Spring 2026

College of the Redwoods

Course Information

Semester & Year: Spring 2026

Course ID & Section #number: FNR 5-E9972 Introduction to Natural Resources Inventory Techniques

Instructor’s name: Valerie Elder

Day/Time of required meetings:

Lecture: T/TH 10:05-11:10

Lab: T/TH 11:30-2:40

Location: AT-127

Course units: 4

Instructor Contact Information

Office location or Online AT-134 (around the corner from AT-127)

Office hours: M-TH 9-10 AM or by appointment/zoom

Phone number: 707-476-4328 (office phone doesn't receive texts)

Email address: Valerie-elder@redwoods.edu (mailto:Valerie-elder@redwoods.edu)

Pronto is usually the fastest way to get ahold of me, but I strive to respond in 24 hours M-F.

Required Material

Text: *Forest Measurements* 6th Edition by Burkhart, Avery, and Bullock (ISBN 978-1-4786-3618-2)

PDF and weblinks to required readings are posted in modules or handouts.

Field Equipment: You will need appropriate field clothing and traction footwear (closed-toe boots), and **rain gear**. Hard hats will be required as well although the College will supply them for each student if you do not have your own. Additional equipment (e.g. cruising vest, ranger compass, etc.) that will be useful this semester will be covered in the first lab.

Catalog Description

An introduction to the various techniques used in the measurement and inventory of natural resources. Topics include map reading and drawing, land navigation, tree measurement, sampling methods, and data analysis. Students will work with a variety of biometric devices in field settings and gain practical experience in their application and use.

Course Student Learning Outcomes

1. Explain the principles of land descriptions and develop and use functional maps of forest stands that include those land descriptions.
2. Explain common measurement techniques used in natural resource inventories and their strengths and limitations.
3. Use critical thinking to derive appropriate solutions to natural resource inventory problems both in and out of class.

4. Lab specific outcome: Conduct field inventories, analyze field data, and develop useful reports

Course Calendar

****This is a tentative course schedule, subject to change with fair notice, due to weather or other events we may need to be flexible. Check email/canvas announcements and pronto before coming to class **** Not all assignments are listed below but this serves as a reference for most*** Carpooling is encouraged for field trips you don't need a car to take this course. When possible we use 1-2 FNR vans for field trip transport.

Course Objectives: We will learn how to measure trees, estimate biomass, and how to analyze the data to come up with meaningful estimates of natural resources. This will include using spreadsheets and basic statistics. Preliminary coursework in mathematics (statistics) will be helpful but we'll go over the basic math involved. We will also learn field navigation techniques, map reading, sampling strategies and point location and timber cruising. And we'll discuss how to apply these inventory techniques to other kinds of natural resources (i.e. birds, herbaceous plants, etc..).This course is built around lectures and discussions combined with field labs to reinforce concepts. The field labs will be held mostly on campus though a few off-campus field trips may be included.

Topics include:

- Land navigation, boundary descriptions, distance, direction and elevation

- Map sketching, reading, and interpretation

- Area measurements and GPS

- Tree measurements and Log Scaling

- Basic statistics of field data

- Fixed-area plots

- Point sampling

- Cover estimation

- Stand descriptions

Field Project: During the last 3-4 weeks of the semester each student will participate in conducting an inventory of an assigned stand from planning to analysis and reporting. This entails working a small group (2-3) in the field on campus and starts with a sketch map of the

assigned stand, area calculations, pre-cruise plots, sample design, plot measurements, data analysis and finally report writing. This assignment is 15% of the overall grade.

Field Trips: The class may include a field trip to Hoopa High School to instruct measurements and Saturday lab at CR (May 2nd) to assist with forest measurements.

Expected Work Load The expected workload for CR Courses is calculated at 3 hours per week for each unit in a standard 16-week course. For the combined lecture and lab, this amounts to nine hours per week. This may be more or less hours depending on your learning style

Evaluation & Grading Policy

Assignments are listed in Canvas modules and are **subject to change**. Changes will be announced in class and posted in Canvas – due dates in Canvas should be considered the most current. Additional assignment due dates will be announced when the assignments are given. Most assignments will be turned in via canvas. You are responsible for knowing when your work is due.

Attendance is expected at all lectures and lab meetings. Most lectures will have 5-point in-class assignments and points are assigned at each lab meeting. I will randomly give 2–4 quizzes in lectures, worth 20 points total.

Absences from courses meetings with prior notice can sometimes be made-up at the instructors digression but some assignments cannot be made up.

An absence from an exam will receive a 0 score. If you know you will be absent from an exam discuss with instructor at least 48 hours prior to the exam so we can attempt to make alternate arrangements.

Late Work: Assignments in canvas has a **due date**- when you are expected to turn it in and a **turn-in date** the last possible date you can submit an assignment. If you cannot turn in an assignment by the due date and want to submit by the turn-in date you must email me before the assignment is due and outline your plan for submitting the assignment by the turn-in date. Otherwise, 10% per day will be deducted from your assignment grade. After using two turn-in grace periods late assignments will be deducted 10% per day.

Note that canvas is set to assign a 0 score for assignments. So late work will temporarily show a 0 score until it is graded.

Drop Policy: You may be dropped from the class if you miss 3 or more weeks of class participation, discussion, assignments or labs prior to the end of week 10. If you stop participating in class after week 10 you will be graded for participation and may receive an F.

Assignments will be graded typically within one week of submission, depending on instructor workload.

CR Grading Scale: A: 94-100, A-: 90-<94, B+: 87-<90, B: 84-<87, B-: 80-<84, C+: 77-<80, C: 70-<77, D: 60-<70, F: <60

Grades:

Grades for this semester will be based on the following assignment categories:

Module quizzes	20%
Problem sets	20%
Lab assignments	35%
Field project	15%
Final Exam	10%

The Final Exam is comprehensive and will be held during Finals week.

Prerequisites / Co-requisites / Recommended Preparation

Students will be required to have access to adequate computer and internet access and familiarity with basic computer skills. Examples of this include:

- navigate a class in Canvas
- receive, respond and regularly check) messages sent to your CR email account
- receive, respond and regularly check) announcements sent in Canvas
- download and upload files in Canvas assignments
- use a phone or digital camera (or webcam) to upload “selfies” to your online lab notebook
- a word processor program (such as Microsoft Word or Google Docs)
- use a webcam or a phone to record and upload videos in Canvas

▪ use Zoom, email and canvas discussion boards to communicate with peers and instructor

Educational Accessibility & Support

College of the Redwoods is committed to providing reasonable accommodations for qualified students who could benefit from additional educational support and services. You may qualify if you have a physical, mental, sensory, or intellectual condition which causes you to struggle academically, including but not limited to:

- Mental health conditions such as depression, anxiety, PTSD, or bipolar disorder
- Common ailments such as arthritis, asthma, diabetes, autoimmune disorders and diseases
- Temporary impairments such as a broken bone, recovery from significant surgery, or a pregnancy-related disability
- Neurodevelopmental disorders such as a learning disability, intellectual disability, autism, acquired brain injury, or ADHD
- Vision, hearing, or mobility conditions

Available services include extended test time, quiet testing environments, academic assistance and tutoring through the **LIGHT Center (https://www.redwoods.edu/services/sass/light.php)**, counseling and advising, alternate formats of course materials (e.g. audio books or E-texts), assistive technology, learning disability assessments, approval for personal attendants, interpreters, priority registration, on-campus transportation, adaptive physical education and living skills courses, and more. If you believe you might benefit from disability- or health-related services and accommodations, please contact **Student Accessibility Support Services (SASS) (https://www.redwoods.edu/services/sass/index.php)**.

If you are unsure whether you qualify, please contact SASS for a consultation: **SASS@redwoods.edu (mailto:SASS@redwoods.edu)**.

SASS office locations and phone numbers

Eureka campus

- Phone: 707-476-4280,
- Locations: Student Services building, first floor SS113

Norte campus

- Phone: 707-465-2353
- Location: Main building, near the Library

Klamath-Trinity campus

- 707-476-4280

Academic Integrity

In the academic community, the high value placed on truth implies a corresponding intolerance of scholastic dishonesty. In cases involving academic integrity, determination of the grade and of the student's status in the course is left primarily to the discretion of the faculty member. In such cases, where the instructor determines that a student has demonstrated a lack of academic integrity, the student may receive a failing grade for the assignment and/or exam and may be reported to the Chief Student Services Officer or designee. The Student Code of Conduct (AP 5500) is available on the College of the Redwoods website. Additional information about the rights and responsibilities of students, Board policies, and administrative procedures is located in the 2025-2026 College Catalog and CR Board and Administrative Policies.

AI Use Class Policy

Recent advancements in generative artificial intelligence (AI) have made large language models such as ChatGPT and Google's Bard widely available. We may use some of this technology in our analysis in class. However, overuse of these tools in this class can undermine your learning and curtail the development of your critical and creative thinking skills. In addition, AI outputs are often unreliable and frequently subject to bias. For these reasons, the policy of this class is that **AI cannot be used at any point in the completion of class assignments unless otherwise specified**, including discussion posts. Any or all of your assignment submissions and discussion posts may be screened by AI detection software, but the real penalty for AI misuse is that you will miss out on an opportunity to learn. In Forestry and Natural Resources, we so often reference on the ground conditions to ensure environmental protections- so critical thinking is essential!

Inclusive Language in the Classroom

College of the Redwoods aspires to create a learning environment in which all people feel comfortable in contributing their perspectives to classroom discussions. It therefore encourages instructors and students to use language that is inclusive and respectful.

Disruptive Behavior

Student behavior or speech that disrupts the instructional setting will not be tolerated. Disruptive conduct may include, but is not limited to: unwarranted interruptions; failure to adhere to instructor's directions; vulgar or obscene language; slurs or other forms of intimidation; and physically or verbally abusive behavior. In such cases where the instructor determines that a student has disrupted the educational process, a disruptive student may be temporarily removed from class. In addition, the student may be reported to the Chief Student Services Officer or designee. Additional information about the rights and responsibilities of students, Board policies, and administrative procedures is located in the **2025-2026 College Catalog (https://redwoods.elumenapp.com/catalog/2024-2025/home)** and **CR Board and Administrative Policies (https://go.boarddocs.com/ca/redwoods/Board.nsf/Public?open&id=policies)** .