WILDLIFE ECOLOGY & CONSERVATION
11:216:464
Ecology, Evolution, and Natural Resources

Instructors

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Course Introduction

The conservation of wildlife populations requires a foundational knowledge of wildlife ecology, population dynamics, and demography. Many of the key issues in wildlife ecology are quantitative in nature, and proper conservation planning involves mathematical modeling approaches. In this course, you will gain an understanding of the mechanisms that impact wildlife populations, learn about the patterns that can be seen in fluctuations of wildlife populations due to biotic and abiotic influences, learn how ecologists, wildlife biologists, and others monitor and evaluate wildlife populations over short and long time scales, and consider the various management and conservation practices used to maintain and increase the population size of endangered and threatened wildlife populations.

Learning Goals

1. Understand the deterministic and stochastic factors affecting wildlife at the population level.
2. Apply mathematical population model approaches to address applied wildlife management issues.
3. Think critically and solve problems using evidence-based reasoning.
4. Communicate effectively orally and through written and graphical text.

Course Materials

Books: Fryxell, J.M., A.R.E. Sinclair, and G. Caughley. 2014. Wildlife Ecology, Conservation, and Management, 3rd edition. Wiley Blackwell Publishing (paperback)

Course Structure

The lecture portion of this course is in-person on Mondays. Labs will be delivered in-person as well at the designated times of your registered section (Thursday afternoons, Friday mornings). Topics and assignments are contained within modules, which are further broken down into weekly expectations. In addition to the lectures and labs, you will make progress throughout the semester on your term project. Term project assignments will be initiated during lab time and should be completed with your

partner on your time. Term project assignments will be turned in by specific deadlines to ensure that we can provide useful and timely feedback.

Requirements/Grading

Exams: There are 2 exams in this course (midterm & final). Exams are in 3 parts: 1) multiple choice covering important terminology, concepts, and people; 2) short answer questions predominantly covering principles/theories presented in class; and 3) critical thinking essay questions designed to allow students to apply knowledge to practical problems. Material in the course is hierarchical, with ideas and concepts building upon each other throughout the semester. Therefore, each exam/assignment is effectively cumulative.

Labs: There will be 9 quantitative labs throughout the course to help you further your understanding of various quantitative methods in wildlife ecology and conservation. These labs DIRECTLY RELATE TO YOUR TERM PROJECTS. You will work in assigned pairs to go through the exercises, but you will hand in your homework assignments separately. You are expected to remain in lab for the entire period. If you finish early, you likely have not spent enough time tweaking the models to truly understand how they work. Lab assignments are considered homework and should be done after (not during) class. Assignments will be due 1 week later, at the beginning of class. If you do not hand it in by the time class starts, a 5pt penalty will be imposed for each day the assignment is late until you reach 0. ATTENDANCE IS MANDATORY, unless there is a documented excuse. If you miss lab without a documented excuse, you will earn a zero for that assignment. If you do miss a lab, it is your responsibility to contact the TA and make arrangements to complete the assignment. Remaining lab periods will be dedicated to generating population models for your term project (see Project Tasks below).

Term Project: You and your partner will be assigned a NJ species that is managed, monitored, or conserved. Your task will be to develop a management plan for that species. The plan will include a general biology/ecology of the species, the reasons for needing management (e.g., game species, endangered species, overabundant), and a quantitative assessment of its population status. You will then use the models learned in class to devise a strategy for managing the population to achieve specific management goals. You will turn in a written plan, and you will deliver a 15-20 minute virtual presentation during one of the last two lab periods.

Project Tasks: In some weeks, there will also be an assigned Project Task. These tasks are designed to provide you class time to work on your term projects and to seek help from the course instructors. Details for each task will be provided on the day of lab, and you are expected to work on these throughout the semester. Do not wait until the last minute to throw your project together.

Grading Breakdown

Mid-Term	20%
Final	20%
Lab	20%
Project	40%

Participation: You are expected to be in class every day. Absences will be excused pending documentation (i.e. doctor's note, police report, obituary). It is also important to be mentally engaged in class. Paying attention, asking questions, and participating in discussions will improve your learning and allow you to get the most out of the class. Although a point value is not assigned for participation, it will be considered in calculating your final grade. There is NO extra credit.

Advising/Office Hours

There are no designated office hours for this course. We are available to you *by appointment* throughout the semester. Please give us a day's notice, if possible, so we can accommodate you as quickly as possible. Please do not hesitate to ask for help. That's what we are here for, and we want you to do well!

Academic Integrity

All work handed in must be your own. Cheating on exams or assignments will not be tolerated and will result in a zero for that assignment. Academic integrity infractions are subject to further disciplinary penalties through the University. See http://academicintegrity.rutgers.edu/academic-integrity-policy/ for the University's current policies.