

## **FOR202 Forest Mensuration**

### **Spring 2016**

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Office hours: T, R 11:00-12:00  
or by appointment

**Lectures:** T, R 10:00-11:00 in Forestry 206

**Labs:** section 1 M 3:10-6:00 Stone Hall 106

#### ***Prerequisites:***

Forest Biometrics (FOR 201) **or** STAT 216 (MATH 241) **or** SOCI 202 (SOC 202) **or** WILD 240 (WBIO 240); and M 121 and M 122 (MATH 111 and MATH 112) **or** M 151 (MATH 121) **or** M 162 (MATH 150) **or** M 171 (MATH 152) **or** M 172 (MATH 153).

#### ***Learning Outcomes*** (you will be able to):

- 1) Orient yourself in the woods and be able to measure stand areas
- 2) Measure tree and stand characteristics
- 3) Understand common sampling and statistical strategies used in forest inventory
- 4) Know how to estimate merchantable timber volumes and board feet in stands
- 5) Understand principles of tree and stand growth as well as be able to estimate site quality.
- 6) Simulate stand growth over time and project stand yields

Textbook (optional and will be on reserve in the library): Forest Mensuration, 4<sup>th</sup> ed. By Husch, Beers, and Kershaw

#### ***Grading:***

There will be 480 points possible in the course. There will be two exams worth 100 points each. There will be 9 lab exercises worth 20 points each. Lastly, there will be a final group project worth 100 points. Letter grades will be based on the percentage of points earned and will follow the standard academic scale: A (>90%); B (80-89%); C (70-79%); D (60-69%); F (<60%)

#### ***Exams:***

There will be two mid-term exams. You can bring a calculator to the exam. I will provide a list of relevant formulas.

#### ***Labs:***

There will be 9 weekly labs that consist of field work, problem solving, and computing. Some of these will be individual assignments. Some will be group assignments. Labs will be due at the beginning of the following week's lab unless otherwise noted. Late assignments will be penalized 4 points per day. If a student needs to miss a lab, inform the TA ahead of time so arrangements can be made.  
Final Project: The final project will synthesize much of the techniques and skills you learn over the period of the course. Groups will design and implement a forest inventory for a stand at Lubrecht Experimental Forest, followed by analysis of that data. The final project will require one Saturday field trip to Lubrecht experimental forest. During the week prior to finals, each group will present their approach, findings, and

conclusions in both a written and oral format. Oral and written presentations will be graded based on their thoroughness as well as their technical and professional merits. Of the 100 points awarded, 70 will be for individual performance, while the remainder (30 points) will be for group performance.

Week	Date	Lecture	Lab
1	Jan 25	Introduction/Scales of measurements/ geometry and trigonometry review/Tree attributes	<b>None</b>
2	Feb 1	Tree attributes/tree form	Lab1 Tree measurements
3	Feb 8	Determining tree volume	Lab 2 Tree taper
4	Feb 15	<b>2/15 Presidents Day (no classes)</b> Determining tree volume and weight	<b>None</b>
5	Feb 22	Sampling and statistical concepts –means and measures of dispersion, frequencies, sample size, error	Lab3 Board feet and log rules
6	Feb 29	Stand attributes-composition, age, diameter <b>Mid term exam #1: Thurs Mar 3rd</b>	Lab 4 Pacing and orientation
7	Mar 7	Stand attributes-height, density and stocking, competition	Lab 5 stand tables
8	Mar 14	Stand attributes – site quality, site index, volume	Lab 6 combined stand and stock tables
9	Mar 21	Sampling – random, systematic, stratified random, fixed area plots, stand and stock tables	Lab 7 Simple random sampling with fixed area plots
10	Mar 28	Sampling-variable probability sampling, distance based sampling, Timber cruise design	Lab 8. Point sampling
11	Apr 4	<b>Spring Break</b>	<b>No labs</b>
12	Apr 11	Tree and stand growth, growth and yield models <b>Field trip to Lubrecht: Saturday April 16th</b>	Lab9 Stand and stock tables. Intro to FVS
13	Apr 18	Forest fuels and sampling <b>Mid term exam #2: Thurs April 21</b>	<b>Exam review</b> optional(Growth and yield projection with FVS)
14	Apr 25	Landscapes and measurements	Final project preparation
15	May 2	Advanced topics in sample design	<b>Final project presentations</b>

***Students with Disabilities***

- The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students (DSS). If you think you may have a disability adversely affecting your academic performance, and you have not already registered with DSS, please contact DSS in Lommason 154 or 406 243 2243. I will work with you and DSS to provide an appropriate accommodation.

***Student Conduct Code***

- All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at: [Student Conduct Code](http://www.umt.edu/vpsa/policies/student_conduct.php) ([http://www.umt.edu/vpsa/policies/student\\_conduct.php](http://www.umt.edu/vpsa/policies/student_conduct.php))

***Grading Option***

- Please note, this class is offered for traditional letter grade only, it is not offered under the credit/no credit option.

***Course Withdrawal Deadlines***

Important Dates Restricting Opportunities to Drop a Course Spring 2016:

<b>Number of Days</b>	<b>Opportunities to Drop a Course</b>	<b>Dates to Drop by</b>
To 15 <sup>th</sup> instructional day	Students can drop classes on cyberbear	February 12 = last day
16 <sup>th</sup> to 45 <sup>th</sup> instructional day	Drop requires form with instructor and advisor signature, a \$10 fee from registrar’s office, student will receive a ‘W’.	February 13 through March 28
Beginning 46 <sup>th</sup> instructional day	Students are only allowed to drop a class under very limited and unusual circumstances. Not doing well in the class, deciding you are concerned about how the class grade might affect your GPA, deciding you did not want to take the class after all, and similar reasons are not among those limited and unusual circumstances. If you want to drop the class for these sorts of reasons, make sure you do so by the end of the 45 <sup>th</sup> instructional day of the semester.	March 29th