

FOR 424/624 FOREST PATHOLOGY

Instructor: Dr. Holly A. Petrillo, Professor of Forestry

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Office Hours: via Zoom: Mondays 9-10am, Wednesdays 10-11am, or by appointment; see Canvas for Zoom login info

Course Lecture: Online, asynchronous (equivalent to 2, 50-minute lecture periods)

Course Lab (in person): Tuesdays 11-12:50 (section 1) OR 1-2:50 (section 2), TNR 359, 360, 361

LEARNING OUTCOMES: This course is intended to provide students with the principles of forest pathology. Specific objectives include:

1. Understand the basic biology, ecology, and significance of disease- and decay-causing agents in a variety of settings, including natural forests, managed plantations, urban areas, nurseries and wood storage facilities.
2. Diagnose common pathogen damage with examples in the lab and in the field.
3. Describe management techniques available for common forest pathogens of the Great Lakes region.
4. Assess tree health and stand health using various assessment techniques, including US Forest Service Forest Health Monitoring guidelines and ISA hazard tree assessments.

The content and learned outcomes associated with FOR 424/624 are aligned with the following SAF accreditation competencies:

Ecology and Biology

-an ability to make ecosystem, forest and stand assessments;

-knowledge of tree physiology and the effects of climate, pollutants, moisture, nutrients, genetics, insects and diseases on tree and forest health and productivity

RESOURCES FOR THIS CLASS:

We will not be using a textbook for this course. I will assign readings to accompany lecture topics, and all readings will be posted in Canvas. Readings will be taken from scientific literature, newsletters, and other relevant material. You will be expected to do the assigned readings, and material from readings will be incorporated into lecture exams.

These links will be useful in supplementing lecture and lab material:

- Forest Pathology: <http://www.forestpathology.org>
- Christmas Tree Pest Manual: <https://www.fs.usda.gov/naspf/publications/christmas-tree-pest-manual-third-edition>
- Field Guide to Tree Diseases of Ontario: http://www.natureindeed.com/PDFs/field_guide_to_tree_diseases_in_ontario.pdf
- What's wrong with my plant? (MN): <http://www.extension.umn.edu/garden/diagnose/>
- Wisconsin Plant Disease Clinic, including a monthly pathogen-related newsletter: <https://pddc.wisc.edu/?q=pddc%2Fpddcgraphics%2Findex.htm>
- Professor Blanchette's lab at the University of MN: <http://forestpathology.cfans.umn.edu/default.htm>
- Michigan State University's Forest Pathology page: <https://forestpathology.msu.edu/>

EXPECTATIONS:

I will provide you with the most up-to-date information and resources on forest pathology, forest health, and related issues that I can. I will be available in and outside of class to answer questions and help you learn. I want you all to succeed and feel confident in applying the material we cover during class.

My expectations of you include professionalism, respect for your instructor and classmates, willingness (and even excitement!) to learn new material, inquiry, open-mindedness and academic integrity. Although I understand that all of you may not want to be professional pathologists, I will present the material relevant for professional foresters and appreciate your willingness to understand the importance of pathogens and related disturbances in forest management and ecology.

ATTENDANCE AND PARTICIPATION:

Attendance in person is not required during Spring 2021, but weekly **PARTICIPATION** is required. **Lectures** will be recorded and posted each week in Canvas, and can be viewed and/or downloaded at any time. **Labs** will be face-to-face (f2f) and online; students are expected to attend lab in-person if they are able. Students participating in the online lab should log on to Zoom at the beginning of their lab period to touch base with the instructor and can use the time to communicate with the instructor or other online students. Face-to-face labs will be held on Tuesdays during the scheduled lab times; more information about lab scheduling will come before the first in-person lab. Online lab videos should be watched prior to attending lab in person. Lab material will be the same for f2f and online students, therefore if you do not make a f2f session you may view the material you missed online. If you are planning on attending a lab f2f, it is required that you attend the lab section and time you are scheduled for, since seating is limited.

GRADING:

This course is based on 1000 points. Grades for this class will be based on 4 lecture quizzes (7.5% or 75 points each; 30% of total grade), weekly lab quizzes (5% each; 40% of total grade), and your Pathogen Management Plans (7.5% or 75 points each; 30% of total grade). Lecture quizzes will mainly be comprised of short essays where students will apply information learned during lecture and lab. Lecture quizzes will focus on the material since the last quiz, but may draw on material learned throughout the semester. Lab quizzes will be taken online each week (except when noted) and students may drop their lowest 2 quizzes. Lab quizzes will also focus on the material since the last quiz, but may draw on material learned throughout the semester. Pathogen management plans will provide students with the ability to apply concepts learned in both lecture and lab, to create management plans for a variety of pathogens important in the Great Lakes region.

Grades will be calculated by the following breakdown:

<u>Evaluation type</u>	<u>% of grade</u>	<u>Mean Score</u>	<u>Letter Grade</u>	<u>Mean Score</u>	<u>Letter Grade</u>
Lecture quizzes	30%	>/=92.5	A	79.4-77.5	C+
Lab quizzes	40%	92.4-89.5	A-	77.4-72.5	C
Pathogen Management Plans	30%	89.4-87.5	B+	72.4-69.5	C
		87.4-82.5	B	69.4-67.5	D+
		82.4-79.5	B-	67.4-59.5	D
				<59.5	F

Weekly online lab quizzes are required, and will be the same for all students. Lab quizzes will be due by Sunday at 11:59pm each week.

*Students enrolled in FOR 624 should contact the instructor during the first week of classes to determine work required for graduate section.

CANVAS:

We will be using the Course Management System, Canvas. Canvas login, support information, and training opportunities are available at www.uwsp.edu/canvas. Lecture powerpoints, lab material, readings, grades, announcements, and all other course information will be posted on our course Canvas page.

*All material posted in Canvas is the intellectual property of Dr. Holly Petrillo and may not be distributed without consent.

FOR 424/624 SPRING 2021 (TENTATIVE) LECTURE SCHEDULE
Online, Asynchronous, Lecture material posted in Canvas

Week	Lecture Topics	Required Readings*
Week 1	Class Introduction & logistics; Introduction to forest pathology	
Week 2	Agents, Disease Diagnosis	
Week 3	Fungi!	
Week 4	Fungi! contd. Lecture Quiz 1 due by Sunday, Feb 21 at 11:59pm	Mycorrhizae 1,2,3
Week 5	Wood decay	
Week 6	Parasitic plants	Mistletoe & Fire
Week 7	Nematodes Lecture Quiz 2 due by Sunday, March 14 at 11:59pm	
Week 8	Bacteria in forest environments March 22-26: SPRING BREAK NO CLASSES	
Week 9	Viruses and phytoplasma diseases in forest environments	Virus1
Week 10	Abiotic diseases & noninfectious disorders	
Week 11	Declines Lecture Quiz 3 due by Sunday April 18 at 11:59pm	
Week 12	Exotic pathogens	
Week 13	Pathogens & forest health	
Week 14	Fruit tree diseases	Lovett et al.
Week 15	Forest pathogens and climate change Pathogen Management Plans due Friday, May 14 at 11:59pm Lecture Quiz 4 due by Monday, May 17 by 11:59pm; there is no other final exam	Climate change 1 & 2

*Lecture topics and readings may change, and will be updated weekly as needed on our course Canvas page

**Readings can be found on our FOR 424 course Canvas page and hyperlinked in course powerpoints

FOR 424/624 SPRING 2021 (TENTATIVE) LAB SCHEDULE
Tuesdays 11-12:50 (Lab 1) OR 1-2:50 (Lab 2); TNR 359, 360, 361

Week	Date	Lab Topic
1	Jan 26	ONLINE LAB FOR EVERYONE: TAKE LAB SURVEY IN CANVAS
2	Feb 2	Rust diseases; Quiz
3	Feb 9	Vascular wilt diseases; Quiz
4	Feb 16	Canker diseases; Quiz
5	Feb 23	Wood decay; Quiz; Vascular wilt disease DRAFT management plans due
6	March 2	Parasitic plants; Quiz;
7	March 9	Root and lower stem diseases; Quiz
8	March 16	ONLINE LAB FOR EVERYONE: Bacteria in forest environments; Quiz
	March 23	***SPRING BREAK*** NO LAB
9	March 30	ONLINE LAB FOR EVERYONE: Viruses & Phytoplasma diseases in forest environments; Quiz; Canker Disease DRAFT management plans due
10	April 6	Foliar disorders of angiosperms; Quiz
11	April 13	Foliar disorders of gymnosperms; Quiz
12	April 20	Outdoor lab (weather permitting): Wood decay; No quiz; Root disease DRAFT management plans due
13	April 27	Outdoor lab (weather permitting): Pathogens & forest health; No quiz
14	May 4	Outdoor lab (weather permitting): Oak Wilt Management; No quiz; Rust disease or Foliar disease DRAFT management plans due
15	May 11	Outdoor lab (weather permitting): Pathogens & climate change; No quiz

UWSP COMMUNITY RIGHTS AND RESPONSIBILITIES

UWSP values a safe, honest, and respectful learning environment. To ensure that each student has the opportunity to succeed, the University has developed a set of expectations for all students and instructors called the *Rights and Responsibilities* document, which can be found at

<http://www.uwsp.edu/stuaffairs/Pages/rightsandresponsibilities.aspx>

Academic integrity is essential to the University mission and success in life. Academic dishonesty (cheating, plagiarism, etc.) will not be tolerated. Do not do it! The minimum penalty for a violation of academic integrity is a failure (zero) for the assignment. See "Student Academic Standards and Disciplinary Procedures" section of the *Rights and Responsibilities* document (<http://www.uwsp.edu/stuaffairs/Documents/RightsRespons/SRR-2010/rightsChap14.pdf>). Trust between students and instructors is of paramount importance in academic settings. Academic dishonesty will not be tolerated in the classroom (e.g., cheating on exams) or in research efforts (e.g., any lab or other assignments). Students found cheating will be punished to the fullest extent that University policy permits.

AMERICANS WITH DISABILITIES ACT

The Americans with Disabilities Act (ADA) is a federal law requiring educational institutions to provide reasonable accommodations to students with disabilities. More information about UWSP's policies can be found at <http://www.uwsp.edu/stuaffairs/Documents/RightsRespons/ADA/rightsADAPolicyInfo.pdf>

Students with disabilities requiring accommodations should contact the Disability and Assistive Technology Center (Rm. 609, Learning Resource Center; (715)346-3365 during the first three weeks of the semester. If an accommodation is granted by the Disability and Assistive Technology Center, an accommodations request form should be provided to and discussed with the instructor. I ask that any accommodations request be brought to my attention at least one week prior to the need for accommodation, or as soon as it is practical to do so. I will be happy to assist in any way that I can.

CELL PHONE AND OTHER ELECTRONICS POLICY: While you may use your cell phone to take pictures of pathogen specimens in lab, you may not use your cell phone to talk or text during class. It is disruptive to students and instructors to have students using phones or to hear phones ringing (including ringers on vibrate mode). Students found using such devices will be asked to turn off their devices, or leave class. If you are expecting a call that cannot wait until after class, please make sure to sit close to the door and let the instructor know before class that you may have to leave during class time. If you would like to use a laptop, tablet or similar device for taking notes, please ask the instructor before class begins.

EMERGENCY PROCEDURES

- In the event of a medical emergency call 911 or use a Red Emergency Phone outside of TNR 359/360/360 (lab rooms). Offer assistance if trained and willing to do so. Guide Emergency Responders to victim.
- In the event of a tornado warning, the TNR 110 serves as a tornado shelter.
- In the event of a fire alarm, evacuate the building in a calm manner. Meet on the West side of the TNR building. Notify instructor or emergency command personnel of any missing individuals.
- Active Shooter – Run/Escape, Hide, Fight. If trapped hide, lock doors, turn off lights, spread out and remain quiet. Follow instructions of Emergency Responders.
- See UW-Stevens Point Emergency Management Plan at www.uwsp.edu/rmgt for details on all emergency response at UW-Stevens Point.

Indigenous Peoples Lands Recognition

The UW-Stevens Point community recognizes that the University of Wisconsin-Stevens Point occupies the lands of the Ho Chunk and Menomonee people. Please take moments throughout this course to acknowledge and honor this ancestral Ho Chunk and Menomonee land, and the sacred lands of all 14 indigenous peoples.

Inclusive Environment

I strive to make all spaces in this course, both in-person and online, inclusive environments. Students are respected, by the instructor and by other students, and should feel comfortable sharing ideas and opinions. Included below are the UWSP CNR Principles of Professionalism, the forestry discipline's anti-harassment statement, and the SAF Code of Ethics, all of which are applicable in this course. Please help the instructor create an inclusive learning environment for all.

[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**

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

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.