

**Conservation Medicine
VME-5562**

Instructor: Nicole Lewis, MS, DVM

Office hours: Please contact me via email and, if necessary, you can make an appointment if we need to chat via phone. I will do my best to respond to emails within 24 hours on weekdays and within 48 hours on weekends.

Email: Nicole.lewis@ufl.edu

Website: <https://wildlife.forensics.med.ufl.edu/programs/graduate-certificate/>

Text (Suggested):

A) Aguirre et al (eds) 2002, Conservation Medicine: Ecological Health in Practice. Oxford University Press

B) Aguirre et al (eds) 2012, New Directions in Conservation Medicine: Applied Cases of Ecological Health. Oxford University Press

Course Description:

The discipline of conservation medicine results from a long evolution of trans-disciplinary thinking, merged from the health and ecological sciences. This course will examine the links between climate, habitat and land use, emergence and re-emergence of infectious disease, parasites, and environmental contaminants, and the maintenance of biodiversity as an indicator of the ecohealth of a community. The course will describe conservation medicine in a historical context and includes case studies and applied techniques. Conservation medicine stresses the importance of recognizing that human health, animal health, and ecosystem health are inextricably interdependent. Wildlife forensics is an emerging discipline within the field of conservation medicine. This course will discuss conservation with wildlife forensic science in mind, from the perspective of the transdisciplinary approach. Forensics, as it relates to issues of wildlife crime, the illegal wildlife trade, and the consumption and trade of bushmeat; ecotoxicology as it relates to forensics and the use of plants to harm humans, livestock, or wildlife; applied techniques in conservation as it relates to the forensic sciences will all be discussed. Throughout the course, current topics in wildlife forensics will be covered through the presentation of case studies, examples in the field, and relevant media.

Primary Course Objectives:

By the end of this course, students should be able to:

- Explain the concept and principles of conservation medicine (CM) & ecohealth and why they are important for his/her own area of work and to other areas of work

- Understand the dynamics of disease in CM & ecohealth and how they are influenced by human induced changes, as well as their role in ecosystems, conservation, and issues related to public health and agriculture
- Understand the human impact and role humans play in relation to the issues of conservation, resource management, global health, and security
- Apply CM & ecohealth principles to the analysis or planning of new research and interventions, including being able to identify the skill sets and knowledge bases needed to address specific questions.
- Understand the place of CM & ecohealth in the broader landscape of research and policy questions, as well as the relationship of research to policy and action
- Develop a greater understanding of the socio-political, cultural, ethical, and historical dimensions and meanings of health
- Use specific case studies as an application for conservation medicine in action

Additional objectives not defined by the grading rubric and considered to be supplementary to the student's overall understanding of CM:

- Determine where, and how, CM & ecohealth principles can be used to reconsider research and interventions already undertaken
- Be inspired by a shared vision of how CM & ecohealth can help make research more responsive and grounded to “real-world” problems
- Understand the strengths, limitations, and implications of different research methods, and when, and how, to mix those methods in the service of stronger transdisciplinarity
- Improve one's ability to work across disciplines and sectors, including the ability to develop conceptual frameworks and research questions that facilitate such collaboration

***Please note this syllabus does not contain due dates, as it changes each semester. You must check the course website for due dates.**

Course Topics:

Module	Week	Topic	Lecture	Book Chapters
1	1	Conservation Medicine: Ecohealth in Practice	1: Conservation Medicine: definition & history of an emerging discipline 2: Ecohealth: ecology, health, and sustainability 3: One Health: definition and the One Health, One Medicine paradigm 4: Biodiversity and health	A-1, 2; B-1 B-2 B-3 A-14, B-4

			5: Stress and immunosuppression as factors in wildlife conservation Lecture 1-5	B-7
2		Module 1 assessment Emerging infectious disease, disease transmission, and ecohealth	6: Ecosystem health and infectious disease	B-5
	3		7: Emerging infectious disease in conservation medicine	A-5
			8: Habitat fragmentation and infectious disease ecology	B-10
			9: Parasite conservation in ecosystem health	B-6
	4		10: Zoonotic infections and conservation medicine Lectures 6-10	A-17
3		Module 2 assessment Anthropogenic influence and conservation medicine	11: Climate change and infectious disease dynamics	B-8
			12: Bushmeat trade and the role of conservation	B-12
	5	Midterm assignment released	13: Ecotoxicology and the human/animal/environmental interface	B-24
			14: Wildlife toxicology: Environmental contaminants and regulation	B-25
			15: Vector-borne disease dynamics due to land-use change Lecture 11-15	A-15
4	6	Module 3 assessment Ancillary considerations in conservation medicine	16: Management of wildlife populations in the absence of true wilderness	B-40

		17: Zoological parks in endangered species recovery and conservation	A-21
7	Midterm topic deadline	18: Ecotourism in conservation medicine 19: Public health amidst global ecological change 20: Wildlife health and security: challenges and opportunities Lectures 16-20	A-27 & supplemental A-28 & supplemental A-29 & supplemental
5	Module 4 Assessment Applied techniques of conservation medicine	21: Disease monitoring as a conservation tool	A-8
8		22: Noninvasive monitoring of stress in wildlife 23: The virus as a tool to monitor population dynamics 24: Animal behavior as a conservation tool	A-11 A-10 A-12
9	Final assignment released	25: Health and biodiversity: application of GIS technology in conservation 26: Strategies for wildlife disease surveillance	B-35 B-37
	Midterm due	27: Wildlife health monitoring systems: using sentinel species to influence policy	B-38
10		28: Sample collection in the field 29: Mathematical modeling as a conservation tool Lectures 21-29	Supplemental B-42
6	Module 5 assessment Case studies in conservation medicine	30: Bats as viral reservoirs	B-14
11		31: Saving Africa's elephants; poaching, protection, and preservation 32: H5N1: highly pathogenic avian influenza	Supplemental B-16

	Final assignment topic deadline	33: The role of bovine TB in southern African conservation I	B-29
12		34: The role of bovine TB in southern African conservation II	B-29
		35: Kibale Ecohealth Project: the interface between human/animal/ecohealth in western Uganda	B-31
		36: Biodiversity and health: use of plants as medicinals and poison in humans and animals	B-34
13		37: Insect conservation	B-20
		38: Rhinos in crisis: conservation medicine in action	Supplemental
	Final assignment due	39: Mountain gorillas and conservation medicine	A-22
14	Module 6 assessment	Lecture 30-39	
	Finish and turn in final		
15	Grading		

Grading:

Students will be graded based on a combination of their participation in weekly discussion boards or short assignments, module assessments, a midterm and a final exam or assignment. All written answers must be completed in your own words. Copying from other sources is not acceptable and may be considered plagiarism. Failure to complete an assignment in your own words may result in you receiving a score of 0 (zero) for the assignment. If you lose your internet connection during your exam time and scores are not recorded simply email the instructor for assistance. Always include your name when communicating with the course instructor. Students will receive individual feedback on points lost on the assignments. The comments of the TA or professor can be viewed on the assignment submission page for the corresponding module found on the last page of each module. Students can check their progress in the course by viewing their grade records via the course interface.

Points breakdown:

Students will participate in weekly discussions led by the course instructor; participation is worth 5 points per week (**75 pts**)

Module assessments: at the end of each module students will participate in a review, case-based or real-world assessment that emphasizes the theme of the module (**200 pts**)

Midterm assignment/exam (**50 pts**)

Final assignment/exam (**75 pts**)

Total Points: 400

Point Assignments:

Discussions = 75 points total (18.5% of total)

Module Assessments = 200 points total (50% of total)

Midterm Exam = 50 points (13% of total)

Final Exam = 75 points (18.5% of total)

Total for the Course: 400 points

Grades will be assigned as follows:

A 100% to 93.4%

A- < 93.4% to 90.0%

B+ < 90.0% to 86.7%

B < 86.7% to 83.4%

B- < 83.4% to 80.0%

C+ < 80.0% to 76.7%

C < 76.7% to 73.4%

C- < 73.4% to 70.0%

D+ < 70.0% to 66.7%

D < 66.7% to 63.4%

D- < 63.4% to 60.0%

E < 60.0% to 0.0%

Makeup Policy:

Make up assignments are not given without prior permission by the instructor.

Grade Changes:

Grades will be changed only when a grading error has been made. If you think an error has been made, you should email the instructor as soon as possible. Your entire assignment will then be regraded.

Additional information on the University of Florida Grades and Grading Policies may be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Field Code Changed

Getting Started:

To get started, briefly introduce yourself via the discussion board located in the left-hand menu on the homepage of the course. Once you have responded to the Introduction you will then go to the first module. Read through the course content and any required reading listed in the module introduction. Do not hesitate to contact your instructor at any time if

you need guidance; if you are unsure about the focus of the assignment, if you have assignment questions or questions relating to the course content. If you don't tell us, you need help, we can't help you!

Revision and Notes:

As you go through the semester, keep copies of important emails, bulletins and assignments you may use for revision as these will be purged from the course at the end of the semester. We recommend you make a copy of the course modules since this will be the only access you will get to these materials. We will not be able to provide you with copies of course content once the course is removed from your account.

Course Assignments:

There will be a midterm and final assignment, as well as module assessments and discussion boards. All written assignments must be completed in your own words. Cutting and pasting from the internet or class notes is not acceptable and may be considered to be plagiarism. Failure to complete an assignment in your own words may result in you receiving a score of zero for the written assignment. When sending course assignments, include your name and please make sure your assignments are labeled clearly. Always keep a copy of your course assignments in case you need to resend it. Also, you may want it for revision purposes later.

Assignment Deadlines:

Please review the information regarding our policy for missed deadlines in the section on Instructional policies. In some courses content modules may be released before the scheduled calendar date to help those who need to work ahead because of scheduling discrepancies. If a module is released ahead of time, the deadline for the assignment and exam will remain the same as it is on the course calendar.

Communication:

Student Expectations

You are expected to contribute regularly to discussion board topics. In some cases, a topic question may be part of an assignment or contain a specific issue to discuss. You are encouraged to start your own threads, as well as read and respond to others. If you have input, then post it! Do not feel you must wait for me to "answer" a question if you can contribute something. I may contribute to the discussions as needed but have designed the discussion boards with a collaborative feel in mind. If you wish to discuss a matter privately with me, you may do so via email or arrange a time to speak on the phone. If you have course or content questions, please review the discussion board and announcements prior to emailing questions to me. In many cases, the question may have already been covered.

Email/Online Etiquette: Please use discretion and professional correspondence when emailing your professor by including an appropriate greeting (using Dr./ Mr./Mrs. before

instructor's last name), a clear explanation for your reason for writing (using complete sentences, correct grammar/spelling, etc.) and a closing that includes your name. When contributing to online discussions and forums, be respectful of your instructor/classmates by using professional, cordial, and thoughtful language and wording. Correspondence that is deemed as unprofessional, inappropriate, hostile, or inflammatory will be brought before the department Professional Conduct Board. Course Email, not the discussion board, should always be used to contact the faculty or staff if you have a problem of a personal nature. If you are having technical problems with the course content (downloads, etc.) or you are unable to access your course interface, please contact us directly, and please don't spend hours trying to get something to work as this will only lead to frustration. We don't want any of you to be offline for any length of time. Contact us as soon as you can so we can check it out and help you. If you are experiencing difficulty with your access to course email, then please email your course instructor directly via regular email. In that email, make sure you give your name and the name of your course. Please respond to all emails from your instructor or TA. When we email you, we are usually contacting you because we want to help you. If you have a question about your grade, an exam, or assignment question, please email us and we'll be happy to help you.

Instructor Expectations

Please email me with questions (after first checking the discussion board and announcements) or with matters you wish to keep confidential. I will make every attempt to respond to emails within 24 hours, so please keep this in mind as due dates approach. Feedback and grading are assignment-dependent and will be stated as assignments are due. Quiz/exam content questions must be submitted before the start of the quiz/exam; I cannot respond to content questions once the exam period has begun.

Bulletin Board:

The course discussion board can be used to post content related questions and assignment materials when necessary. Please ask us questions any time; we are here to help you. Please do not use the community forum to ask specific questions about your current course content, assignments etc. It's VERY important that you read all the discussion bulletins that have been posted. We will use this site to post important information relating to content or exam changes, deadlines etc. Since postings can accumulate quickly, please login each day to stay on top of these postings or you may miss important information. Please make sure you don't post assignments that are supposed to be submitted to the assignment page or drop box. If you accidentally do, email us as soon as you can, and we'll delete it for you.

Makeup Policy:

Make up assignments are not given without prior permission by the instructor.

Grade Changes:

Grades will be changed only when a grading error has been made. If you think an error has been made, you should email the instructor or TA as soon as possible. Your entire assignment will then be re-graded.

Instructional Policy:

This course is part of the distance education program at the University of Florida. Instead of traditional lecture format, the medium for communication between course instructors, teaching assistants and students will be via Canvas, a user-friendly Web-based classroom management tool, and the World Wide Web.

Attendance: Students *must* participate in the bulletin board discussions and are required to visit the course website daily for important updates and bulletins.

Class Participation: Students are expected to constructively join in bulletin board discussions, with appropriate preparation; to post interesting and relevant information and articles on the class bulletin board, and to interact professionally with their classmates.

Performance Expectations: Students are expected to produce quality work of a standard comparable to any graduate level didactic course. Bulletin postings and discussions must be legible, constructive and appropriate. Students are required to think for themselves and will be expected to complete assignments that require the application of logic and reasoning skills when the answer may not be found in a book or the course notes.

Academic Honesty: All students are expected to abide by the student honor code. To review the student honor code read the information on standards of ethical Conduct at: <https://policy.ufl.edu/regulation/4-040/>

Plagiarism: Plagiarism includes any attempt to take credit for another person's work. This includes quoting directly from a book or web site, without crediting the source. Sources should always be referenced, a link to the website added, or quotation marks placed around the material. However, we expect more than simply cutting and pasting in this graduate level course. Students are expected to review, evaluate and comment on material they research, rather than simply copying relevant material. Your work will be graded accordingly.

Exams: Exams are referred to as module assessments. The content of each module assessment will cover that module's material. These are timed. The format consists of multiple choice, true/false, and short answer questions. Responses that contain obvious copied/pasted lecture material or "Googled" answers will be penalized.

Late Assignments: The midterm and final assignment will receive a 10%-point deduction for each day past the due date. Discussion Board assignments completed after the due date will receive 0 points. Module assessments will not be graded if submitted after the closing deadline without prior permission to do so.

Incomplete grades: Under special circumstances, if a student is unable to finish a course before the end of the semester, we may be able to assign an incomplete grade. An incomplete grade is a non-punitive grade assigned at the discretion of the course instructor. In this course an incomplete grade may be assigned if 1/3rd or more of the course assignments have been completed and if the student has remained in communication with TAs and instructors throughout the course or has made an effort to request an incomplete grade. If an incomplete grade is assigned, outstanding assignments must be completed by the end of the next semester, or by a due date agreed upon by the student and instructor in writing. If the assignments are not completed in this time, you will be assigned a grade based on the completed assignments.

Drop Dates: consult the UF Calendar of Critical Dates at <https://forensicscience.ufl.edu/resources/critical-dates/>

Students must inform us that they are withdrawing from a course to ensure appropriate tuition reimbursement. Deleting yourself from the course roster does not officially withdraw you from a course.

Important Dates:

For Assignment deadlines - see the course Calendar in WebCT.
For other important dates, consult the UF Calendar of Critical Dates and <http://www.registrar.ufl.edu/>

Additional information on the University of Florida Grades and Grading Policies may be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

“Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting the accommodation” University’s Honesty Policy (cheating and use of copyrighted materials) Academic Integrity – Students are expected to act in accordance with the University of Florida policy on academic integrity (see Student Conduct Code, the Graduate Student Handbook or this web site for more details: <https://policy.ufl.edu/regulation/4-040/>).

Cheating, lying, misrepresentation, or plagiarism in any form is unacceptable and inexcusable behavior. We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.

In-Class Recording:

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal education use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes

are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor. A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and deliver by an instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course.

A class lecture does not include lab sessions, student presentations, clinical presentation such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or guest lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless, of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third-party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

Accommodations for Students with Disabilities: The College and the course instructor are committed to providing reasonable accommodations to assist students’ coursework. To obtain academic accommodations, first register with the Dean of Students’ Office. The Dean of Students’ Office will provide documentation to be given to the course instructor at the time you request the accommodation.

Online Course Evaluations

Course evaluations are conducted online. “Students are expected to provide feedback on the quality of instruction in this course based on 10 criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu>.

Counseling and Student Health

Students may occasionally have personal issues that arise in the course of pursuing higher education or that may interfere with their academic performance. If you find yourself facing problems affecting your coursework, you are encouraged to talk with an instructor and to seek confidential assistance at the University of Florida Counseling Center, 352-392-1575, or Student Mental Health Services, 352-392-1171. Visit their web sites for more information: <https://one.ufl.edu/whole-gator/discover>. The Student Health Care Center at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services, including

primary care, women's health care, immunizations, mental health care, and pharmacy services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 352-733-0111 or check out the web site at: <https://ufhealth.org/>

Crisis intervention is always available 24/7 from:

Alachua County Crisis Center: (352) 264-6789

Do not wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance.