

FOR 235 : RESOURCE MEASUREMENTS

Transcript title

Resource Measurements

Credits

4

Grading mode

Standard letter grades

Total contact hours

60

Lecture hours

30

Lab hours

30

Recommended preparation

MTH 102 or a course from the foundational requirements math list.

Course Description

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.

Course learning outcomes

1. Measure tree height and diameter.
2. Determine tree volume using single and multiple entry volume tables.
3. Scale logs and determine gross volume using board foot log rules and cubic foot formulas.
4. Implement fixed plot and variable plot cruise layouts.
5. Conduct a simple fixed or variable plot cruise, and determine gross volume.
6. Conduct regeneration surveys for trees and shrubs.
7. Measure wildlife habitat attributes such as shrub and canopy cover, forage availability, and hiding cover.
8. Calculate wildlife population parameters such as sex ratio and density from trapping or observation data.
9. Define and explain basic terms and procedures of statistical sampling, such as population, variables, bias, accuracy, and precision.
10. Calculate mean, standard deviation, standard error of the mean, and construct a confidence interval about the mean for simple data sets.

Content outline

- Resource measurements
- Statistics
- Sampling methods
- Tree and log volumes

- Cruising
- Fixed plot cruising
- Point sampling
- Log scaling
- Lumber tally/scaling wrap-up
- Defect estimation
- Regeneration surveys
- Wildlife and range resources
- Quantifying vegetation, forage, and habitat
- Measuring cover
- Sampling wildlife populations
- Presenting data

Required materials

Textbook required, see syllabus for details.