

Course Syllabus
Fisheries and Wildlife
Principles of Wildlife Diseases 427/527
4 credits

This course is designed to provide a broad overview of the principles of wildlife disease research and management. The course also highlights some important current wildlife health issues in North America. Course includes infectious and noninfectious agents of disease in mammals, birds, reptiles, and will include lecture topics on diseases caused by viruses, bacteria, parasites, prions, and environmental conditions. Aspects of biology, clinical signs, epidemiology, strategies in controlling diseases, and human dimensions of wildlife diseases are covered. The effects of global environmental change and the intersection of wildlife, livestock, and human population health are discussed.

Catalog Course Description

Examines the general principles of how wildlife diseases emerge, evolve, and spread. Explores the relationships between human society, environmental change, and wildlife disease. Emphasizes how global environmental change (e.g. climate change, land use change, globalization of travel and trade) affect disease dynamics and cross-species transmission. Covers disease examples of North American mammals, birds, reptiles, and amphibians.

This course combines approximately 120 hours of instruction, online activities, and assignments for 4 credits.

Learning Outcomes:

1. Apply basic concepts of transmission, etiology, and clinical signs to wildlife diseases.
2. Describe the common diseases affecting North American wildlife based on population impacts and human dimension aspects.
3. Compare different types of disease monitoring and diagnostics and describe how and when each is used.
4. Synthesize the disease relationships between wildlife, domestic animals, and humans.
5. Relate global patterns of environmental change to disease dynamics in wildlife.
6. Discuss and develop applied strategies for controlling disease in wildlife populations by integrating pathogen and host biology, as well as environmental and social constraints.
7. Graduate students: summarize key information regarding the biology, epidemiology, and social impacts of wildlife disease and communicate findings to a broad audience.

Instructor:

Claire Couch, PhD
email: claire.couch@oregonstate.edu

Prerequisite:

Upper division standing

Text (not required to purchase):

Essentials of Disease in Wild Animals, Gary A. Wobeser, Blackwell Publishing, Ames, Iowa, 243pp

Schedule (subject to minor changes):

Week 1/Module 1: Overview of the connections between wildlife, human society, and environmental change

Week 2/Module 2: Wildlife disease and livestock

Week 3/Module 3: Wildlife disease and pets

Week 4/Module 4: Disease monitoring and surveillance

Week 5/Module 5: Vector-borne diseases

Week 6/Module 6: Challenges of managing a disease outbreak

Week 7/Module 7: Disease agents of aquatic environments

Week 8/Module 8: Globalization, biosecurity, and wildlife disease

Week 9/Module 9: Pathogen evolution

Week 10/Module 10: Managing wildlife populations for disease resilience

Evaluation of Student Performance:

Point breakdown is approximate and subject to minor changes

Discussion Participation: 120 points

Quizzes: 90 points

Assignments: 90 points

Discussion Forum Responsibilities:

Your participation score for the Discussion Forums is based on your weekly effort to contribute substantial posts that reflect your understanding of the learning materials, and to respond thoughtfully to classmates. Each week you are given a grade out of ten possible points (plus 1-2 bonus points) based on the discussion rubric for that week. The cutoff day for graded Discussion Forum participation is Saturday at midnight each week.

Quizzes:

Quizzes do not require a proctor and are based on provided learning materials. Quizzes are closed book/closed notes. The final quiz will be comprehensive, and both the mid-term and final quiz will be timed.

Assignments:

Throughout the term, students will work toward completion of a final project in which they describe and analyze important aspects of a disease not covered in the course learning materials. There will be several deadlines throughout the term, including topic selection, draft submission, and final paper submission. Graduate students will additionally create a poster to communicate the key elements of their paper to a broad audience. In addition to the main project, students may be given other small assignments throughout the term.

Communication and Contact:

Please contact me via Canvas Inbox. I will typically respond within one business day, so feel free to send a follow-up message if it has been more than 2 business days with no response (I may have missed your first message). For any questions that cannot be resolved via direct message, I am happy to schedule a zoom or phone meeting. Be advised that my availability for meetings is limited due to other meetings and research commitments, so individual meetings may need to be scheduled up to a week in advance.

Course Grading: Percentage of total points- (only whole letter grades assigned)

A - 90 and above

- B - 80 to 89
- C - 70 to 79
- D - 60 to 69
- F - below 60

Suggested References:

- Field Manual of Wildlife Diseases in the Southeastern United States. 1997. 2nd edition. W.R. Davidson and V.F. Nettle. Southeastern Cooperative Wildlife Disease Study, Athens, Georgia.
- Investigation and Management of Disease in Wild Animals. 1994. G.A. Wobeser. Plenum Press, New York, New York.
- The Ecology of Wildlife Diseases. 2001. edited by P. Hudson, A. Rizzoli, B. Grenfell, H. Heesterbeek, and A. Dobson. Oxford University Press.
- "Field Manual of Wildlife Diseases: General Field Procedures and Diseases of Birds" by M. Friend and J. C. Franson. The entire text of this manual can be viewed and or downloaded online at: http://www.nwhc.usgs.gov/pub_metadata/field_manual/field_manual.html.
- Diseases of Wild Waterfowl. 1981. G. Wobeser. Plenum Press, New York, New York.
- Infectious Diseases of Wild Mammals. 2001. 3rd edition edited by E. Williams & I. Barker, Iowa State University Press.
- Parasitic Diseases of Wild Mammals. 2001. 2nd edition. edited by W. Samuel, M. Pybus & A. Kocan, Iowa State University Press.
- Noninfectious Diseases of Wildlife. 1996. 2nd edition. edited by A. Fairbrother, L. Locke & G. Hoff, Iowa State University Press.

Additional Requirements for Graduate Students:

Each graduate student is expected to prepare a poster on the wildlife disease selected for their final paper. Topics will be agreed upon by the instructor and student. Graduate student posters will be to the entire class via a discussion board during week 10, and will then respond to questions and comments from peers.

OSU Academic Statements:

Plagiarism

You are expected to submit your work in all your assignments, postings to the discussion board, and other communications, and are to clearly to the work of others when you use it. Academic dishonesty will result in a grade of "F".

Academic Calendar

All students are subject to the registration and refund deadlines as stated in the Academic Calendar: <https://registrar.oregonstate.edu/osu-academic-calendar>

Statement Regarding Students with Disabilities

Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at <http://ds.oregonstate.edu>. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

Student Conduct Expectations link: <https://beav.es/codeofconduct>

Student Bill of Rights

OSU has twelve established student rights. They include due process in all university disciplinary processes, an equal opportunity to learn, and grading in accordance with the course syllabus: <https://asosu.oregonstate.edu/advocacy/rights>

Ecampus Reach Out for Success:

University students encounter setbacks from time to time. If you encounter difficulties and need assistance, it's important to reach out. Consider discussing the situation with an instructor or academic advisor.

Learn about resources that assist with wellness and academic success. Ecampus students are always encouraged to discuss issues that impact your academic success with the Ecampus Success Team. Email ecampus.success@oregonstate.edu to identify strategies and resources that can support you in your educational goals.

If you feel comfortable sharing how a hardship may impact your performance in this course, please reach out to me as your instructor. (Instructors: consider tailoring this statement to your personal voice.)

For mental health:

Learn about counseling and psychological resources for Ecampus students. If you are in immediate crisis, please contact the Crisis Text Line by texting OREGON to 741-741 or call the National Suicide Prevention Lifeline at 1-800-273-TALK (8255).

For financial hardship:

Any student whose academic performance is impacted due to financial stress or the inability to afford groceries, housing, and other necessities for any reason is urged to contact the Director of Care for support (541-737-8748).