

# FOREST RESOURCES TECHNOLOGY/FORESTRY

Forest Resources Technology/Forestry provides courses and programs to prepare students for immediate employment into forestry-related industries, transfer to a baccalaureate program in forestry or natural resources, or advancement in current forestry or natural resource careers. Students benefit from field-based work with hands-on learning (including outdoor labs and field trips), small class sizes, and knowledgeable and accessible instructors with research, agency, and industry experience.

See the [Forest Resources Technology/Forestry page](#) for more information.

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## Career and Technical Education

### Associate of Applied Science

- [Forest Resources Technology - Associate of Applied Science \(AAS\)](#)

### Career Pathway Certificate of Completion

- [Advanced Forest Concepts - Career Pathway Certificate of Completion \(CPC\)](#)
- [Conservation of Natural Resources - Career Pathway Certificate of Completion \(CPC\)](#)
- [Forest Ecology - Career Pathway Certificate of Completion \(CPC\)](#)
- [Forest Measurements - Career Pathway Certificate of Completion \(CPC\)](#)
- [Forest Protection - Career Pathway Certificate of Completion \(CPC\)](#)
- [Mapping/Cartography - Career Pathway Certificate of Completion \(CPC\)](#)

## Transfer

### Associate of Science

- [Agricultural Sciences \(OSU Transfer\) Emphasis - Associate of Science \(AS\)](#)
- [Forestry \(OSU Transfer\) Emphasis - Associate of Science \(AS\)](#)
- [Natural Resources \(OSU Transfer\) Emphasis - Associate of Science \(AS\)](#)

## Courses

### FOR 100 Forestry Program Orientation (1 Credit)

Provides students with an orientation to the Forest Resources Technology program. Designed to give students knowledge and tools to succeed in the Forest Resources AAS, the natural resources work force, and in an academic career beyond COCC. The course is required of all students seeking the Forest Resources Technology AAS degree, and is highly recommended for students in the Wildland Fire program. P/NP grading.

### FOR 110 Wildland Fire Science I (2 Credits)

Focuses on the effects of Wildland Fire Policy, current fire suppression strategies and tactics; weather, topography, fuel models and how each interact to effect fire behavior. Additional topics include the wildland fire environment as it relates to situational awareness and personal safety. An overview of modern wildland firefighting with an emphasis on understanding and applying fireline safety. Course cannot be challenged, but will be waived for those with proof of wildland fire single resource status.

### FOR 111 Forestry Perspectives (4 Credits)

Introduction to the entire discipline of forestry, including the history of forest use and management, North American forest regions, forest ecology, mensuration and management, forest products and the importance of forest resources other than wood fiber. Also provides overview of state, regional and local employment opportunities.

### FOR 126 Field Studies Pacific NW Forests (1 Credit)

This course examines the ecology, management, and human uses of Pacific Northwest forests. Field experience takes place during a 4-day field trip to the Oregon coast and Northern California and includes visiting forest environments, forest product manufacturing facilities, field lectures and guided tours, as well as individual and small-group exercises.

### FOR 127 Plants of the Pacific Northwest (1 Credit)

Identification, classification and distribution of shrubs, forbs, and grasses found in low-, mid-, and high-elevation Oregon habitat types. Emphasis is placed upon proper field identification through use of terminology and taxonomic keys. Also discusses sensitive plants and noxious weeds.

### FOR 130 Chainsaw Use and Maintenance (2 Credits)

Covers basic tree falling, bucking and limbing techniques. Equipment safety, use, maintenance and repairs of saws is covered. Designed for inexperienced or novice chainsaw operators or can be used as refresher course for experienced saw operators.

### FOR 180 Co-op Work Experience Forestry (1-7 Credits)

Provides opportunity for on-the-job training in forestry field operations, forest products manufacturing or work related to these areas. Normally undertaken during summer months on a full-time basis but can occur any term.

### FOR 188 Special Studies: Forestry (1-4 Credits)

Explores topics of current interest in the discipline.

### FOR 195 Wilderness Concepts (2 Credits)

Introduction to concepts of wilderness and wilderness management principles. Introduction to the history of wilderness and the National Wilderness Preservation System.

### FOR 199 Selected Topics: Forestry (1-5 Credits)

**Prerequisites:** instructor approval.

Provides opportunity for students with exceptional background or need to continue beyond normal program content. Content and credit earned by mutual agreement between instructor and student and detailed in written agreement. Maximum of three credits may be applied to degree.

### FOR 208 Soils: Sustainable Ecosystems (4 Credits)

Focuses on soil science basics, from physical properties to use and management. Discusses traditional agricultural, wildlands and rangelands, watersheds, and modern environmental perspectives on soil. Reviews new soil applications and soil science to better understand the role soil has in our lives. Includes lab component with indoor and outdoor experience and field trips.

**FOR 209 Fire Ecology and Effects (3 Credits)**

Discusses the role of fire in Pacific Northwest ecosystems. Identifies effects on flora, fauna, soils, water; fire and cultural/visual resource management; fire and insect interactions. Covers the effects of fire on different forest and range ecosystems.

**FOR 210 Wildland Fire Science II (2 Credits)**

A study of hazardous fuel management and treatment practices. Incorporates current fuel measurement and analysis techniques, fire behavior prediction models and hazardous wildland fuel mitigation methods.

**FOR 211 Supervision and Leadership (3 Credits)**

Covers basic human relations and management skills as applied to first-line supervision in forestry, fire science and EMS. Defines work environment. Identifies and discusses subordinate, peer, and supervisory relationships. Case studies, including students' own work experiences will be used.

**FOR 215 Forest Resource Capstone (3 Credits)**

**Prerequisites:** instructor approval.

Students conduct a sample survey of a large area and present their findings, along with recommendations for management of the area, in a written report. Oral presentation also made to department staff. Limited to second year students or those who have fulfilled majority of Forest Resources Technology Degree requirements.

**FOR 230A Map, Compass and GPS (3 Credits)**

Teaches the basic skills of field and forest navigation with compass and GPS. Competency obtained in pacing, paper and computer map use, compass and basic GPS use.

**FOR 230B Forest Surveying (3 Credits)**

**Recommended preparation:** FOR 230A or instructor approval.

Studies basic surveying techniques and equipment emphasizing traversing, differential leveling, profiling, GPS mapping and basic coordinate geometry.

**FOR 235 Resource Measurements (4 Credits)**

**Recommended preparation:** MTH 102 or a course from the foundational requirements math list.

Students will learn the fundamentals of measuring and quantifying natural resources, including cruising and scaling timber to determine merchantable volume, quantifying wildlife and fisheries habitat, measuring and estimating forage production for wildlife and livestock, and sampling wildlife populations. Course will also introduce basic statistical concepts and their applications in resource management. First course in the sequence of FOR 235, FOR 236, and FOR 237.

**FOR 236 Aerial Photo (3 Credits)**

**Recommended preparation:** MTH 102 or a course from the foundational requirements math list and FOR 230B.

Covers practical use of aerial photographs including photo interpretation, navigation, scale, area and distance determination, corner search, basic type-mapping and GPS application. Second course in the sequence of FOR 235, FOR 236, and FOR 237.

**FOR 237 Resource Sampling (4 Credits)**

**Recommended preparation:** MTH 102 or a course from the foundational requirements math list and FOR 235 and FOR 236.

Includes instruction in log scaling, tree measurement techniques, sampling statistics, tree volume and tree taper equations, sampling and field procedures for equal probability (sample tree and fixed area) and variable probability (3P and point sampling) sampling systems. Final course in the sequence of FOR 235, FOR 236, and FOR 237.

**FOR 240A Forest Ecology (3 Credits)**

Provides students with an overview of basic plant structure and function and introduces students to functioning of forest ecosystems. Class will examine the physical environment and how it affects growth and distribution of organisms and ecological processes. Course concludes with an examination of communities, disturbance and succession.

**FOR 240B Wildlife Ecology (3 Credits)**

**Recommended preparation:** FOR 240A.

Explores wildlife ecology and biodiversity in context of forest and range management. Focuses on relationship between wildlife and forest and range ecosystems, and examines the role of forest and range management in wildlife habitat management.

**FOR 241A Field Dendrology (3 Credits)**

Identification, classification, and distribution of common trees and shrubs found in the Western United States and major tree species of North America. The course emphasizes botanical nomenclature and proper identification using plant keys and field characteristics.

**FOR 241B Dendrology (3 Credits)**

Covers identification, classification and distribution of plant communities (tree, shrub, forb and grass) found within Oregon and major North American plant communities. Covers in lecture format the structure and function of the primary organs and tissues that comprise woody plants. This course is the classroom portion of FOR 241A. Course does not need to follow FOR 241A.

**FOR 251 Recreational Resource Management (3 Credits)**

Overview of recreational resource management including study of land and water resources used for outdoor recreation. Includes planning and management of natural and cultural resources for long-term resource productivity.

**FOR 255 Resource Interpretation (3 Credits)**

Introduces fundamental theories of interpretation and active and passive techniques of interpretation including: activities, presentations, signage, brochures and information kiosks. Course allows optional certification as an interpreter.

**FOR 260 Conservation of Natural Resources (3 Credits)**

**Recommended preparation:** WR 121.

Examines current use and issues surrounding natural resources availability and management as well as the effect of human population on resource use and the environment. Includes critical analysis of sustainable development and resource use concepts, including principles of conservation and management. Emphasizes current issues. Two-day field trip required.

**FOR 271 Applied Forest Ecology (3 Credits)**

**Recommended preparation:** FOR 240A and FOR 241A.

Applies principles of forest ecology to develop a basic understanding of forest stand dynamics and silvicultural principles. Emphasis is placed on stand development, regeneration and stand analysis. Students will develop a practical understanding of stand establishment, maintenance and stand data collection. First course in sequence of FOR 271, FOR 272, and FOR 273.

**FOR 272 Forest Entomology/Pathology (3 Credits)**

**Recommended preparation:** FOR 240A and FOR 241A.

Emphasizes the recognition and effects of diseases, insects and mammals affecting forest ecosystems in the Pacific Northwest. Course will examine the role of insects, diseases and animals in forest functioning, health and management, as well as control measures and integrated pest management. Lab work is largely field-based and emphasizes identification of damaging forest insects and diseases common in Oregon. Second course in the sequence of FOR 271, FOR 272, and FOR 273.

**FOR 273 Silviculture and Harvesting Systems (5 Credits)**

**Recommended preparation:** FOR 271, FOR 272, and FOR 235.

Emphasizes interrelated systems of silviculture and harvesting. Discussions provide an understanding of the various treatments and harvesting systems applied to forest stands to meet various management objectives for forest ecosystems. Topics include forest regeneration processes and intermediate operations (thinning, pruning, etc.) and different methods of timber harvest. Observation and data collection will be performed in lab sections. Written reports interpreting prescriptions and harvest systems will be required. Last course in a sequence of FOR 271, FOR 272, and FOR 273.

**FOR 288 Special Studies: Forestry (1-4 Credits)**

Explores topics of current interest in the discipline.

**FOR 298 Independent Study: Forestry (1-4 Credits)**

**Prerequisites:** Instructor approval.

**Recommended preparation:** prior coursework in the discipline.

Individualized, advanced study to focus on outcomes not addressed in existing courses or of special interest to a student. P/NP grading.

**FOR 299 Selected Topics: Forestry (1-5 Credits)**

This course is in development.

**FW 135 Museum Techniques (1 Credit)**

Hands on technique course focusing on preparing and preserving mammal and bird specimens for use in education and research. Students will complete a minimum of three projects which requires skinning and preserving wildlife specimens suitable for study and display.

**FW 188 Special Studies: Fish and Wildlife (1-4 Credits)**

Explores topics of current interest in the fish and wildlife discipline.

**FW 199 Selected Topics: Fish/Wildlife (1-4 Credits)**

**Prerequisites:** instructor approval.

Provides students with hands-on field experience and aids students in acquiring experience which may meet basic qualification standards required by federal agencies. Content and credit earned by mutual agreement between instructor and student in detailed written agreement.

**FW 212 Survey of Northwest Birds (2 Credits)**

**Recommended preparation:** BI 102 or BI 213 or FOR 241A.

This course is an introduction to bird systematics, and surveys ecologically, economically, and socially important bird species in the Pacific Northwest with an emphasis on field identification and basic life history.

**FW 218 Survey of Northwest Mammals (2 Credits)**

**Recommended preparation:** BI 102 or BI 213 or FOR 241A.

This course is an introduction to mammal systematics, and surveys ecologically, economically, and socially important mammal species in the Pacific Northwest with an emphasis on identification and basic life history.

**FW 251 Wildlife Conservation (3 Credits)**

**Recommended preparation:** WR 121.

Introduces fundamentals of wildlife ecology and management and their role in wildlife conservation. Examines history of wildlife management, current issues and case examples in wildlife conservation.

**FW 257 Hunting in Modern Society (4 Credits)**

Examines the role of recreational hunting in modern society, including its history and development, the use of harvests as a conservation and management tool, and varying ethical perspectives on recreational hunting. Focuses on recreational hunting as a social, biological, and conservation activity, and compares the North American model of wildlife conservation with management and conservation models for wildlife in other countries and cultures.

**FW 288 Special Studies: Fish and Wildlife (1-4 Credits)**

Explores topics of current interest in the fish and wildlife discipline.

**FW 298 Independent Study: Fish and Wildlife (1-4 Credits)**

**Prerequisites:** Instructor approval required.

**Recommended preparation:** Prior coursework in the discipline.

Individualized, advanced study in [insert subject] to focus on outcomes not addressed in existing courses or of special interest to a student. P/ NP grading.

**FW 299 Selected Topics: Fish/Wildlife (1-4 Credits)**

**Prerequisites:** instructor approval.

Provides a learning experience in fish/wildlife studies not currently available; this course is in development to be proposed as a permanent course.