advisor for details.*

Double Counting - Courses may be double counted between the Baccalaureate Core and the Natural Resource Core, Breadth, or Option. Courses may NOT be double counted within the Natural Resource Major. Courses are also allowed to be double counted in a minor.

University Graduation Requirements -

180 – The number of quarter credits necessary to graduate from OSU.

60 - Minimum upper division (300-400 level) credits required to graduate from OSU.

124 - The maximum number of credits that can be transferred from a community college.

45 - of your last 75 credits must be earned at OSU OR you must have at least 150 credits from OSU (Academic Residency Requirement)

Natural Resources OSU-Cascades

CURRICULUM GUIDE CHECKLIST: B.S. IN NATURAL RESOURCES ~

University Graduation Requirements:

- 180 college credits
- 60 of the 180 credits must be Upper Division
- 45 out of the last 75 credits in your degree must be from OSU

NR Graduation requirements:

- NR major consists of: The Baccalaureate Core, Natural Resources Core, Natural Resources Breadth, and a Specialty Option (see list below)
- **Courses CANNOT double count in the NR Core, Breath, and Option.**
- Only 2 courses may be taken S/U in the major
- NR Core and Breath minimum GPA 2.0
- Specialty Option minimum GPA 2.25

BACCALAUREATE CORE

Students who have completed an AAOT degree have completed Skills and Perspectives sections of the Bacc Core
Use the Bacc Core course guide for course options for each requirement.

X = courses fulfilled with major requirements

Skills (15)

grade	term	course	
___	___	___	Writing I (3) (WR 121)
___	___	___	Writing II (3)
___	___	___	Speech (3)
___	X	MTH	Mathematics (3) (Satisfied by MTH req. in NR Core)
___	___	___	Fitness (3)

Perspectives (24) (No more than two Perspectives courses from same dept.)

grade	term	course	
___	X	GEO	Physical Science (including lab) (4) (Satisfied by Earth Science)
___	X	BIO	Biological Science (including lab) (4) (Satisfied by BI 101 or 211)
___	X	BIO	Physical/Biological Science (including lab) (4) (Satisfied by BI 102 or 212)
___	___	___	Western Culture (3)
___	___	___	Cultural Diversity (3)
___	___	___	Literature and the Arts (3)
___	X	EC 201	Social Processes and Institutions (3) (satisfied by ECON 201)
___	x	GEO 309 or FW 340	Difference, Power, & Discrimination (satisfied by GEO309 or FW 340)

Synthesis (6) (Synthesis courses may not be from same department)

grade	term	course	
___	X	FES 365	Contemporary Global Issues (3) (satisfied by SUS 350 or FES 365)
___	X	FW 350	Science, Technology, and Society (3) (satisfied by FW 350, or GEOG 340)

WIC

grade	term	course	
___	X	ENSC 479	Writing Intensive Course (3) (satisfied by BI 371, or ENSC 479)

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NATURAL RESOURCES CORE (72-80 credits)

- GPA 2.0 minimum
- Courses below are all taught at the OSU-Cascades Campus. Not all courses are taught each term or each year. Students must work utilize forecast course planning tools to create an academic plan. Students are responsible check pre-reqs for each course.

Animal ID (2-4cr)

Choose one course from below:

FW 312 Systematics of Birds
FW 318 Systematics of Mammals

Atmospheric Science (4cr)

SUS 103 (4) Intro. to Climate Change

Biology (12-15cr)

Choose 1 sequence below:

BI 101, BI 102, BI 103: General Biology
or BI 211, BI 212, BI 213: Principles of Biology

***HIGHLY SUGGEST to complete BI 211-213**

Chemistry (5cr)

Choose one course from below:

CH 121: Intro Chemistry (5)
CH 231/261: Gen Chem (5)

Communications (3cr)

Choose one OSU course from below:

COMM 321: Introduction to Communication Theory
COMM 328: Nonverbal Communication

Earth Science (4cr)

GEO 201: Physical Geology

Environmental Assessment and Planning (4cr)

Choose one course from below:

FES 445: Ecological Restoration *Pre-req Ecology
SUS 304: Sustainability Assessment
SUS 350: Sustainable Communities

General Ecology (3cr)

Choose one course from below:

BI 370. Ecology * Pre-req BI 211-213
FES 341: Forest Ecology

GIS (4cr)

GEOG 360:GISCIENCE I: GIS and Theory

Mathematics (4cr)

Choose one COCC or OSU course from below:

MTH 112: Elementary Functions
MTH 241: Calculus for Mgmt and Social Sci
MTH 245: Mathematics for Mgmt, Life, and Social Sci
MTH 251: Differential Calculus

Managing Natural Resources (2-3cr)

NR 201: Managing NR for the Future

Measurements (3cr)

Choose one course from below:

BI 371: Ecological Methods * Pre-req BI 370 [WIC]
FW 255: Field Sampling

Natural Resource Decision Making (4cr)

NR 455: Natural Resource Decision Making

Natural Resource Policy (3cr)

GEOG 340: Intro to Water Sci & Policy (was GEO 335
or PS 475: Environmental Politics and Policy

Resource Economics * Pre-req ECON 201 (7cr)

AEC 352: Environmental Economics and Policy

Society and Natural Resources (3cr)

SUS 420: Social Dimensions of Sustainability

Soil Science (4cr)

SOIL 205/206: Soil Sci

Statistics (4cr)

ST 201: Intro Stats
or ST 351: Introduction to Stat Methods

Water Science (4cr)

Choose one course from below:

RNG 355: Desert Watershed Mgmt

Vegetation ID (3cr)

RNG 353: Wildland Plant ID

Natural Resources Breadth (18-22)

GPA 2.0 minimum

Fisheries and Wildlife (Choose one)

FW 311: Ornithology
FW 317: Mammalogy
FW 320: Population Dynamics *pre-req BI 370 or ecology/approval
FW 323: Mgmt. Pacific Salmon of NW
FW 350: Endangered Species, Society, and Sust.
FW 481: Wildlife Ecology *pre-req BI 370 or ecology/approval

Forestry (Choose one)

FES 341: Forest Ecology
FES 440 Wildland Fire Ecology-Formerly FOR 446

Land and Water (Choose one)

GEO 306: Minerals, Energy, Water, and the Environment
RNG 355: Desert Watershed Mgmt
SOIL 366: Soil Morphology & Classification *pre-req Soil Sci

Political Dimensions (Choose one)

FES 365: Issues in NR Conservation
FW 350: Endangered Species, Society, and Sust.
GEOG 340: Introduction to Water Science and Policy
PS 475: Environmental Politics and Policy

Range (Choose one)

FES 440: Wildland Fire Ecology
RNG 341: Rangeland Ecology
RNG 342: Rangeland Ecology II – Online only (FW option)

Resource Values/Philosophy (Choose one)

GEOG 309: Environmental Justice
FW 340: Multicultural Perspectives in Natural Resources

Social Issues (Choose one)

FES 353: Nature Eco and Adventure Tourism
FES 444: Ecological Aspects of Park Management
SOC 480: Environmental Sociology

SPECIALTY OPTION SECTION (40 credits)

- NR majors **must choose** a specialty option to complete their degree requirements. Below are the specialty options at OSU-Cascades
- GPA 2.25 in option minimum
- Natural Resources Core, Natural Resources Breadth, and a Specialty Option courses **cannot be shared** in the NR Core, Breath, and Option. No more than 20 lower division credits total.

Specialty Option: NR Conservation and Technology (40 credits)

Ideal for students who have complete Forest Resources at COCC. Utilizes many COCC FOR courses

Conservation Courses: (each course required)

FES 365 (3)	Issues in NR Conservation
FW 251 (3)	Wildlife Conservation
FW 350 (3)	Endangered Species, Society, & Sustainability

Technology Courses: (choose 3 courses from list)

BI 371 (3) WIC	Ecological Methods	[pre-req BI 370]
FOR 236 (3)	Aerial Photo <i>COCC only</i>	[rec pre-req FOR 230A &B]
FOR 235 (4)	Resource Measurements <i>COCC only</i>	
FOR 230A (3)	Map, Compass, & GPS <i>COCC only</i>	
FOR 230B (3)	Forest Surveying <i>COCC only</i>	[rec pre-req FOR 230A]
FOR 112 (3)	Computers in Forestry	
FW 255 (3)	Field Sampling	

Sustainability:

SUS 350 (4)	Sustainable Communities
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Ecology and Ecosystems: (18-19 credits from the list) • Additional courses may be approved by petition to count in the section

ENSC 479 (3)	Case Studies [WIC]	
FOR 240B (3)	Wildlife Ecology <i>COCC</i>	
FES 440 (3)	Wildland Fire Ecology	[pre-req ecology course or instructor approval]
FES 445 (4)	Ecological Restoration	[pre-req ecology course or instructor approval]
FW 311 (3)	Ornithology	
FW 317 (3)	Mammalogy	
FW 320 (4)	Intro to Population Dynamics	[pre-req BI 370 or instructor approval]
FW 323 (3)	Mgmt of Pacific NW Salmon	
FW 326 (3)	Integrated Watershed Mgmt	
FW 479 (3)	Wetlands and Riparian Eco	[pre-req BI 370 or instructor approval]
FW 481 (3)	Wildlife Ecology	[pre-req BI 370 or instructor approval]
PS 475 (4)	Environmental Politics and Policy	
RNG 455 (4)	Riparian Ecology Mgmt	[pre-req RNG 355 or instructor approval]
SOIL 366 (3)	Soil Morphology and Classification	[pre-req soil course]
Z 477 (4)	Aquatic Entomology	[pre-req BI 211-213]
Z 349 (3)	Biodiversity: Causes, Consequences and Conservation	

Specialty Option: Fish and Wildlife Conservation (42 credits)

Required Courses (24 credits):

FES 445 (4)	Ecological Restoration
FOR 111 (4)	Forestry Perspectives <i>COCC only</i>
FES 440 (3)	Wildland Fire Ecology- <i>Formerly FOR 446</i>
FW 251 (3)	Principles for FW Conservation
FW 323 (3)	Mgmt of Salmon in Pacific NW
RNG 341 (3) <i>or</i> FES 444 (3)	Rangeland Ecology Mgmt/ Ecological Aspects of Park Mgmt.
RNG 455 (4)	Riparian Ecology Mgmt.

FW Biology Required Courses (10 credits):

FW 311 (3)	Ornithology
FW317 (3)	Mammalogy
FW 320 (4)	Intro to Population Dynamics

Habitat Management: choose 2 from the following (6 credits)

FW 479 (3)	Wetlands and Riparian Eco
FW 435 ^ (3)	Wildlife in Ag Ecosystems (<i>ONLINE only, WIC</i>)
SOIL 366 (3)	Ecosystems of Wildland Soils [pre-req Soil Science]

Natural Resource Policy Required Courses (4 credits)

PS 475 (4)	Environmental Politics and Policy
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Specialty Option: NR Policy and Management (40 credits)

Social Sciences Foundation: (Choose 2 courses from list)

PHL 201 (4)	Intro to Philosophy <i>COCC</i>
PS 201 (4)	Intro to US Govt. and Politics
PSY 201 or 202 (3-4)	General Psychology
SOC 201 (4)	Intro to Sociology <i>COCC</i>

Social Sciences and Natural Resources: (Choose 3 courses from list)

FOR 111 (4)	Forestry Perspectives <i>COCC course</i>
FW 251 (3)	Wildlife Conservation
FW 323 (3)	Mgmt. of Pacific Salmon
COMM 321 (3)	Intro to Comm. Theory
SOC 480 (4)	Environmental Sociology
SUS 350 (4)	Sustainable Communities

NR Policy and Management: 25 credits from the list below *additional courses may be used in option if approved by faculty/advisor

ENSC 479 (3)	Environmental Case Studies WIC	
FES 365 (3)	Issues in NR Conservation	
FES 444 (3)	Eco Aspects of Park Mgmt	
FES 445 (4)	Ecological Restoration	[pre-req BI 370 or Ecology Core completed]
FES 440 (3)	Wildland Fire Ecology	[Ecology course]
FW 303 (3)	Survey of GIS	
FW 311 (3)	Ornithology	
FW 317 (3)	Mammalogy	
FW 320 (4)	Intro to Population Dynamics	[pre-req 370 or instructor approval]
FW 350 (3)	Endangered Species, Society, and Sustainability	
FW 479 (3)	Wetlands and Riparian Eco	[pre-req 370 or instructor approval]
GEO 360 (3)	GISCIENCE I: GIS and Theory	
GEO 308 (3)	Global Change and Earth Sciences (3)	
PS 475 (4)	Environmental Politics and Policy	
RNG 455 (4)	Riparian Ecology and Mgmt.	[pre-req RNG 355 (RNG 355 can be approved in PM option as well)]

Specialty Option: Individualized Specialty Option (40 credits)

Natural Resources

OSU-Cascades

COCC Transfer Course Options

Use the COCC course schedule for planning and pre-reqs

Natural Resources CORE Requirements OSU-Cascades	Central Oregon Community College COCC
Animal ID (Choose 1)	FW 212 (2) Survey of Birds <u>or</u> FW 218 (2) Survey of Mammals
Atmospheric Science	GEOG 279 (4) Weather and Climate COCC only
Biology (Choose one sequence) <i>Students must take sequence at same institution</i>	BI 211, BI 212, BI 213 <u>or</u> BI 101, BI 102, BI 103 *200 Level Strongly Recommended*
Chemistry (choose 1)	CH 104 (5) *CH 104 will not allow students to take BI 200 Level <u>or</u> CH 221 (5) General Chemistry *200 level highly suggested
Earth Science (Choose 1)	G 201 (4) Geology 1 <u>or</u> G 202 (4) Geology 2
General Ecology	FOR 240A (3) Forest Ecology
GIS	GEOG 265 (4) Intro to GIS
Mathematics (Choose 1)	MTH 112 (4) Trigonometry <u>or</u> MTH 241 (4) Calculus for MGMT/SS
Measurements (Choose 1)	FOR 230A (3) Map, Compass & GPS <u>or</u> FOR 235 (4) Resource Measurements <u>or</u> FOR 220B (3)
Soil Science	FOR 208 (4) Soil Science
Society & Natural Resources (Choose 1)	FOR 251 (3) Rec. Resource Planning <u>or</u> ANTH 103 (4) Cultural Anthropology
Statistics	MTH 243 (4) Statistics 1
Vegetation ID (Choose 1)	FOR 241A (3) Field Dendrology <u>or</u> FOR 241B (3) Dendrology

Conservation & Tech Option OSU- Cascades	Central Oregon Community College COCC
Conservation Course- FW 251 (3) Wildlife Conservation	FW 251 (3) Wildlife Conservation
Tech Course Options (Choose 3)	FOR 230A (3) Map, Compass & GPS, FOR 230B (3) Forest Surveying, FOR 235 (4) Resource Measurements, FOR 236 (3) Aerial Photo (Choose 3)
Ecology/ Ecosystems elective	FOR 240B (3) Wildlife Ecology

Fish & Wildlife Conservation Option OSU-Cascades	Central Oregon Community College COCC
FW 251 (3) Wildlife Conservation	FW 251 (3) Wildlife Conservation
	FOR 111 (4) Forestry Perspectives

Policy & Management Option OSU-Cascades	Central Oregon Community College COCC
Social Science Foundations (Choose 2)	PHL 200 (4) Fundamentals of Philosophy <u>or</u> 201 (3) Problems of Philosophy: Epistemology PS 201 (4) Intro. to US Government PSY 201 or 202 (4) General Psychology SOC 201 (4) Intro to Sociology (Choose 2)
Society and NR (3 total needed in this section)	FW 251 (3) Wildlife Conservation

EC 201- Is a pre-req for AEC 352 and allowed from COCC.

This document is to be used in conjunction with the OSU-Cascades NR checklist/Advising Guide.

Use COCC Bacc Core Course guide to plan remaining Bacc Core.