

FORS232: Forest Insects and Disease

9:30-10:50 am TTH Stone 304

Instructor: Diana Six, Bioresearch Building 104 diana.six@umontana.edu

Office hours: Thursdays 11-12 (on campus) or by appointment (zoom until I am past knee rehab)

Class objectives and learning outcomes: Students will learn about the array of insects and pathogens affecting western forests. Topics covered include the identification, ecology, and management of insects and diseases. Students will use the information they learn to identify the main insect and diseases of western conifers in the field and to develop appropriate management approaches given real-world scenarios.

Grading:

Four exams (20% each) (NO makeups without proof of a serious reason for missing exam)

Two in-class group scenarios (5% each). See schedule!

Collection (10%) (NO late collections accepted- early okay!) Collection due May 3!!!

MOODLE: What you need is on Moodle!!! Stay up to date with the schedule, readings, example exams, exam keys, etc.

Grading scale: (please note - this class is offered for a traditional letter grade only)

A = $\geq 94\%$	A- = 90-93%	
B+ = 87-89%	B = 84-86%	B- = 80-83%
C+ = 77-79%	C = 74-76%	C- = 70-73%
D+ = 67-69%	D = 64-66%	D- = 60-63% F = <60%

How to succeed in this course: **Attend!!** - Attendance is crucial to be exposed to the material and to learn. **Take good notes** - Not only will this ensure you have all the info needed to learn the material and to do well on exams, it is a crucial tool in 'remembering/learning' by itself. Review notes often, not just the days before the exam. **Do the readings BEFORE the lecture.** If you miss a class, get notes from a classmate. Check Moodle for powerpoints and readings. A lot of what I discuss is not on the powerpoints (so take lots of good notes).

TEXTS

On Moodle: Lecture: Bark Beetle Outbreaks in Western North America: Causes and Consequences, Bentz et al. 2007. **Collection:** Field Guide to Diseases and Insects of the Rocky Mountain Region, Allen et al. 2010. ----Physical copies of the guide can be checked out when you are ready to do your collection but must be returned (if not returned you get an incomplete in the course that will later turn to an F if book is not returned).

Optional but strongly recommended if you don't know your trees:

Rocky Mountain Tree Finder, Tom Watts, any edition. \$2.00-\$6.00 online.

LECTURE SCHEDULE (Readings for each lecture are provided in parentheses. These will be on Moodle)

Jan 17	Intro to course. How to succeed in this class. Why do we study insects and diseases of forest trees?
Jan 19	Insect biology
Jan 24	Insect taxonomy and ID
Jan 26	Insect population dynamics and dispersal
Jan 31	Forest insect management
Feb 2	Ambrosia beetles and wood borers
Feb 7	Intro to bark beetles and their management (Bark Beetle Outbreaks in Western North America - Moodle)
Feb 9	Case study: Mountain pine beetle (Ted Talk, Kelseya article, example exam available on Moodle)
Feb 14	Bark beetle management (student activity (scenario) - in class), review
Feb 16	Midterm I
Feb 21	Introduction to defoliators, defoliator management, decision making
Feb 23	Case study: Doug-fir Tussock Moth
Feb 28	Various defoliators (MacLauchlin et al. 2018)
Mar 2	Defoliator management scenario (example exam available on Moodle)
Mar 7	Other insect guilds: Gall and sap sucking, root and shoot, seed and cone
Mar 9	Animal damage, review
Mar 14	Midterm II
Mar 16	Intro to forest pathology, disease diagnosis
Spring Break	
Mar 28	Disease management
Mar 30	No class - comp time for collections
April 4	Introduction to fungi, taxonomy and ID
April 6	Various fungal diseases - cankers, rusts, needle diseases

April 11	Case study: <i>Heterobasidion</i> root disease; other root diseases, decays
April 13	Mistletoes and mistletoe management, abiotic diseases, die-offs, example exam available (Mistletoe friend or foe)
Apr 18	Mistletoe scenario, review
Apr 20	Midterm III
Apr 25	Anthropogenic change TBA - invasive pathogens. Case studies: white pine blister rust, Chestnut blight
April 27	Anthropogenic change - invasive insects TBA. Case studies Emerald ash borer (TBA), red bay ambrosia beetle
May 2	Anthropogenic change - climate change effects on insects and pathogens TBA
May 4	Study time
FINAL	Take home/open book/open notes Exam IV: finals week. Due by May 12, 10 am absolute deadline!!!!!!!!!!!!!!!!!!!!!! No Late exams accepted!!!!!!!!!!!!!!!!!!!!!!

Do you need help?

I am here to help you succeed. If you have questions or have extenuating circumstances, please reach out to me. I encourage you to do this sooner than later as it provides more options. If you are experiencing depression, please don't try to ride it out alone. See (and use) the resources available to you (contact Curry Health Center).

Class expectations

Cell phones and computers

Please turn off electronic devices during class.

Assignment due dates

Due dates are firm. Late assignments will not be accepted unless you have unusually extenuating circumstances *and* have made arrangements prior to the due date. This includes missing an exam: *there are NO make-up exams* without prior arrangement.

Communication

If you e-mail me, please do the following so that the e-mail is read and understood: (a) include "FORS 232" in the subject line, (b) write in complete sentences, with proper grammar, and (c) sign the e-mail with your full name. Even though I work to reply promptly, sometimes I am in meetings, classes, or in the field all day and try to catch up on email at night.

Classroom environment

Students at the University of Montana are diverse in many ways, including race, gender, age, religion, preparedness, and mobility. Please create a respectful learning environment by honoring all student contributions and expressing your views in ways that do not diminish other students' perspectives. Be a nice person :)

Accessibility The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and the Office for Disability Equity (ODE). If you anticipate or experience barriers based on disability, please contact the ODE at: (406) 243-2243, ode@umontana.edu, or visit www.umt.edu/disability for more information. For accommodation you must notify me at the beginning of the course and then prior to each exam. Retroactive accommodation requests will not be honored, so please, do not delay. As your instructor, I will work with you and the ODE to implement an effective accommodation.

Academic honesty, plagiarism, and student conduct All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the [Student Conduct Code](#). Academic dishonesty of any form is unacceptable and will be taken seriously by the instructor, the College of Forestry and Conservation, and the University of Montana. This includes plagiarism (copying materials from other sources without citing the source or copying someone's work) and cheating (copying material from other students during tests or quizzes). In both cases, you will fail the assignment/exam or if very serious the course. The incident will be passed on to the Dean and the Vice Provost of Academic Affairs. It is your responsibility to be familiar with, and adhere to, the [University's definition of plagiarism](#). **Don't cheat :).** It will get you an F in the course.

Course withdrawal (and other) deadlines

- See [calendar](#)