

**ENR 5320 – FOREST MANAGEMENT****Spring 2023**

COURSE DESCRIPTION: Application of biological, economic, and planning principles to address the sustainable management of forest resources with emphasis on the timber resource and associated products.

COURSE DELIVERY: This course will be delivered in person. However, if a student is required to quarantine due to contracting or exposure to COVID-19, a Zoom link will be provided to that student to enable class participation only while they are in quarantine. It is only in this case that this option will apply. Should in-person classes be canceled due to weather, we will meet virtually via CarmenZoom during our regularly scheduled time. I will share any updates via [CarmenCanvas, email or other mode of communication].

COURSE OBJECTIVES: Learn the concepts and methods of managing forests for sustainable timber production 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

Email: williams.1577@osu.eduOffice hours: by appointment

LOCATION AND TIME: Kottman Hall, Room 245, Tuesday and Thursday 12:45 - 2:05pm

TEXTBOOK: No textbook is required for this course. All necessary materials will be posted on Carmen.

COURSE GRADING AND EVALUATION**Letter Grade Assignment**

<u>Letter Grade</u>	<u>Percent</u>	<u>Letter Grade</u>	<u>Percent</u>	<u>Letter Grade</u>	<u>Percent</u>
A	93-100 %	B -	79-82 %	D +	66-68 %
A -	89-92 %	C +	76-78 %	D	60-65 %
B +	86-88 %	C	73-75 %	E	<60 %
B	83-85 %	C -	69-72 %		

Course Evaluation

<u>Course Assignment</u>	<u>Percent of Course Grade</u>
Homework Grade	20%
Group Project	10%
Midterm Exam #1	20%
Midterm Exam #2	20%
Final Exam	30%
TOTAL	100%





Course Grade Formula:

$$\text{Course Grade} = (\text{Homework Grade} \times 0.20) + (\text{Group Project Grade} \times 0.10) + (\text{Midterm \#1 Grade} \times 0.20) + (\text{Midterm \#2 Grade} \times 0.20) + (\text{Final Exam Grade} \times 0.30)$$

NOTE: Carmen will not be used to calculate final grades but will be used to record exam scores and homework grades. Course grades will be determined with the above course grade formula.

Homework and Exam Delivery

Homework: Homework exercises will be posted on Carmen for downloading. Once the exercise is completed, it will be emailed to the instructor at williams.1577@osu.edu on the due date indicated for each exercise. It can be emailed as a Word document, PDF file or a JPG file.

Exams: All exams will be posted and completed on Carmen. Exams will be posted in the Assignment tab on Carmen. On the exam date, there will be no class meeting. On the exam date, the exam will be available to the student for a 24-hour period. Once the student begins the exam, there will be a time limit to complete the exam. Midterm exams will have a maximum of 120 minutes to complete and final exam will have a maximum of 180 minutes to complete.

Homework

No.	Homework	Points
1	Growth and Yield: CAI, MAI and PAI	10
2	Growth and Yield: CAI, MAI, PAI and annual growth	20
3	Site Quality; Forest Thinning	15
4	Area Regulation-Even-aged	20
5	Area Regulation-Uneven-aged	20
6	Annual Allowable Cut- Austrian Formula	15
7	Annual Allowable Cut- Hanzlik Formula	25
8	Forest Growth Models	20
9	Forest Financial Analysis	25

GROUP PROJECT

Based on the current class registration, the class will be broken into 4 teams of 4 individuals. This may change if class registration numbers change over time. The teams will be provided a scenario of forest management, and with the use of a forest growth and yield model, will develop the best management strategy based on expected yields and financial returns. Each team will turn in their best management strategy and present their results in class. More details will be provided later.

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.

ATTENDANCE POLICY

Just as with any job, students are expected to attend class regularly. Attendance does not constitute a part of the course grade, but there is a strong correlation between class attendance and





class performance. If a student expects to be absent, they should communicate with me regarding their planned absence. Legitimate accepted reasons for an excused absence include, but are not limited to, illness and injury, disability-related concerns, military service, death in the immediate family, religious observance, academic field trips, participation in an approved concert or athletic event, and direct participation in university disciplinary hearings. Attendance will be recorded for each class meeting.

IMPORTANT DATES

Exam 1:	Tuesday, February 14 (Lectures 1 – 10)
Exam 2:	Tuesday, March 30 (Lectures 11 – 20)
Group presentations:	Tuesday, April 18
Final Exam:	Thursday, April 27 (Comprehensive)

COURSE OUTLINE

DATE	LECTURE	TOPICS
Jan. 10	1	Introduction to course; Forest management and sustainability; Key concepts to forest management; Global perspectives; Impacts of ownership; Feasibility
12	2	Current and Historical Forest Conditions; Forest Terms and Definitions in Management; Some harvesting methods
17	3	More definitions and review; Traditional Forest Products; Policy influence on forest management
19	4	Ecological vs. Economic Forestry; Disturbance concept in economic forestry (continued); Forest Prescription Concepts;
24	5	Fundamentals of Structure, Growth, and Development in Stands and Forests; Current, Mean, and Periodic Annual Increment; Forest Growth and Yield Concepts
26	6	Forest population growth; $-3/2$ power law; Site quality
31	7	Forest density measures; Forest stocking; Forest thinning guides
Feb. 2	8	Forest Regulation: Using area control methods to predict present and future forest yields of even-aged forests
7	9	Forest Regulation: Using area control methods to predict present and future forest yields of uneven-aged forests
9	10	Determining annual allowable cuts using the Austrian formula
14	---	MIDTERM EXAM #1
16	11	Determining annual allowable cuts using the Hanzlik formula; Performing trial harvest iterations
21	12	Determining annual allowable cuts using the Hanzlik formula; Performing trial harvest iterations
23	13	Forest Growth and Yield Models: stand models; individual tree models; diameter distribution models
28	14	Forest Economics and Finance
Mar. 2	15	Forest Economics and Finance
7	16	Forest Economics and Finance
9	17	Timber Sales





14	---	NO CLASS- Spring Break
16	---	NO CLASS- Spring Break
21	18	Timber Sales
23	19	Forest Protection in Management
28	20	Forestland Certification: Considerations, costs, implementation
30	---	MIDTERM EXAM #2
Apr. 4	21	Forest Carbon Projects
6	22	Christmas Tree Production
11	23	Christmas Tree Production; Maple Syrup Production
13	24	Maple Syrup Production
18	25	Student Presentations; Fundamentals of forest management; Management and markets; Planning strategies
20	26	Course wrap-up; Review
27	---	FINAL EXAM

OTHER POLICIES AND RESOURCES

GENERAL CLASS POLICIES

This class is delivered in a face-to-face venue, and class attendance is expected. All PowerPoint slides and class materials will be available online through the Carmen website. Due to the nature of the course delivery, there will be no opportunities for make-up assignments. The only exceptions will be in extreme cases, as determined by the instructor, and the instructor must be contacted ahead of time regarding the nature of the problem if at all possible. All personal information/situations will be kept extremely confidential. If you experience any problems or have any questions you should contact Dr. Williams.

ACADEMIC MISCONDUCT

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the University's Code of Student Conduct, and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the University's Code of Student Conduct and this syllabus may constitute Academic Misconduct.

The Ohio State University's Code of Student Conduct (Section 3335-23-04) defines academic misconduct as: Any activity that tends to compromise the academic integrity of the University, or subvert the educational process. Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the University's Code of Student Conduct is never considered an excuse for academic misconduct, so I recommend that you review the Code of Student Conduct and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am obligated by University Rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the University's Code of Student Conduct (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the University.





If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

DISABILITIES STATEMENT

The university strives to make all learning experiences as accessible as possible. In light of the current pandemic, students seeking to request COVID-related accommodations may do so through the university's request process (slds.osu.edu/covid-19-info/covid-related-accommodation-requests/), managed by Student Life Disability Services. 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.

GRIEVANCES

According to University Policies, if you have a problem with this class, you should seek to resolve the grievance concerning a grade or academic practice by speaking first with the instructor or professor. Then, if necessary, take your case to the department chairperson, college dean or associate dean, and to the provost, in that order. Specific procedures are outlined in Faculty Rule 3335-7-23. Grievances against graduate, research, and teaching assistants should be submitted first to the supervising instructor, then to the chairperson of the assistant's department.

CREATING AN ENVIRONMENT FREE FROM HARASSMENT, DISCRIMINATION, AND SEXUAL MISCONDUCT.

The Ohio State University is committed to building and maintaining a community to reflect diversity and to improve opportunities for all. All Buckeyes have the right to be free from harassment, discrimination, and sexual misconduct. Ohio State does not discriminate on the basis of age, ancestry, color, disability, ethnicity, gender, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, pregnancy (childbirth, false pregnancy, termination of pregnancy, or recovery therefrom), race, religion, sex, sexual orientation, or protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment. Members of the university community also have the right to be free from all forms of sexual misconduct: sexual harassment, sexual assault, relationship violence, stalking, and sexual exploitation.

To report harassment, discrimination, sexual misconduct, or retaliation and/or seek confidential and non-confidential resources and supportive measures, contact the Office of Institutional Equity:

- Online reporting form at equity.osu.edu,
- Call 614-247-5838 or TTY 614-688-8605,
- Or Email equity@osu.edu

The university is committed to stopping sexual misconduct, preventing its recurrence, eliminating any hostile environment, and remedying its discriminatory effects. All university employees have reporting responsibilities to the Office of Institutional Equity to ensure the university can take appropriate action:





All university employees, except those exempted by legal privilege of confidentiality or expressly identified as a confidential reporter, have an obligation to report incidents of sexual assault immediately.

The following employees have an obligation to report all other forms of sexual misconduct as soon as practicable but at most within five workdays of becoming aware of such information:

1. Any human resource professional (HRP);
2. Anyone who supervises faculty, staff, students, or volunteers;
3. Chair/director; and
4. Faculty member.

DIVERSITY

The Ohio State University affirms the importance and value of diversity of people and ideas. We believe in creating equitable research opportunities for all students and to providing programs and curricula that allow our students to understand critical societal challenges from diverse perspectives and aspire to use research to promote sustainable solutions for all. We are committed to maintaining an inclusive community that recognizes and values the inherent worth and dignity of every person; fosters sensitivity, understanding, and mutual respect among all members; and encourages each individual to strive to reach their own potential. The Ohio State University does not discriminate on the basis of age, ancestry, color, disability, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, race, religion, sex, gender, sexual orientation, pregnancy, protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment.

To learn more about diversity, equity, and inclusion and for opportunities to get involved, please visit:

<https://odi.osu.edu/>

<https://odi.osu.edu/racial-justice-resources>

<https://odi.osu.edu/focus-on-racial-justice>

<http://mcc.osu.edu/>

RELIGIOUS ACCOMMODATIONS

Our inclusive environment allows for religious expression. Students requesting accommodations based on faith, religious or a spiritual belief system in regard to examinations, other academic requirements or absences, are required to provide the instructor with written notice of specific dates for which the student requests alternative accommodations at the earliest possible date. For more information about religious accommodations at Ohio State, visit:

<https://odi.osu.edu/religious-accommodations>.

COUNSELING SERVICES

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life Counseling and Consultation Services (CCS) by visiting ccs.osu.edu or calling (614) 292- 5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on-call counselor when CCS is closed at





(614) 292-5766 and 24 hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1-(800)-273-TALK or at suicidepreventionlifeline.org

COPYRIGHTS

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

