Silviculture

11:216:471

Spring Semester

Silviculture is the Art and Science of controlling the establishment, growth, composition, health and quality of forests and woodlands to meet the diverse needs and values of landowners and society on a sustainable basis.

*The Dictionary of Forestry; Helms 1998*

The objectives of this independent study in Silviculture will be:

- To study the practices of silviculture and their application in managing forest stands to sustain ecosystem values and serve the interests of landowners
- To see examples of ways different methods are applied in an operational setting and for different purposes
- To practice techniques for stand assessment and prescription making

This course provides a detailed introduction to the concepts and practices which underpin the care and management of forested ecosystems toward defined values, products and services. The course stresses field activities and a pair of day-long trips to working forest systems to underscore concepts in the text and class discussions. Students will learn about the development of silvicultural prescriptions for sustained yield of identified products, services or ecological functions with discussion of the complications of such work within a multiple use, multiple stakeholder land use pattern.

Class assessment and grading will be centered on discussion of assigned reading along with written responses to determine understanding of concepts, along with mid-term and final projects.

### Grading:

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<thead>
<tr>
<th></th>
<th>% Final Grade</th>
<th>Grading Assignment</th>
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<tbody>
<tr>
<td>Project I</td>
<td>25</td>
<td>A = 100-90%</td>
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<tr>
<td>Project II</td>
<td>25</td>
<td>B+ = 87.0-89.9%</td>
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<tr>
<td>Reading checks / participation</td>
<td>40</td>
<td>B = 80.0% - 86.9%</td>
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<tr>
<td>Written responses</td>
<td>10</td>
<td>C+ = 77.0-79.9%</td>
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<td></td>
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<td>C = 70.0-76.9%</td>
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<td>D = 69.9-60%</td>
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TEXT:

Silviculture
Concepts and Applications
Third Edition
Ralph Nyland in collaboration with Laura S. Kenefic, Kimberly K. Bohn, and Susan L. Stout
LECTURE SCHEDULE

1/17  Introductions, Definitions, Backgrounds
      Philosophy of Silviculture
      Read Nyland chapter  1 & 2

1/24  Silvicultural Systems
      Uneven Aged Management
      Even Aged Management
      Urban Context...
      Read Nyland chapter  3 & 4

1/31  Field Trip – Introduction to Silviculture Practice
      Brendan Byrne State Forest
      Whiting Wildlife Management Area
      Double Trouble State Park
      Read Nyland chapter  5 & 6

2/7   Goals of Silviculture
      Commodity Production
      Harvesting
      Other Management Goals (wildlife, etc.)
      Environmental Services
      Urban Context...
      Read Nyland chapter  7 & 8

2/14  Regeneration
      Concepts
      Harvesting
      Site Preparation
      Nursery and Planting Operations
      Read Nyland chapter  9 & 10

2/21  Regeneration
      Methods in terms of Silvicultural Systems
      Urban Context...
      Read Nyland chapter  11 & 12

2/28  Field Trip – TBD
      Read Nyland chapter  13 & 14

3/7   Mid Term Project Due
      Read Nyland chapter  15 & 16

3/21  Stocking / Relative Density Index
      Interpretation & Goals
      Urban Context...
Read Nyland chapter 17 & 18

3/28  Thinning and Release Treatments
      Uneven Aged Management
      Urban Context...
      Models
      Read Nyland chapter 19 & 20

4/4    Thinning and Release Treatments
      Even Aged Management
      Urban Context...
      Models
      Read Nyland chapter 21 & 22

4/11   Other...
      Managing for Quality
      Forest Health
      Improvement / Salvage / Sanitation Cutting
      Fire
      Exploitation and Rehabilitation
      Read Nyland chapter 23 & 24

4/18   Field Trip – TBD
      Stand Rehabilitation
      Read Nyland chapter 25 & 26

4/25   Review and discuss final project...???

Missed classes
A significant part of instruction revolves around class activities and simulations, which cannot be made up if missed. It is therefore important (for your learning and your grade) to attend every class. Your grade reflects the importance of your attendance and engagement. If you know ahead of time that you will be absent, please notify me. Rutgers uses an online reporting system for illnesses. Please use this to report if you are ill, and follow up with an email once you are able.

Technology use
Occasionally I will ask you to bring a laptop computer to class if you are able. In such situations, computers are to be used for the given activity only. Unless expressly stated, all computers and cell phones are to be turned off (no dingi, beeping, buzzing, or chirping!) and put away during class. We will take a break midway through the class period. During this time you are welcome to use your phones and computers as you wish.
Other resources

Please be aware that there are numerous resources and services available to you as students.

CAPS – Counseling, ADAP, and Psychiatric Services
http://rhscaps.rutgers.edu/

Office of Disability Services
https://ods.rutgers.edu/

Rutgers Learning Centers
https://rlc.rutgers.edu/

Rutgers Libraries
http://www.libraries.rutgers.edu/