Natural Resources Measurement and Inventory
NRM 340 – 3 credits
Fall Semester 2004

Course Information
Location: 359 O'Neill
Meeting Time: Lecture - WF 10:30-11:30; Lab - F 2:00-5:00
Prerequisites: Junior class standing or permission of the instructor.

Instructor
Dr. Scott Rupp, 368 O'Neill; x7535; ffsr@uaf.edu; office hrs WF 11:30-12:30 or by appointment

Course Materials
Textbook: There is NO required text for this course. Course material will be provided as handouts in class, links on the web, and/or on reserve in the library.
Website: http://www.faculty.uaf.edu/ffsr/Classes/nrm340.html

Course Description
This course is intended to familiarize students with terminology, tools, and techniques used in measuring and taking inventory of natural resources including land, timber and vegetation, and wildlife resources. The course has been designed to develop basic inventory field skills and student appreciation for the relationship between field measurements and resource management problem solving.

The lecture component of this course will focus on the theory and application of inventory techniques to assess natural resource availability and condition, and develop an understanding of their use to meet management objectives. The course will focus on the measurement and inventory of timber and associated vegetation, but will also introduce students to other resource inventory methods and techniques.

The lab component of this course will focus on traditional and state-of-the art equipment and methods used for inventory of timber and vegetation. In addition the students will learn how to utilize and synthesize measurement and inventory data to solve natural resource management problems.

Course Goals/Learning Objectives
- Learn how to measure various tree characteristics
- Learn how to use maps
- Learn how to use a compass and GPS
- Learn how to calculate tree volume, biomass and fuel loadings
- Provide introduction/overview of statistical and sampling theory
- Learn how to conduct basic forest inventories
- Provide introduction/overview of wildlife sampling theory
- Learn how to sample vegetation characteristics including diversity measures
- Learn how to use spreadsheets
- Learn how to calculate and project tree growth

Instructional Methods
The lab component of this course is best thought of as a block of time available, as needed, for demonstrations, fieldwork, guest speakers, student activities, problem solving, or lecture. If the lab session is used by the instructor for lecture, no longer than 1.5 hours will be involved.

Most labs and several lecture periods will be conducted outside regardless of weather conditions. Please be prepared for rain, snow, and/or cold temperatures.

Homework and reading assignments will be assigned in class.

Course Schedule
This schedule is subject to change based upon the progress and interests of the students.

Day	Date	Lecture	Lab
F	Sep 03	Introduction	Spreadsheets
W	Sep 08	Measurement Concepts	
F	Sep 10	Vegetation Sampling; Fuel Loads	Veg. Sampling; Fuel Loads
W	Sep 15	Measuring Trees	
F	Sep 17	Measuring Trees	Measuring Trees
W	Sep 22	Forest Inventories	
F	Sep 24	Fixed Area Sampling	Fixed Area Sampling
W	Sep 29	Forest Inventories	
F	Oct 01	Point Sampling	Point Sampling
W	Oct 06	Forest Inventories	
F	Oct 08	GPS; Maps	GPS; Maps
W	Oct 13	Survey Systems	
F	Oct 15	Compass; Maps	Compass; Maps
W	Oct 20	**Midterm Exam**	
F	Oct 22	Statistics	Statistics
W	Oct 27	Statistics	
F	Oct 29	Statistics; Sampling	Statistics; Sampling
W	Nov 03	Sampling	
F	Nov 05	Sampling	Sampling
W	Nov 10	Calculating Tree Volume	
F	Nov 12	Calculating Tree Volume	Calculating Tree Volume
W	Nov 17	Measuring and Calculating Biomass	
F	Nov 19	Tree Growth	Tree Growth
W	Nov 24	Measuring and Calculating Diversity	
F	Nov 26	**THANKSGIVING BREAK**	NO LAB
W	Dec 01	Calculating Fuel Loads	
F	Dec 03	Wildlife Measurements	Wildlife Measurements
W	Dec 08	Wildlife Measurements	
F	Dec 10	Review	Advanced Spreadsheets
F	Dec 17	**Final Exam – 10:15-12:15**	

Course Policies
The student is responsible for all material distributed and presented in lectures and laboratory. Lecture attendance is very important. You will not score well on homework assignments or exams unless you consistently attend lectures. Laboratory attendance is mandatory; please plan on attending each laboratory session; unexcused absences may result in a failing grade.

Grading Policy
The grade received in this course will be based upon performance on exams, quizzes, homework and lab assignments, and attendance. The following weighting scale will apply:

Midterm Exam	25%
Final Exam	25%
Homework	15%
Lab Assignments	35%
Total	**100%**

The following grading scale will apply:

A - 93 to 100
B - 85 to 92
C - 76 to 84
D - 68 to 75
F - $\leq$ 68

The instructor reserves the right to modify the final grade in consideration of notable progress demonstrated by an individual, or unforeseen and extenuating circumstances. In such cases, extra credit assignments and/or makeup work may be used at the discretion of the instructor. Homework and lab assignments handed in the week after the due date will receive reduced credit; assignments not handed in within one week of the due date will receive NO credit.

Students are expected to read, understand, and adhere to the student code of conduct detailed in the UAF Catalog.

Disabilities Services
The University of Alaska Fairbanks is committed to providing equal access for students with disabilities. The Office of Disability Services implements the Americans with Disabilities Act (ADA), and insures that UAF students have equal access to the campus and course materials. I will work with the Office of Disabilities Services (203 WHIT, 474-7043) to provide reasonable accommodation to students with disabilities. If you have a physical or learning disability, please advise me in writing of any special consideration necessary by the beginning of the second class. I will do everything possible to accommodate you in accordance with the Americans with Disabilities Act.