

FOR 424/624 FOREST PATHOLOGY**Instructor:** Dr. Holly A. Petrillo**Lecture:** M&W 11-11:50; TNR 120**Email:** hpetrill@uwsp.edu**Lab:** T 11-12:50 (section 1) OR 1-2:50 (section 2), TNR 360**Office:** TNR 363**Office Hours:** Mondays 12-1, Tuesdays 10-11, or by appointment, or just stop in!

LEARNING OBJECTIVES: 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.

RESOURCES FOR THIS CLASS:

We will not be using a textbook for our course. I will assign readings to accompany lecture topics; readings will be posted in Canvas and also will be available outside of my office. 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:

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/>

Forest & Shade Tree Pathology: <http://www.forestpathology.org>

ATTENDANCE:

Your attendance in class is expected and essential for success in this course. Absence during an exam or quiz will result in a zero unless you have contacted me beforehand, or have an unexpected situation such as an emergency or illness. Please contact me as soon as possible if such a situation occurs.

****Make-up exams will only be given when a valid excuse is presented to the instructor (or by prior arrangement). Arrangements for a make-up exam must be made prior to the exam period or no later than 24 hours after the missed exam.*

GRADING:

Grades for this class will be based on exams (midterm and final), lab quizzes (3), professional email responses (3), and your pathogen field guide (25%). 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>
Mid-term exam	15%	>/=92.5	A	79.4-77.5	C+
Final exam	15%	92.4-89.5	A-	77.4-72.5	C
Lab quizzes (3)	30%	89.4-87.5	B+	72.4-69.5	C-
Pathogen field guide	25%	87.4-82.5	B	69.4-67.5	D+
Professional emails	15%	82.4-79.5	B-	67.4-59.5	D
				<59.5	F

FOR 424/624 SPRING 2020 (TENTATIVE) LECTURE SCHEDULE
Mondays & Wednesdays 11-11:50am, TNR 120

Week	Lecture Topics	Readings*
Week 1	Introduction to forest pathology	
Week 2	Rust diseases (M); Fungi (W)	
Week 3	Vascular wilt diseases (M); Fungi contd. (W)	Mycorrhizae 1,2,3
Week 4	Fungi contd.	
Week 5	Canker diseases (M); Viruses and phytoplasma diseases (W); <i>Email response #1</i>	Virus1
Week 6	Root & Lower Stem Diseases (M); Bacteria (W)	
Week 7	Parasitic plants	Mistletoe & Fire
Week 8	March 9 (M): EXAM 1 DURING LECTURE March 11 (W): Nematodes	
	March 16 & 18: SPRING BREAK NO CLASSES	
Week 9	Foliar disorders of Angiosperms (M); Biological control (W)	
Week 10	Foliar disorders of Gymnosperms (M); Pathogens & forest health & damage diagnosis (W) <i>Email response #2</i>	
Week 11	Pathogens & forest health & damage diagnosis	
Week 12	Exotic pathogens	Lovett et al.
Week 13	Declines	
Week 14	Fruit tree diseases; <i>Email response #3</i>	
Week 15	Forest pathogens and climate change	Climate change 1 & 2
May 11	Final Exam due by 10am, uploaded to Canvas	

FOR 424/624 SPRING 2020 (TENTATIVE) LAB SCHEDULE
Tuesdays 11-12:50 (Lab 1) OR 1-2:50 (Lab 2); TNR 360

Date	Lab Topic
Jan 21	No lab 1st week of class
Jan 28	Introduction & organization; Rust diseases
Feb 4	Vascular wilt diseases
Feb 11	LAB QUIZ 1
Feb 18	Cankers
Feb 25	Root and lower stem diseases
March 3	LAB QUIZ 2
March 10	No lab; FOR 436 Field Trip
March 17	***SPRING BREAK*** NO LAB
March 24	Foliar disorders of angiosperms
March 31	Foliar disorders of gymnosperms
April 7	LAB QUIZ 3
April 14	Field trip (weather permitting)
April 21	Field trip (weather permitting)
April 28	Field trip (weather permitting)
May 5	Field trip (weather permitting); Field guides due at 11:59pm on May 5

*Readings are posted in CANVAS, hyperlinked in PowerPoints (when possible), and are available outside of my office (TNR 363); please see CANVAS for most updated reading assignments

Lecture notes and other announced material can be found on the CANVAS site for FOR 424/624

“Tree Pathogens of the Upper Midwest” field guide- project

The purpose of this field guide is for you to practice identifying pathogens in the field, and describing them to other people. The field guide is worth 25% of your total grade in this class.

***Use the “Field Guide to Tree Diseases in Ontario” as a

template/guide: http://www.natureindeed.com/PDFs/field_guide_to_tree_diseases_in_ontario.pdf. ****

-Present your field guide as a .pdf document, uploaded into CANVAS. No physical specimens accepted.

-Your field guide will include 15 examples of pathogens found in the upper Midwest (WI, MN, MI)

-It is very important that everything in your field guide is in your own words. Copying from other publications is plagiarism and will not be tolerated. See next section in syllabus for details. Any questions let me know.

Your field guide will be divided into sections, based on the following pathogen groups:

1. Rust diseases
2. Foliar diseases
3. Vascular Wilt diseases
4. Cankers
5. Root & lower bole diseases
6. Wood decay (on live or dead trees)
7. Abiotic/ noninfectious disorders

You should provide a description of each pathogen/ disease group at the beginning of each section. For example, explain what a rust disease is, what makes rust diseases different from other diseases, etc.

You will need at least one example from each of the pathogen groups above, and a total of 15 specimens. You can have repeats within a pathogen group, for example you can have two different rust diseases (i.e., white pine blister rust and Eastern gall rust) represented in your field guide. You cannot count a pathogen twice, for example, you cannot include black knot on cherry and black knot on plum as two different pathogens.

For each pathogen/disease (15 total), the following information is required:

1. Disease name (usually common name, for example, white pine blister rust)
2. Causal agent/ pathogen name (usually scientific name, for example, *Cronartium ribicola*)
3. Type of pathogen/ disorder (fungus, bacteria, abiotic disorder, etc)
4. Host(s)
5. Symptoms and signs (specifically what to look for on the plant)
6. Damage/ Impact
7. Management
8. Additional information (if applicable; for example, if there are multiple causal agents; if another name is also used or has been used to describe this disease; how to tell this disease apart from other similar-looking diseases; anything unique or special that should be noted that would help with diagnosis)
9. References
10. Photos: Two (2) photos (taken by you!) for each specimen are required. Photos from the internet are not acceptable. When possible, include something in your photo so I know it is yours. For each photo, include the location and date of the photo.

A cover page and table of contents should be included. A grading rubric will be posted in Canvas. You may work in groups of 2-3 people for your field guide, but each person needs to turn in a copy to Canvas by the due date. Make sure to list all authors.

Your field guide needs to be uploaded to Canvas on TUESDAY, MAY 5 BEFORE MIDNIGHT

Professional Email Responses

Throughout your career you likely will receive emails from the public, with questions about tree health. As part of this forest pathology class, you will be required to respond, in a professional manner as an expert in the field, to three public email inquiries related to tree health throughout the semester. Each

email response is worth 20 points. One point will be subtracted for each day your response is late, and also for each error, including grammatical errors or unprofessional word or phrase choices. You should always address the author by the way they sign their email. Professional email responses are worth 15% of your final course grade.

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 151 (go out to the room and turn right). If during lab, there is an emergency phone outside of the lab (TNR 360) and outside of TNR 120. 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.