

## NRM 5303 Silviculture

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Instructor: Dr. Ryan Luna  
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Textbook: Hendee J.C., Dawson, C.P., and Sharpe, W.F. 2012. Introduction to Forests and Renewable Resources. Eighth Edition. Waveland Press, Long Grove, IL. 480 p. **Textbook optional**

Nyland, R.D. 2002. Silviculture: Concepts and applications. Waveland Press, Long Grove, IL. 682 p. **Textbook optional**

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### COURSE OVERVIEW

#### Course Description

A study of ecologically based manipulations of forests to achieve desired management objectives. Students will learn how to develop and apply silvicultural prescriptions and learn the effects of these prescriptions on timber and non-timber forest benefits, forest health and biodiversity, soil, and water resources as well as their effect on broader social, economic, and ecological issues.

#### Course Objectives

1. Describe common silvicultural terms and techniques used in establishing and influencing composition, growth, and quality of forests.
2. When given a silvicultural prescription, you will be able to describe how the silvicultural prescription influences timber production, forest health, biodiversity, soil and water resources, and non-timber products/benefits. You will also be able to describe how the silvicultural prescription influences social, economic, and ecological issues.
3. When given land management objectives, you will be able to develop silvicultural prescriptions using various silvicultural concepts.
4. Describe the ecology and management of forest ecosystems

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## Grading Procedures – Assignments, Grading Criteria, Letter Grades

Exams (3@ 20% ea)	60%	Exams will be closed note/book.
Assignments (4 @ 5%ea)	20%	
Silviculture project	20%	

### Letter Grades\*

A = 90 to 100; B = 80 to 89; C = 70 to 79; D = 60 to 69; E = <60

### Course Outline

- 1 – What is silviculture
- 2 – Forest stand dynamics, growth, and yield
- 3 – Tree removal practices
- 4 -- Release and intermediate treatments
- 5 – Thinning methods
- 6 -- Prescribed Fire and fire behavior

#### Exam 1

- 7 – Concepts of regeneration
- 8 -- Even-aged regeneration methods
- 9 -- Two-aged and uneven-aged regeneration methods
- 10 – Site preparation
- 11 – Artificial regeneration

#### Exam 2

- 12 – Bottomland hardwood ecology and silviculture
- 13 – Ecology basis for silviculture
- 14 – Invasive Species
- 15 – Plantation Management

#### Comprehensive final exam

### Assignments:

Assignments will consist of 2 parts. The first will be a summary of the paper assigned. The second component will be to answer a problem set using information from the paper.

### Silviculture Project:

Pick the forest of your choice and develop a management plan for this area. The plan should cover current tree estimates per acre, how you select for harvest, methods of harvest/removal, and post-harvest restoration/regeneration.

Management plan should also include a time frame and a budget. Please use CBE style for citations in your paper. You can use pictures that you find on the internet but be sure that you give credit and include the internet site in your literature cited. You will need to write it using proper style, punctuation, spelling, and grammar. It will need to be at least 7 pages long with 12 point font, double spaced, with 1” margins. The literature cited page will count toward the total number of pages. If you use pictures or figures, each one must be on a page by itself, following the first mention of it in your text. The picture, table, or figure must be labeled with an appropriate caption. Pictures will not count toward the total page count.