NREM 5133: ADVANCED FOREST BIOMETRICS
COURSE OUTLINE,

I. INTRODUCTION

This course will deal with advanced topics in forest biometrics including models for individual tree volume, weight and upper-stem taper, plot volume and weight estimation, quantitative evaluation of forest stand density, quantitative evaluation of site quality, and growth and yield modeling for forest stands. Extensive use will be made of methods of simple and multiple linear and non-linear regression analysis for modeling the relationships between variables at the individual tree and stand level.

Classtime: To be arranged

Classroom: To be arranged

Prerequisites FOR 3663 Forest Biometrics or equivalent undergraduate-level forest measurements-biometrics; STAT 4013 Statistical Methods I, STAT 5013 Statistics for Experimenters or equivalent introduction to applied statistics, MATH 2103 Elementary Calculus or equivalent introduction to calculus. Previous exposure to a statistical computer package such as SAS (Statistical Analysis System) highly desirable.

II. INSTRUCTOR

Dr. Thomas B. Lynch

Office: 008G Ag Hall Telephone: 744-5447

Although I’m not setting specific office hours, I’m frequently available in my office during working hours. I encourage you to feel free to consult me in my office whenever you have questions or problems relating to this course.

III. TEXT AND CLASS MATERIALS


Miscellaneous assigned readings.
IV. OUTLINE

A. Review topics in simple and multiple linear regression analysis.

B. Volume estimation and measurement for tree boles and bole sections.

C. Models for prediction of individual tree volume, taper and weight.

D. Quantitative methods of site quality evaluation.

E. Quantitative methods for evaluation of stocking and forest stand density.

F. Prediction of forest growth and yield

G. Mixed model estimation

V. CLASS ASSIGNMENTS AND TESTS:

A. Homework assignments: Several homework assignments (approx. 5-8) will be made in order to enhance understanding of the topics covered in the course.

B. Class project: Each student will complete a class project that deals with quantitative analysis of forestry data. The data and problem should be of the student’s own choosing and may come from the student’s research project. The project should be approved by the instructor.

C. Tests: Two tests will be given, a midterm examination and a comprehensive final examination.

VI. GRADING CRITERIA:

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<td>Homework assignments</td>
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<td>Midterm examination</td>
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<td>Class project</td>
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