

## FORESTRY 432 - SILVICULTURE

Syllabus – Fall 2022

### Instructors:

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### Office Hours:

Monday 300-500 and open door policy

**Quick Note (right up front):** You can use any of the stuff from this class for your own use (I recommend you archive it because you may want the info in a few years); however, NONE of the material from class is to be posted or otherwise electronically published. I feel stupid putting this in the syllabus, but apparently notes from my classes are now on-line. I do not want that.

### Learning Outcomes

- Characterize all major silvicultural systems by recognition of when a system is appropriate or inappropriate for a specific site.
- Demonstrate knowledge of regeneration survey by proposing appropriate survey methods for species with various reproductive strategies.
- Demonstrate knowledge of forest stand response to aging, disturbance or stand treatments (forest stand dynamics) by predicting the outcome of management or natural occurrences
- Characterize the response of natural and artificial regeneration to various regeneration conditions and use this knowledge to propose methods for achieving successful regeneration
- Demonstrate knowledge of several methods of density management for forest stands (stocking charts, stand density diagrams and stand density indices) by proposing stand treatments for various species mixes.
- Demonstrate knowledge of the principle of vegetation management (mechanical and chemical vegetation control, fertilization and pesticide use) by proposing vegetation management strategies for various stand and urban forest conditions .
- Combine knowledge of all of the above skills to propose management activities for parcels (private rural, industrial/investment, urban, recreational and others) that meet landowners goals (both commodity and non-commodity uses)

### Learning Outcome Alignment with SAF Guidelines

“Students must demonstrate the following competencies:

- an ability to develop, apply, and understand the effects of silvicultural prescriptions appropriate to management objectives, including methods of establishing and influencing the composition, growth, and quality of forests;
- an ability to analyze the economic, environmental, and social consequences of forest resource management strategies and decisions;
- an ability to develop management plans with specific multiple objectives and constraints”

### *Full Day Marking Camp*

This will be the week of October 17, 2022. My opinion is that most forest management in this part of the world starts and ends with a paint gun, I want for you to go out being able to use one with confidence both from background science as well as practical application.

### TEXT

No text for this class

## GRADING POLICY

Grades will be determined as shown below.

### Individual grades

|                                   |       |
|-----------------------------------|-------|
| Exam one                          | = 20% |
| Final exam                        | = 20% |
| Quizzes, summaries and reflection | = 30% |

### Lab

|                             |      |
|-----------------------------|------|
| Management plan (all parts) | =30% |
|-----------------------------|------|

## Letter Grade Definitions

|              |    |
|--------------|----|
| 92.50-100.00 | A  |
| 89.50- 92.49 | A- |
| 86.50- 89.49 | B+ |
| etc.         |    |

## INSTRUCTORS' POLICIES

### Exams and Quizzes

- All of the basic stuff will be done in quiz format (i.e. Canvas quizzes)
- The exams will be based on higher level learning (generally they will be essay exams or short answer). I do not care if you discuss your answers with your friends for the exam, but, I will tolerate zero plagiarism on this. You will write it all in your own words and this will be checked using the Turn-it-in software. If I get more than 5% cross-over, I will immediately report it, following academic misconduct policies, and let the powers in charge of that follow it through. I have changed the format of these exams to make them more substantive learning experiences. However, if you do not do your part, and instead cheat, I have no sympathy at all for that crap. If you are not making the world a better place, you are making it a worse place. Be a power for making it better.

## OTHER ASSIGNMENTS

- In Canvas, you will find copies articles and papers (refer to the last page of the syllabus to see the assignments and due dates). You are expected to read these articles and prepare a summary of the information found in each. This summary will include the following two things: 1) what were the main topics of each paper (about 5 bulleted summary points), 2) a 2-5 sentence summary of your opinion of what you have just read in each article. This generally will take 1-2 pages per article.
- These assignments can be done individually or in groups of up to 5 people (I encourage you to do this as an outside of class discussion group...zoom is awesome for this... but this is solely at your discretion). If this is done as a group, one of the people turns it into Canvas with everyone's name on it.
- Note: while this is a graded assignment, the main goal of the paper summaries is to get you to read the papers. These have been chosen because they coincide with materials that I am covering in class or lab. Whether you work in groups or not is up to you.
- Grading on these summaries will be as follows:
  - (4/4)- This indicates that you hit all of the main points in the article and obviously thought out an opinion on what you read.
  - (3/4)- This indicates that you read the articles but not quite carefully enough to hit the main points.
  - (2/4)- You basically tried but something was seriously in error.
  - (0/4)- You either turned in nothing or what you turned in seems to be a better summary of the lyrics to Ozzy's "Iron Man" than a summary of the paper.

## Example article summary for a fictitious article

*Article: The impact of oak reserve trees on natural regeneration on dry, nutrient-poor sites*

1. *Maintenance of reserve trees is being promoted in Wisconsin to address goals of land ownership beyond the production of timber*
2. *Generally, oak reserve trees in Wisconsin (particularly northern pin oak) have a higher rate of mortality than in the eastern state where similar research has been conducted*
3. *Oak reserve trees up to 15 square feet of basal area did not reduce advanced regeneration success*
4. *Oak reserve trees beyond 15 square feet of basal area had a near linear reduction in advanced regeneration*
5. *Maintenance of moderate levels of oak reserve trees can provide for other landowner goals without impacting the success of regeneration*

*My opinion*

*On sites where timber productivity is not the main goal, primarily small private landownerships, oak reserve trees can potentially serve multiple purposes. Reserve trees can provide mast, shade and structure as well as serve as a source of snags and coarse woody debris as the age. Because up to 15 square feet of basal area there is no significant impact on regeneration suggests that for many landowners, this level of retention or even somewhat higher is appropriate to help in meeting their goals.*

## LABORATORY EXERCISES

- During fall 2020, the Covid restrictions presented the opportunity for me to completely revamp the course. I did just that. The labs are always where I felt the learning happened the best. The lectures, in the past, were built to feed the information needed for the labs. That is amplified now. Please view all videos etc., before the labs. They were put together to prep students for the field work. Just a note, I put a TON of time into rebuilding this class, please, do your part.
- I have designed this lab to assist students in learning this content. Each of the main field activities that I do as a forester are included in this lab:
  - Management planning/Inventory/Prescriptions
  - Timber marking
  - Vegetation management
  - Scaling/grading/merchandizing.
- I, frankly, want you to come out of this class CONFIDENT in your ability to know what a stand needs for the main timber types in Wisconsin. For many of you, this will be your main job during your career and this class is literally the culmination of all of the other classes in forestry that you have had.

## CLASS ATTENDANCE

- Due to the nature of the course, attendance is going to be looked at differently for me. While you are expected to be at lab, “lecture” is online. I have a tool in Canvas that allows me to track time invested by students in the course. I also have the quizzes. If you pass the quizzes and have spent time on each module, I will count that as attendance for lecture. I expect attendance at the in-person labs.

## CLASS SCHEDULE

- Canvas is your friend for this class. You will use it a lot.

A proposed forester motto

*“If I could make a living from walking in the woods, you could bet I'd be sitting pretty good...”* Luke Bryan

Alternative proposed forester motto

*“Soaking in the rain, baking in the sun, don't quit 'til the job gets done”....* Jason Aldean

| Week starts with | Lecture  | Tuesday   | Thursday | Friday |
|------------------|--|---|----------|--------|
| 6-Sep            | Class Introduction (who I am, what is the class)<br>Log grading, merchandizing and scaling                 | Tree Merchandizing Training (Schmeeckle)                                |          |        |
| 13-Sep           | Forest Stand Dynamics/Silviculture Summary/Forestry Equipment  | Silviculture Field Tour (Bus)   |          |        |
| 20-Sep           | Science of thinning  | Tree Crown Area and Impacts of Thinning (Visitor Center)                |          |        |
| 27-Sep           | Even age systems-Clearcut/coppice<br>Focus on a species- Aspen, Red Pine, Jack Pine                        | Practice Timber Marking (North Central Schmeeckle)                      |          |        |
| 4-Oct            | Habitat Management- Grouse   | SOP 1: Aspen/Grouse/Woodcock Focus (Bus)                                |          |        |
| 11-Oct           | Even age systems- Seed tree and shelterwood<br>Focus on a species- White Pine, Oak, Central Hardwoods      | SOP 2: Red Pine End of Rotation (Bus)                                   |          |        |
| 18-Oct           | NA   | Marking Camp Week   |          |        |
| 25-Oct           | Herbicides   | SOP 3: Herbicide Prescriptions Lab (Schmeeckle South of Lake)           |          |        |
| 1-Nov            | Even age systems- Irregular shelterwood<br>Uneven Age Management<br>Focus on a Species- Northern Hardwoods | SOP 4: Central Hardwoods (Bus)  |          |        |
| 8-Nov            | Special Topic- Old Growth Restoration  | SOP 5: Old Growth Restoration and Management                            |          |        |
| 15-Nov           | Management Planning: Rolling it all together   | Meet in Groups to Complete your Plan                                    |          |        |
| 22-Nov           | Generally Accepted Practices   | No Lab (Thanksgiving week)  |          |        |
| 29-Nov           | Special Topic- Savannas, Oak Woodlands and Barrens   | SOP 7: Oak savanna and woodland restoration (Schmeeckle Visitor Center) |          |        |
| 6-Dec            | Special Topic- Agroforestry  | Visit Village of Plover Conservancy and LPR (Bus)                       |          |        |

## Schedule for Reading/Stand Data Summaries

### Due Date

Oct 3 Tree Genetics Topics

Rousseau “What are genetically improved seedlings”  
WI DNR Forest Genetics Program “Strategic Plan”

Oct 10 Oak Site Treatments

Demchik et al. “Observations of the Impact of Soil Scarification and Fire...”  
McEwan et al. “Multiple interacting ecosystem drivers”

Oct 17 Recovering High-grades and Irregular Shelterwood

Nyland “Rehabilitating Cutover Stands: Some Ideas to Ponder”  
Lussier and Meek “Managing Heterogenous Stands Using...”

Oct 24 UEA

Pond et al. “Sustainability of Selection System in Northern Hardwood Forests”

### Professionalism Statement

Students in the College of Natural Resources are pursuing courses of study that prepare them for careers as natural resources professionals. Thus, CNR students and faculty/staff are expected to exhibit conduct and attitudes appropriate to professionals. Conduct and attitudes appropriate for professionals include, but are not restricted to,

1. The UWSP Student Rights and Responsibilities are available via: [www.uwsp.edu/centers/rights](http://www.uwsp.edu/centers/rights)
2. Attitudes appropriate for resource professionals of the 21<sup>st</sup> Century:
  - a. Respect for others and for their ideas;
  - b. Appreciation for ethnic and gender diversity in the workplace;
  - c. Sensitivity to environmental quality;
  - d. Adherence to professional ethics, e.g. the Society of American Foresters Code of Ethics and other professional organization's codes of ethics.

Therefore, academic misconduct will not be tolerated.

Note the following as per the Univ. of Wisc.-Stevens Point Community Bill of Rights and Responsibilities:

#### UWSP 14.03 ACADEMIC MISCONDUCT SUBJECT TO DISCIPLINARY ACTION.

(1.) Academic misconduct is an act in which a student:

- (a) Seeks to claim credit for the work or efforts of another without authorization or citation;
  - (b) Uses unauthorized materials or fabricated data in any academic exercise;
  - (c) Forges or falsifies academic documents or records;
  - (d) Intentionally impedes or damages the academic work of others;
  - (e) Engages in conduct aimed at making false representation of a student's academic performance;
- or
- (f) Assists other students in any of these acts.
  - (g) Violates electronic communication policies or standards as agreed upon when logging on initially (See [uwsp.edu/it/policy](http://uwsp.edu/it/policy)).

(2) Examples of academic misconduct include, but are not limited to: cheating on an examination; collaborating with others in work to be presented, contrary to the stated rules of the course; submitting a paper or assignment as one's own work when a part or all of the paper or assignment is the work of another; submitting a paper or assignment that contains ideas or research of others without appropriately identifying the sources of those ideas; stealing examinations or course materials; submitting, if contrary to the rules of a course, work previously presented in another course; tampering with the laboratory experiment or computer program of another student; knowingly and intentionally assisting another student in any of the above, including assistance in an arrangement whereby any work, classroom performance, examination or other activity is submitted or performed by a person other than the student under whose name the work is submitted or performed.

#### UWSP 14.04 DISCIPLINARY SANCTIONS.

(1) The following are the disciplinary sanctions that may be imposed for academic misconduct in accordance with the procedures of s. UWSP 14.05, 14.06 or 14.07:

- (a) An oral reprimand;
- (b) A written reprimand presented only to the student;
- (c) An assignment to repeat the work, to be graded on its merits;
- (d) A lower or failing grade on the particular assignment or test;
- (e) A lower grade in the course;
- (f) A failing grade in the course;
- (g) Removal of the student from the course in progress;
- (h) A written reprimand to be included in the student's disciplinary file;
- (i) Disciplinary probation; or
- (j) Suspension or expulsion from the university.

(2) One or more of the disciplinary sanctions listed in sub. (1) may be imposed for an incident of academic misconduct.

## University of Wisconsin Stevens Point College of Natural Resources-Principles of Professionalism

The College of Natural Resources at the University of Wisconsin – Stevens Point prepares students for success as professionals in many fields. As a professional, there are expectations of attainment of several personal characteristics. These include:

### Integrity

Integrity refers to adherence to consistent moral and ethical principles. A person with integrity is honest and treats others fairly.

### Collegiality

Collegiality is a cooperative relationship. By being collegial you are respecting our shared commitment to student education through cooperative interaction. This applies to all involved in the process: students, staff, faculty, administration and involved community members. You take collective responsibility for the work performed together, helping the group attain its goals.

### Civility

Civility refers to politeness and courtesy in your interactions with others. Being civil requires that you consider the thoughts and conclusions of others and engage in thoughtful, constructive discussion to express your own thoughts and opinions.

### Inclusivity

Inclusivity requires you to be aware that perspective and culture will control how communication is understood by others. While many values are shared, some are quite different. These differences in values should be both considered and respected.

### Timeliness

Timeliness is the habit of performance of tasks and activities, planned in a way that allows you to meet deadlines. This increases workplace efficiency and demonstrates respect for others' time.

### Respect for Property

Respect for property is the appreciation of the economic or personal value an item maintains. Maintaining this respect can both reduce costs (increase the operable life of supplies and equipment) as well as demonstrate respect for others rights.

### Communication

Professional norms in communication require that you demonstrate the value of your colleagues, students, professors or others. The use of appropriate tone and vocabulary is expected across all forms of communication, whether that communication takes place face to face, in writing or electronically.

### Commitment to Quality

Quality is the ability to meet or exceed expectations. By having a commitment to quality, we intend to provide a learning environment that is conducive to learning. Intrinsic to this commitment to quality is defining expectation (committed to in a syllabus through learning outcomes), implementation (with quality control in place) and assessment (where meeting of learning outcomes is determined).

### Commitment to Learning

Learning is a lifelong process. By being committed to learning you are providing a model for all to follow. This model is not only professor to student but involves all combinations of people within our university and broader community

Adherence to this compact is required of the faculty and staff of the College of Natural Resources and of all students enrolled in College of Natural Resources courses.

## Forestry Anti-harassment Statement

### Introduction

In adopting this statement, the forestry discipline within the College of Natural Resources (CNR), at the University of Wisconsin-Stevens Point (UWSP) has expectations for professional behavior of its students, staff, faculty, and other associated parties. Anyone who has a reasonable belief that they, or another student, staff, faculty or guest, have been the victim of harassment, bullying, or discrimination, or any other violation in the statement herein, are encouraged and expected to report the conduct. See reporting options and guidelines at the end of this document.

The forestry discipline within the College of Natural Resources is committed to creating a safe, inclusive, and professional environment. The forestry discipline operates under the UWSP harassment, discrimination, and retaliation prevention guidelines, copied here:

*“The University of Wisconsin-Stevens Point (UWSP) is committed to fostering an environment that is safe, respectful, and inclusive to all and to educate all employees on these important issues. In addition, we are obligated, under Regent policy and federal regulations, to ensure our employees are informed on the issues of unlawful discrimination, harassment, and sexual violence.”*

### Statement

The forestry discipline, following the lead of the Society of American Foresters which accredits the B.S. forestry degree, believes we all have a responsibility in creating a safe, inclusive, professional environment in all forestry-related activities and events. All forms of discrimination, harassment, and bullying are prohibited. This applies to all participants in all settings (online and in-person) and locations (on- and off-campus) where forestry classes and associated activities are conducted, including student organization events and activities, committee meetings, workshops, conferences, and other work and social functions where employees, volunteers, sponsors, vendors, or guests are present.

Discrimination is prejudicial treatment of individuals or groups of people based on their race, color, creed, religion, age, sex, sexual orientation, gender identity or expression, national origin, ethnicity, ancestry, disability, pregnancy, marital or parental status, veteran status, or any other category protected by law.

Sexual harassment is unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature that creates an intimidating, hostile, or offensive environment. Sexual harassment constitutes discrimination and is illegal under federal, state, and local laws.

Bullying is unwelcome, aggressive behavior involving the use of influence, threat, intimidation, ridicule, hazing or coercion to dominate others in the professional environment. Bullying behavior may go beyond characteristics protected by applicable laws, including but not limited to, political views, dress, or other outward physical appearances.

Other types of harassment include any verbal or physical conduct directed at individuals or groups of people because of their race, ethnicity, color, national origin, sex, sexual orientation, gender identity, age, religion, disability, veteran status, or any other characteristic protected by applicable laws, that creates an intimidating, hostile, or offensive environment.

The following list, while not exhaustive, includes examples of unacceptable behavior: slurs, jokes, threats, or derogatory comments relating to the characteristics noted above. Examples of inappropriate physical harassment that violate this statement include, but are not limited to: assault, unwanted touching, or impeding or blocking movement. In addition, no individual may be denied admission to, or participation in or the benefits of, any UWSP-associated events. Similarly, the display or circulation of derogatory or demeaning posters, cards, cartoons, emails, texts, videos, and graffiti which relate to characteristics noted above violate this statement.



**Reporting**

Students, staff, faculty, or guests associated with Forestry-related programming who experience or witness incidents of harassment are strongly encouraged to report the incident. The Forestry discipline strongly urges the prompt reporting of complaints or concerns so that rapid and constructive action can be taken. Reporting can be done online or in person, to a faculty or staff member, and/or the UWSP Dean of Students. Anonymous reporting is available.

The UWSP Title IX Website is the home for all information related to harassment and discrimination, including reporting options, student and employee resources, and information about what happens after a report is submitted:

<https://www.uwsp.edu/titleix/Pages/default.aspx>

## Society of American Foresters Code of Ethics

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### Preamble

Service to society is the cornerstone of any profession. The profession of forestry serves society by fostering stewardship of the world's forests. Because forests provide valuable resources and perform critical ecological functions, they are vital to the wellbeing of both society and the biosphere.

Members of SAF have a deep and enduring love for the land, and are inspired by the profession's historic traditions, such as Gifford Pinchot's utilitarianism and Aldo Leopold's ecological conscience. In their various roles as practitioners, teachers, researchers, advisers, and administrators, foresters seek to sustain and protect a variety of forest uses and attributes, such as aesthetic values, air and water quality, biodiversity, recreation, timber production, and wildlife habitat.

The purpose of this Code of Ethics is to protect and serve society by inspiring, guiding, and governing members in the conduct of their professional lives. Compliance with the code demonstrates members' respect for the land and their commitment to the long-term management of ecosystems, and ensures just and honorable professional and human relationships, mutual confidence and respect, and competent service to society.

On joining the SAF, members assume a special responsibility to the profession and to society by promising to uphold and abide by the following:

### Principles and Pledges

1. **Foresters have a responsibility to manage land for both current and future generations. We pledge to practice and advocate management that will maintain the long-term capacity of the land to provide the variety of materials, uses, and values desired by landowners and society.**
2. **Society must respect forest landowners' rights and correspondingly, landowners have a land stewardship responsibility to society. We pledge to practice and advocate forest management in accordance with landowner objectives and professional standards, and to advise landowners of the consequences of deviating from such standards.**
3. **Sound science is the foundation of the forestry profession. We pledge to strive for continuous improvement of our methods and our personal knowledge and skills; to perform only those services for which we are qualified; and in the biological, physical, and social sciences to use the most appropriate data, methods, and technology.**
4. **Public policy related to forests must be based on both scientific principles and societal values. We pledge to use our knowledge and skills to help formulate sound forest policies and laws; to challenge and correct untrue statements about forestry; and to foster dialogue among foresters, other professionals, landowners, and the public regarding forest policies.**
5. **Honest and open communication, coupled with respect for information given in confidence, is essential to good service. We pledge to always present, to the best of our ability, accurate and complete information; to indicate on whose behalf any public statements are made; to fully disclose and resolve any existing or potential conflicts of interest; and to keep proprietary information confidential unless the appropriate person authorizes its disclosure.**
6. **Professional and civic behavior must be based on honesty, fairness, good will, and respect for the law. We pledge to conduct ourselves in a civil and dignified manner; to respect the needs, contributions, and viewpoints of others; and to give due credit to others for their methods, ideas, or assistance.**

## **Important information about online course materials and online course endeavors**

### **Instructor Recording and sharing class lectures**

If a lecture recording only includes the instructor, the recording is not a student record and not considered protected by FERPA. If a recording includes student interactions (questions, presentations, etc.) and those students are identifiable, the recording would be a protected educational record. The recording could only be made available to the students in that specific class and/or to university officials with legitimate educational interest in that information – a genuine need for access to perform their duties. If the instructor wishes to further share the recording outside of the class, either identifiable students would have to provide written consent to release their participation or portions of the recording would have to be changed or omitted to avoid identifying students. But again, if no students are identifiable in any way (seen, heard or named), the recording would not be FERPA protected. Additionally, recordings that include student interactions are appropriate for posting within Canvas.

### **Student Recording and Sharing Class Lecture**

Sometimes students record lectures or copy lecture materials (including instructor's recordings) and post them outside of class on internet sites or provide them to note sharing companies. These acts can violate intellectual property rights held by the instructor and the university. UW System Board of Regent policy authorizes instructors to limit or restrict students from copying, recording or using instructional materials or lectures unless necessary to reasonably accommodate a student's disability. [[Regent Policy Document 4-1](#)] If an instructor wishes to impose restrictions, the instructor should inform students of the limitations and the potential consequences of being subject to charges of student misconduct. Notification can be made through a syllabus, a lecture, or by other means to ensure awareness

*Given the above please note that Lecture/Lab materials and recordings for Any of Demchik's stuff at all are protected intellectual property at UW-Stevens Point. Students in this course may use the materials and recordings for their personal use related to participation in this class. Students may also take notes solely for their personal use. If a lecture/lab is not already recorded, you are not authorized to record lectures/labs without instructor permission unless you are considered by the university to be a qualified student with a disability requiring accommodation. [Regent Policy Document 4-1] Students may not copy or share lecture materials and recordings outside of class, including posting on internet sites or selling to commercial entities. Students are also prohibited from providing or selling their personal notes to anyone else or being paid for taking notes by any person or commercial firm without the instructor's express written permission. Unauthorized use of these copyrighted lecture materials and recordings constitutes copyright infringement and may be addressed under the university's policies, UWS Chapters 14 and 17, governing student academic and non-academic misconduct.*