NR 5320
Forest Management
3 Semester Hours

Objective: Learn the concepts and methods of managing forests for timber production sustainably in combination with other management goals. This includes the concepts of forest growth and yield, forest regulation, forest finance and economics.

Instructor: Dr. Roger A. Williams
367C Kottman Hall
Email: williams.1577@osu.edu
Office hours: by appointment.

Location and Time: Kottman Hall, room 245
T, H 12:45 - 2:05pm


Note: The textbook is not required, but is recommended. It can be purchased at many of the bookstore websites (Amazon, Barnes and Noble, etc.). Reserve copies of the text will be placed in the Agricultural Library located in the Ag Admin Building.

Grading:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
<th>Grade</th>
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<tbody>
<tr>
<td>Exam 1</td>
<td>20%</td>
<td>100-93</td>
<td>A</td>
<td>76-73</td>
<td>C</td>
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<tr>
<td>Exam 2</td>
<td>20%</td>
<td>92-90</td>
<td>A -</td>
<td>72-70</td>
<td>C -</td>
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<tr>
<td>Final Exam</td>
<td>30%</td>
<td>89-87</td>
<td>B +</td>
<td>69-67</td>
<td>D +</td>
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<tr>
<td>Homework</td>
<td>30%</td>
<td>86-83</td>
<td>B</td>
<td>66-60</td>
<td>D</td>
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<td></td>
<td></td>
<td>82-80</td>
<td>B -</td>
<td>59-0</td>
<td>E</td>
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<td>79-77</td>
<td>C+</td>
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Exam Dates:

Exam 1: February 15
Exam 2: March 29
Final Exam: April 26, 2pm - 3:45pm (Final exam is comprehensive)

Other Important Dates:

March 13 and 15: NO CLASS (Spring Break)
April 19: Last class day

Attendance: Attendance is required and is regarded as a privilege. Although attendance is not used in the numerical determination of the course grade, it obviously has a direct influence on the student’s performance.
### Disability Services
The University strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

### Homework Policy
All homework assignments will be due on the date indicated by the instructor. A 10% reduction in grade will apply for each day an assignment is late (including weekends). Even though some assignments might be performed as group activities, each individual will be required to turn-in their own assignment.

### Course Evaluation and Misconduct
Final averages will be rounded upward to the next highest whole number for assigning letter grades, and letter grades are assigned as indicated on the previous page. All concerns about grades must be presented to me in writing within 5 days after you are informed of the grade. Written proof (e.g., doctor’s excuse) must be presented to acquire excused absences, or if known ahead of time, please consult with the instructor concerning your planned absence. Academic misconduct of any type will not be tolerated, as required by the university policy (Faculty Rule 3335-5-54) on academic misconduct: “Each instructor shall report to the Committee on Academic Misconduct all instances of what he or she believes may be academic misconduct.”

### Diversity and Inclusion
The School of Environment and Natural Resources promotes a welcoming and inclusive environment for all students and staff, regardless of race, gender, ethnicity, national origin, disability or sexual orientation. There is no tolerance for hateful speech or actions. All violations of this policy should be reported to the OSU Bias Assessment and Response Team (BART, studentaffairs.osu.edu/bias). SENR encourages diversity at all levels, particularly among the next generation of colleagues. Students are encouraged to participate in organizations that provide support; see for example College of Arts and Sciences resources: artsandsciences.osu.edu/ stem-organizations

### Course Outline (Topics)

<table>
<thead>
<tr>
<th>I. Introduction (Chp. 1)</th>
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<tbody>
<tr>
<td>A. What is forest management and sustainability?</td>
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<td>B. Current Resource Overview</td>
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<td>B. Forest management decisions and approaches (overview)</td>
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<td>C. The management driver – policy and goals</td>
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<td>D. The role of Forest certification in management decisions</td>
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<tr>
<th>II. Forest Management Concepts (Chp. 2)</th>
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<tbody>
<tr>
<td>A. Ecological— natural disturbance patterns</td>
<td></td>
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<tr>
<td>B. Economic— maximizing net benefits</td>
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<td>C. Social benefits and policy</td>
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<th>III. Basic Elements and Methods of Forest Management (Chp. 3)</th>
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<tr>
<td>A. Understanding the forest – You need to get to know your forest</td>
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<td>A. Developing prescriptions</td>
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<td>B. Use of land classification</td>
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<td>C. Predictions of conditions and outcomes for management planning</td>
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<td>D. Selecting the appropriate silvicultural system</td>
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### NOTE:
While the textbook is not required, corresponding chapters of the textbook are listed in the course outline for those who wish to read the textbook for more in-depth information on the course subject. In most cases the textbook is not necessary to perform well in the course. The purpose of the textbook is to provide supplemental and more in-depth information. Some individuals may find the textbook helpful, while others find no need of it.
IV. Fundamentals of Forest Growth, Structure, and Development (Chp. 4)
   A. Measures of forest growth
   B. Long-term forest structure and dynamics—quantification
   C. Effects of site quality, density, and stocking

V. Forest Growth Models (Chp. 5)
   A. Whole stand models—variable density and density free
   B. Diameter class models
   C. Individual tree models

VI. Classical Approaches to Management (Chp. 10)
   A. Area control to regulate forests
   B. Volume control to regulate forests
   C. Combination of area and volume regulation
   D. Harvest scheduling

VII. Forest Finance and Valuation (Chps. 7, 8)
   A. Tree and stand-level financial analysis
   B. Valuation and appraisal of tree and stand; timber and timberland
   C. Valuation of forest land
   D. Stumpage appraisal and use
   E. Valuation of non-timber outputs
   G. Estimation of demand and willingness to pay
   H. Considerations of forest product choices

VIII. Evaluation and Comparison of Management Alternatives (Chp. 9)
   A. Information for decision making
   B. Evaluation criteria
   C. Ecological criteria
   D. Economic criteria
   E. Social criteria

IX. Spatial and Multiple Ownership Considerations and Approaches (Chp. 13, 14)
   A. Spatial recognition in analysis
   B. Integrating multiple ownerships
   C. Tactical planning actions

X. Linear Programming
   A. Use in management strategies
   B. Optimization and Maximizing concepts and use