



# NR 20 –Forest Measurements

Reedley College – Spring 2010

Lecture 8:00-9:50 W FEM 7

Lab 10:00-12:50 W FEM 7

**Instructor:** Jason Pinkerton  
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 Office Hours: W 1:00-3:00, and TH 12:00-1:00 other times by appointment  
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## Course Description:

Measurement of timber stand growth – quantity and quality. Experience in timber inventory systems, cruise design, aerial photographic interpretation, and log scaling. Measurement of natural resources including forest inventory, tree growth, and rangeland resources. Topics covered may include basic statistical methods, sampling design, log scaling, tree volume calculations, and tree measurement. Use of forestry equipment such as a Relaskop, scaling stick, wedge prism, and clinometer.

## Course Outcomes:

Upon completion of this course, students will be able to:

- A. Measure tree, calculate volume, and determine the quantity and quality of wood.
- B. Scale logs for the board foot volume.
- C. Calculate basic statistical information (e.g., sample size, mean, coefficient of variation, standard deviation, etc.) to describe a sample population.
- D. Assess forest inventory by various sampling designs (e.g., strip cruise, 3P sampling, systematic, or stratified sampling designs, etc.) and gather information regarding tree species, height, and diameter to predict stand or forest volume.

## Course Objectives:

In the process of completing this course, students will:

- A. Identify the commercial species of logs by bark and wood characteristics, and assess the damage to wood volumes created by insects, physical damage, and diseases.
- B. Describe the process for locating sampling plots (i.e., strip cruise, 3P sampling, systematic, or stratified sampling methods).
- C. Explain how collected data is used to describe a forest area.
- D. Demonstrate the use of forest measurement tools which may include: scaling sticks, Relaskop's, Biltmore/cruiser's stick, clinometer, diameter tape, and laser rangefinders.

***Textbook(s):***

Bell, J.F., and J.R. Dilworth. 2002. Log scaling & timber cruising. OSU Book Store, Inc. Corvallis, OR. **(Required)**

Avery, T.E. and H.E. Burkhart. 2002. Forest measurements. McGraw-Hill Companies, Inc. New York, NY. **(Recommended)**

***Essential Information:***

- It is your responsibility to stay informed on any changes to assignment due dates, readings, test material, etc. Missing a class doesn't excuse you from this responsibility (i.e. if a due date for an assignment changes, new assignments are given, etc.). This means you should ask a trustworthy classmate for notes if you are absent. Being absent is not an excuse for late work, late assignments, or just not knowing what is happening.
- It is the student's responsibility to officially withdraw from this and/or any course. Failure to do may result in a "F" grade being awarded. As an instructor, I have the option to drop students who miss more than four class periods.
- Cheating and/or plagiarism will not be tolerated. No credit will be given for an assignment if in the opinion of the instructor the individual has cheated.
- "If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible."
- Please turn cellular phones and pagers off during class time (1 point will be deducted from your final participation grade for each cell phone ring throughout the semester). Sunflower seeds and all tobacco products are **NOT** permitted in the classroom or laboratory setting.

***Field Trip:***

There may be one required field trips (FT) taken during the semester. This trip will generally occur during the scheduled class lecture or lab time. However, we may return to campus after our scheduled meeting times. If you are unable to attend a field trip you must arrange to make-up your absence with the instructor. You will still be responsible for the material covered and **may** be required to complete an alternative assignment. Failure to do so will result in a zero for the particular lab. Always come to lab prepared for outside activities. Prepared is defined as having sturdy hiking shoes or boot, long pants, water, food, and warm (appropriate) clothing.

***Participation and Grading Policy:***

Grading for this course is based on the sum of two exams, a comprehensive final (comprised of a lecture component and lab practical), lab assignments, individual participation, and unannounced quizzes. Both lecture and laboratory material will be covered on midterm exams and quizzes. **No early or makeup exams or quizzes will be given**, unless previously (one week – seven days) authorized by the instructor. Each lab assignments will be due the following lab period (one week later). All late assignments will be deducted 10% for each day late and must be turned in within one week of due date to receive any credit. Individual participation will be considered when assigning your final grade. Final grades may be curved based on a percentile of the highest point total in the class. Grades will be assigned based on a straight percentage system according to the following scale:

<b>Course Grade</b>	<b>Cumulative Percent</b>	<b>Breakdown of Grades</b>	<b>Points</b>
A	90-100	Lab Reports	25%
B	80-89	Quizzes	15%
C	70-79	Participation	20%
D	60-69	Two Midterm Exam(s)	25%
F	<59	Cumulative Final Exam	15%
		<b>TOTAL</b>	<b>100%</b>

**LAST DAY TO DROP THE COURSE Friday, January 29<sup>th</sup> without a “W” Friday, March 12<sup>th</sup>**

*Tentative Schedule*

<b><i>Date</i></b>	<b><i>Lecture Topic</i></b>	<b><i>Lab Topic</i></b>
1/13	Introduction (Tool Id)	Tree Measurement
1/20	Standing Tree Measurement (Trad.)	Tree Measurement (Trad.)
1/27	Standing Tree Measurement (Relaskop)	Tree Measurement (Relaskop)
2/3	Standing Tree Measurement (Relaskop)	Tree Measurement (Relaskop)
2/10	Standing Tree Measurement (RD1000)	Tree Measurement (RD1000)
2/17	Log Rules, Log Scaling	Log Scaling, Log Grading
2/24	Review	<b><i>Exam 1</i></b>
3/3	Statistical Methods, Sampling Design	Statistical Methods
3/10	Variable Plot Sampling	Sampling Design
3/17	Variable Plot Sampling	Basal Area Sampling
3/24	Fixed Plot Sampling	Fixed Plot Sampling
3/31	SPRING RECESS (NO CLASS)	
4/7	Inventorying w/ 3P Sampling	Inventorying w/ 3P Sampling
4/14	Tree Growth, Stand-Table Projection	Volume Equations
4/21	Review	<b><i>Exam 2</i></b>
4/28	Timber Cruising	Timber Cruising
5/5	Timber Cruising	Timber Cruising
5/12	Review	Review Open Lab
5/19	Wednesday 7:00 – 8:50 am Final Exam	