



Course Name: Forest Biology
Course Number: 240_400 **Credits:** 4
Instructor name: Dawn Anzinger
Instructor email: anzinged@oregonstate.edu

[Instructor website](#)

Course Description

Structure, function, development, and biology of forest vegetation and their relationships to forestry and natural resource applications. Field trips required. Lec/lab/rec. (Bacc Core Course)

Prerequisite Knowledge

There are no prerequisite courses needed for this course. However, in order to be successful in this course, incoming students should have a basic background in biology and chemistry (high school-level) and college-level writing skills.

Communication

Please post all course-related questions in the General Discussion Forum so that the whole class may benefit from our conversation. Please email me, Dawn, for matters of a personal nature. I will reply to course-related questions and email within 24-48 hours. I will return your assignments and grades for course activities to you within one week of the due date.

Course Credits

This course combines approximately 120 hours of online activities, outdoor (or indoor) lab work, and assignments for 4 credits.

There are **two options for completing lab work**.

1. The first (and best, if you can do it) option is to complete your lab work outdoors, in a regional forest or park of your own choosing. Several (4 or 5) times during the term you will travel to your chosen forest (these are the required "field trips" mentioned in the course description). There, you will complete **self-directed lab exercises** and non-destructive data collection.

This outdoor option requires participants to:

- Be well and have no symptoms of flu.
- Maintain social distancing throughout the lab exercise, including the travel time to and from the site.
- Travel to the field site alone or with a close family member.

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- Avoid working during storm events.
 - Practice safety: closed-toed shoes, warm clothes, water bottle, phone & emergency contact #.
2. The second option for completing lab work is at home. Fully online alternative labs are available for each lab exercise. They are designed to meet the same learning outcomes as the outdoor labs.

You can choose which option works best for you. Know, too, that you can go back and forth between the two options as you need.

Technical Requirements and Assistance

The minimum technology requirements for this course are a modern web browser (Firefox and Google Chrome work well), word processing software, spreadsheet software, and a digital camera (phone are acceptable). To be successful in this course, students should have basic skills with these tools, as well as an ability to upload digital images from a camera or phone and to select and attach computer files to emails and digital submission webpages.

If you experience any errors or problems while in your online course, contact 24-7 Canvas Support via chat, phone, or e-mail through the Help link within Canvas. If you experience computer difficulties, need help downloading a browser or plug-in, or need assistance logging into a course, contact the OSU Help Desk for assistance. You can call (541) 737-3474, email osuhelpdesk@oregonstate.edu or visit the OSU Computer Helpdesk online.

Learning Resources

The following reading materials are required for this course:

- [Trees: Their Natural History](#), 2014, by Peter Thomas and published by Cambridge University Press. Available as an Ebook from the OSU Valley Library. ISBN 0521133580 *This is the primary textbook for the course. This text will facilitate an in-depth study of the biology of trees and forests, the primary focus of this course.*
- [Biology, Answering the Big Questions of Life](#), a free, open access Wikibook on basic biology. Text is available under the [Creative Commons Attribution-ShareAlike License](#). *This is a supplemental textbook that provides students with a background in (or review of) basic cellular biology.*
- [General Biology](#), a free, open access Wikibook on basic biology. This text is also available under the [Creative Commons Attribution-ShareAlike License](#). *This is a supplemental textbook that provides students with a background in (or review of) natural selection and evolution.*

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- [Ecology](#), a free, open access Wikibook on basic biology. This text is also available under the [Creative Commons Attribution-ShareAlike License](#).

This is a supplemental textbook that provides students with a background in (or review of) ecology.

Lab Materials (required if completing the outdoor labs)

- **A field guide (book) or phone app for identifying trees in your region**

Everyone needs to locate either a tree identification guide or phone app.

- *If you choose to use a guide, it should ideally cover **only** the local region or state where you are completing your lab work. Guides that cover large geographical area (such as the entire eastern U.S.) are very difficult to use. Check local book sellers and the library for a tree guide, and contact me if you need help with possible titles.*
- *If you choose to use an app, I recommend [vTree](#) from Virginia Tech.*

You must acquire a tree guide or tree app by Friday of Week 1.

- Ruler
- Several large sheets of unlined white paper
- Sharpie pen
- 50' tape measure
- Rope
- Digital camera
- Trowel
- Rubbing alcohol, nail polish remover, or other household solvent
- Coffee filters

Canvas

This course will be delivered via Canvas where you will interact with your classmates and with your instructor. Within the course Canvas site, you will access the learning materials, such as the syllabus, class discussions, assignments, projects, and quizzes. To preview how an online course works, visit the [Ecampus Course Demo](#). For technical assistance, please visit [Ecampus Technical Help](#).

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Measurable Student Learning Outcomes

Successful completion of this course partially fulfills OSU's Baccalaureate Core course requirements in the Perspectives category under Biological Science with Lab.

Baccalaureate core learning outcomes:

Students in this course will:

1. Recognize and apply concepts and theories of basic biological science.
In this course, the theories and concepts you will learn and apply will be from botany and forest biology, but many of the concepts are generalizable to other organisms and ecosystems.
2. Apply scientific methodology and demonstrate the ability to draw conclusions based on observation, analysis, and synthesis.
In this course, the scientific methodology you will practice will be observational, rather than experimental. You will also become proficient in organizing and writing scientific reports.
3. Demonstrate connections with other subject areas.
In this course, you will apply elements of critical thinking and a knowledge of forest biology to complex environmental issues.

Additional learning outcomes:

4. Describe structure and function in trees at multiple scales, from the cellular level to the ecosystem-level.
5. Synthesize concepts and information in order to illustrate the pathways of water and carbon movement in a typical tree. Explain the responsible processes and resulting ecological function.
6. Synthesize and apply information to predict the biological and ecological effects of ecological disturbances, such as common forest practices and climate change. Describe the responsible mechanisms.
7. Measure and describe elements of forest structure and explain their ecological significance.
8. Communicate clearly using scientific terms from botany and forest biology as well as scientific voice and formatting.

Evaluation of Student Performance

Your performance will be assessed in lab reports, class discussions, and unproctored online exams.

<u>Assignment</u>	<u>Learning Outcomes</u>	<u>Number and Weight</u>	<u>Point Value</u>
Lab Reports	1-3, 6-8	6 @ 50 points each	300 points
Class Discussions	1, 3, 8	best 6 of 7 @ 10 points each	60 points
Exams	1-6, 8	3 @ 100 points each	300 points

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Total 660 points

Grading Scale

93-100%	A
90-92%	A-
88-89%	B+
82-87%	B
80-81%	B-
78-79%	C+
72-77%	C
70-71%	C-
68-69%	D+
62-67%	D
60-61%	D-
<60%	F

Course Content Course Content

Week	Topics	Learning Activities	Graded Assignments	Due Dates (Pacific Standard Time)
1	Life on Earth Structure & Function of Leaves	Readings: <ul style="list-style-type: none">• Biology: Ch. 1, 2, 2.2, & 3• Trees: Ch. 1 & 2 Lectures: <ul style="list-style-type: none">• Unit 1 lectures• Unit 2 lectures Online activities	<ul style="list-style-type: none">• W1 Discussion• Taxonomy Lab	W1 discussion: Participate by 11:59 PM Sunday Taxonomy Lab: Report due by 11:59 PM Monday of week 2
2	Photosynthesis	Readings: <ul style="list-style-type: none">• Biology: Ch. 5 & 5.1 Lectures: <ul style="list-style-type: none">• Unit 3 lectures Online activities	<ul style="list-style-type: none">• W2 Discussion• Leaf Pigment Lab	W2 Discussion: Participate by 11:59 PM Sunday Leaf pigment lab: Report due by 11:59 PM Monday of week 3

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3	Woody Stems & Roots	<p>Readings:</p> <ul style="list-style-type: none"> Trees: Ch. 3 and 4 <p>Lectures:</p> <ul style="list-style-type: none"> Unit 4 lectures <p>Online activities</p>	<ul style="list-style-type: none"> Exam 1 Physical Environment Lab 	<p>Exam 1: Available from 12:00 AM Thursday until 11:59 PM Sunday</p> <p>Environment lab: Report due by 11:59 PM Monday of week 4</p>
4	Water, Nutrition, Growth & Reproduction	<p>Readings:</p> <ul style="list-style-type: none"> Trees: Ch. 6 and 5 Biology: Ch. 6 <p>Lectures:</p> <ul style="list-style-type: none"> Unit 5 lectures Unit 6 lectures <p>Online activities</p>	<ul style="list-style-type: none"> W4 Discussion Phenology Lab 	<p>W4 Discussion: Participate by 11:59 PM Sunday</p> <p>Phenology Lab: Report due by 11:59 PM Monday of week 6</p>
5	Natural Selection & Heredity	<p>Readings:</p> <ul style="list-style-type: none"> Trees: Ch. 8 General Biology: Evolution-Ch. 1 <p>Lectures:</p> <ul style="list-style-type: none"> Unit 7 lectures <p>Online activities</p>	<ul style="list-style-type: none"> Exam 2 W5 Discussion 	<p>W5 Discussion: Participate by 11:59 PM Sunday</p> <p>Exam 2 Available from 12:00 AM Thursday until 11:59 PM Sunday</p>
6	Species Interactions & Community Ecology	<p>Readings:</p> <ul style="list-style-type: none"> Trees: Chapter 9 Ecology: Ch. 9 and 11 <p>Lectures:</p> <ul style="list-style-type: none"> Unit 8 lectures <p>Online activities</p>	<ul style="list-style-type: none"> W6 Discussion Community Lab 	<p>W6 discussion: Participate by 11:59 PM Sunday</p> <p>Community Lab: Report due by 11:59 PM Monday of week 8</p>
7	Succession & Stand Development	<p>Readings:</p> <ul style="list-style-type: none"> Ecology: Ch. 5 <p>Lectures:</p> <ul style="list-style-type: none"> Unit 9 lectures <p>Online activities</p>	<ul style="list-style-type: none"> W7 Discussion Carbon Lab 	<p>W7 Discussion: Participate by 11:59 PM Sunday</p> <p>Carbon Lab: Report due by 11:59 PM Monday of week 8</p>
8	Ecosystem Cycles	<p>Readings:</p> <ul style="list-style-type: none"> Ecology: Ch. 15 <p>Lectures:</p> <ul style="list-style-type: none"> Unit 10 lectures <p>Online activities</p>	<ul style="list-style-type: none"> W8 Discussion Final Exam 	<p>W8 Discussion: Participate by 11:59 PM FRIDAY</p> <p>Final Exam: Due by 11:59 PM FRIDAY</p>

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Course Policies

Discussion Participation

The weekly discussions are meant to be a place where you can double check your understanding of the course learning outcomes and where you will consider the wider application of course concepts and information. Participation in weekly discussions should occur early in the week, prior to completing the other learning activities and assignments assigned that week. Aim for one paragraph of clear, error-free writing on the discussion topic. A casual voice is acceptable, but not slang, insults, off-topic or off-color remarks, or errors in spelling and grammar. Comments must be added to weekly discussion boards by 11:59 PM Sunday to be eligible for full credit. Replying to other students is encouraged but not required for full credit.

Lab Reports

Over the course of the term, you will complete seven lab exercises. Unless alternative arrangements have been made with the instructor, each of these lab exercises will involve observing and collecting data in a forested location in your area and collecting supplemental data from the internet. You will then write a lab report on your work that follows the Instructions for Writing Lab Reports which is located in the Start Here Module. Lab reports are generally due by 11:59 PM Monday the week *after* they are assigned. For example, the lab assigned in week 1 is due on Monday of week 2. Late lab reports are generally accepted and eligible for full credit, but this leniency is only extended to students who contact the instructor (ideally before the report is due) and who are performing adequately in the course otherwise.

Exams

This course contains three **UNPROCTORED** Canvas-administered exams. The exams are not cumulative and are open-note, open-book, open-internet. However, all written answers should be in the student's own writing. Cut-and-pasted answers that come directly from the instructor-provided lecture notes or from websites will not receive full credit.

Exams 1 and 2 are timed and composed of multiple-choice, matching, and short-answer questions. Though you may take these exams at any point during the week that they are open, once you launch these exams you must complete them within the time limit (generally one hour). Once you reach the time limit for the exam, Canvas will close your exam. No further questions can be answered. If you run into technical difficulties, please contact the instructor immediately. Problems of that nature are usually easily fixed, so try not to panic. If you require extra time to complete exams, please contact [DAS](#). DAS will then contact the instructor regarding appropriate accommodations.

Exam 3 is a "take-home" exam that asks you to address learning outcome 5 in two essays. You will have one week to write your exam essays.

Makeup exams are only available to students who had their absence excused in advance by the instructor. Excused absences for exams will not be given for airline reservations, routine illness (colds,

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flu, stomach aches), or other common ailments. Excused absences and makeup exams will generally not be given after the absence has occurred, except under very unusual circumstances.

Incompletes

Incomplete (I) grades will be granted only in emergency cases (such as a death in the family, major illness or injury, or birth of your child), *and* if the student has turned in 80% of the points possible at a C-level or better. If you are having any difficulty that might prevent you completing the coursework, please don't wait until the end of the term. Let me know right away!

Community Statement

We live on a forested planet. One of my goals for this class is to introduce you to your tree neighbors and broaden your sense of community to include trees. Though the profession of forestry in Oregon has been long dominated by white men, the study of trees, the harvest of wood and tree products, and the care and management of forests are part of the human birthright. Every student should feel safe and welcome to contribute in this course and should know that they belong in the College of Forestry.

As the instructor, I will try to establish a welcoming, inclusive tone whenever possible, but ultimately the responsibility for cultivating a safe and welcoming community belongs to the students—that means you! Fortunately, being part of a safe and welcoming community is not hard. A good place to start is to recognize (and continually remind yourself) of the following facts:

- Your classmates come from a variety of cultural, economic, and educational backgrounds. Something that is obvious to you may not be obvious to them.
- Your classmates are human beings with intelligence and emotions.
- Your classmates are here to learn. They have the right to pursue their education without being distracted by others' disruptive behavior, or made uncomfortable by inappropriate jokes or unwanted sexual interest.
- If you feel like your performance in the class is being impacted by your experiences outside of class, please don't hesitate to come and talk with me. I want to be a resource for you.

If each of us remembers these facts and acts with corresponding decency, respect, and professionalism, the course will certainly be better for everyone. Some students might be inclined to shrug this off and perhaps crack a joke about safe spaces or political correctness. If that's you, please also know that if you make a fellow student uncomfortable by mocking them, making inappropriate jokes, or making unwanted advances, that constitutes harassment and will be taken seriously. However, I hope that we can all approach this positively. Treat your classmates as respected colleagues, support each other when needed, have fun without spoiling it for anyone else, and everybody wins.

Statement Regarding Students with Disabilities

Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at <http://ds.oregonstate.edu>. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation

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of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

Accessibility of Course Materials

All materials used in this course are accessible, except the field labs. If you require accommodations please contact [Disability Access Services \(DAS\)](#). Accessible labs are available if required.

Canvas, the learning management system through which this course is offered, provides a [vendor statement](#) certifying how the platform is accessible to students with disabilities.

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Expectations for Student Conduct in this Online Classroom

Students are expected to conduct themselves in the course (e.g., on discussion boards, email postings) in compliance with the university's regulations regarding civility. Student conduct is governed by the university's policies, as explained in the [Student Conduct Code](#).

Academic Integrity

Students are expected to comply with all regulations pertaining to academic honesty. For further information, visit [Student Conduct and Community Standards](#), or contact the office of Student Conduct and Mediation at 541-737-3656.

OAR 576-015-0020 (2) Academic or Scholarly Dishonesty:

a) Academic or Scholarly Dishonesty is defined as an act of deception in which a Student seeks to claim credit for the work or effort of another person, or uses unauthorized materials or fabricated information in any academic work or research, either through the Student's own efforts or the efforts of another. b) It includes:

- i) CHEATING - use or attempted use of unauthorized materials, information or study aids, or an act of deceit by which a Student attempts to misrepresent mastery of academic effort or information. This includes but is not limited to unauthorized copying or collaboration on a test or assignment, using prohibited materials and texts, any misuse of an electronic device, or using any deceptive means to gain academic credit.
- ii) FABRICATION - falsification or invention of any information including but not limited to falsifying research, inventing or exaggerating data, or listing incorrect or fictitious references.
- iii) ASSISTING - helping another commit an act of academic dishonesty. This includes but is not limited to paying or bribing someone to acquire a test or assignment, changing someone's grades or academic records, taking a test/doing an assignment for someone else by any means,

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including misuse of an electronic device. It is a violation of Oregon state law to create and offer to sell part or all of an educational assignment to another person (ORS 165.114). iv)

TAMPERING - altering or interfering with evaluation instruments or documents.

- v) PLAGIARISM - representing the words or ideas of another person or presenting someone else's words, ideas, artistry or data as one's own, or using one's own previously submitted work. Plagiarism includes but is not limited to copying another person's work (including unpublished material) without appropriate referencing, presenting someone else's opinions and theories as one's own, or working jointly on a project and then submitting it as one's own.

- c) Academic Dishonesty cases are handled initially by the academic units, following the process outlined in the University's Academic Dishonesty Report Form, and will also be referred to SCCS for action under these rules.

Tutoring

[NetTutor](#) is a leading provider of online tutoring and learner support services fully staffed by experienced, trained and monitored tutors. Students connect to live tutors from any computer that has Internet access. NetTutor provides a virtual whiteboard that allows tutors and students to work on problems in a real time environment. They also have an online writing lab where tutors critique and return essays within 24 to 48 hours. Access NetTutor from within your Canvas class by clicking on the NetTutor button in your course menu.

OSU Student Evaluation of Teaching

Course evaluation results are extremely important and are used to help me improve this course and the learning experience of future students. Results from the 19 multiple choice questions are tabulated anonymously and go directly to instructors and department heads. Student comments on the open-ended questions are compiled and confidentially forwarded to each instructor, per OSU procedures. The online Student Evaluation of Teaching form will be available toward the end of each term, and you will be sent instructions via ONID by the Office of Academic Programs, Assessment, and Accreditation. You will log in to "Student Online Services" to respond to the online questionnaire. The results on the form are anonymous and are not tabulated until after grades are posted.

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