WILDLIFE 353/553
ANALYSIS OF WILDLIFE POPULATIONS
SPRING SEMESTER 2019, 4 CREDITS

Contact Info

Instructor: Dr. Shawn M. Crimmins
Office: TNR 180A
Office Hours: By appointment
Phone: 715-346-2387
Email: shawn.crimmins@uwsp.edu

Classroom: Lecture-TNR 170, Tue Thu 12:30–1:45
Lab Section 1 - TNR 356, Tuesday 2:00–3:50
Lab Section 2 - TNR 356, Thursday 2:00–3:50

Communication

I communicate with the primarily through announcements in lecture which are usually subsequently posted to D2L. If you are someone who does not come to lecture or check D2L regularly you will miss important information that will likely affect your grade.

Learning Outcomes

Goal: This course will introduce students to the fundamental principles of population ecology, how such principles are described by basic mathematical models, how these models are related to management and conservation applications, and how to use modeling approaches to estimate parameters relevant to wildlife population dynamics.

Students satisfactorily completing this course should be able to:

1) Thoroughly understand the theoretical foundations of wildlife population dynamics.

2) Understand the basic principles of estimating animal abundance and vital rates.

3) Construct and interpret both structured and unstructured mathematical models of population growth.

4) Construct and interpret models of wildlife vital rates.

5) Understand and interpret the results of conservation planning tools such as population viability analysis.

Textbook (not required): L.S. Mills. 2013. Conservation of Wildlife Populations. 2nd edition. Blackwell.

Other Course Materials: Copies of PowerPoints, lecture handouts, sample exam questions, practice problems, lab materials, and supplemental reading materials will be posted to D2L.

Exams: We will have two exams during the semester, a mid-term on October 18 and a final exam on December 19. Each exam is worth 100 points, and the final exam is ***not*** comprehensive. Exams will be a combination of conceptual and applied content. I will provide all the equations you could possibly need. They are closed- book and closed-note, all you have access to is your glorious and wonderful mind. Illness or a family emergency may be cause for re-scheduling an exam, but only if you notify me at least 24 hours ***prior to*** the exam period. Don't email me an hour before the exam to tell me your tummy hurts.

Homework and Quizzes: Two homework assignments, totaling 25 points, and two in-class quizzes, also worth a total of 25 points, will be given throughout the semester. As with the exams, the in-class quizzes cannot be made up unless you notify me at least 24 hours prior to the class period in which the quiz was given (these are pop quizzes, meaning that I will not tell you ahead of time when a quiz will be given). Late homework assignments will lose two points each day after the deadline that they are submitted.

Labs: Most weeks we will meet for lab to go over practical examples of the topics we discuss in lecture. In other words, we'll go over how we actually build some basic versions of the types of models we talk about in class. There will be four lab assignments throughout the semester, each one worth 25 points. You'll typically have about two weeks to complete each lab assignment. You are welcome to work on the labs with other people but you must turn in your own lab write-up. Your assignments will be docked five points for every day they are late. There will also be two lab practicals, each worth 25 points. These will be done during the lab sessions and will entail doing a set of small analyses/models on your own and cannot be made up unless you have prior permission to miss lab that day.

Attendance: University policy dictates that I take attendance during the first eight days of the semester (place your initials next to your name on the sign-in sheet at the front), after that I do not take attendance. However, performance on exams is enhanced by regular class attendance. There is a very direct correlation between attendance and final grades. Simply put, if you do not regularly attend lectures then you will do poorly in the class. Similarly, the quality of your educational experience in this course will be directly related to the amount of time you invest in classroom preparation and the extent to which you become involved in classroom discussions. Besides, there's no good excuse for not wanting to hang out with me!

Grading: Final grades for the course will be awarded as follows: A = 93%; A- = 90%; B+ = 87%; B = 83%; B- = 80%; C+ = 77%; C = 73%; C- = 70%; D+ = 65%; D = 60%; F = <60%. The final class grade will be based on the percentage of total points earned, out of the total points possible (400).

Getting Help: Please do not be shy about coming in to office hours for help! My office hours are on the first page but you are welcome to email me to schedule a time outside of my regular office hours for help. If you are having any trouble understanding something in class, then do not hesitate to come by, as those problems will likely only get worse as the material becomes more complex and builds on itself.

In the following table is a tentative schedule for lectures and exams. This may be changed at any time at my discretion (Another reason to attend lectures!).

Tentative Lecture Schedule

DATE	LECTURE	LAB
Section 1 - Course Introduction and Statistics		
Tue, Jan 22	Course Introduction	Lab Introduction
Thu, Jan 24	Mathematical and Statistical Models	
Tue, Jan 29	***No Class, Midwest F&W***	***No Lab, Midwest F&W***
Thu, Jan 31	Model Selection and Inference	
Section 2 – Population Growth		
Tue, Feb 5	Exponential Growth I	Exponential Growth
Thu, Feb 7	Exponential Growth II	
Tue, Feb 12	***No Class, WI TWS***	***No Lab, WI TWS***
Thu, Feb 14	***No Class, WI TWS***	
Tue, Feb 19	Density Dependence I	Model Selection
Thu, Feb 21	Density Dependence II	
Tue, Feb 26	Logistic Growth	Logistic Growth
Thu, Feb 28	Lotka-Volterra Models I (Competition)	
Tue, Mar 5	Lotka-Volterra Models II (Predation)	***No Lab, Exam Week***
Thu, Mar 7	***EXAM 1***	
Section 3 – Abundance Estimation		
Tue, Mar 12	Mark-Recapture Models I	Closed Mark-Recapture
Thu, Mar 14	Mark-Recapture Models II	
Tue, Mar 19	Distance Sampling	***Lab Practical #1***
Thu, Mar 21	Population Indices	
Tue, Mar 26	Occupancy Models I	Occupancy Models
Thu, Mar 28	Occupancy Models II	
Tue, Apr 2	Age-at-Harvest Models I	Age at Harvest Models
Thu, Apr 4	Age-at-Harvest Models II	
Section 4 – Vital Rates		
Tue, Apr 9	Guest Lecture - TBD	***No Lab***
Thu, Apr 11	Guest Lecture - TBD	
Tue, Apr 16	Kaplan-Meier	Kaplan-Meier
Thu, Apr 18	Life Tables	
Tue, Apr 23	Matrix Models I	Matrix Models I
Thu, Apr 25	Matrix Models II	
Tue, Apr 30	Matrix Models III	Matrix Models II
Thu, May 2	Population Viability Models	
Tue, May 7	Population Viability Models I	***Lab Practical #2***
Thu, May 9	Population Viability Models II	
Th, May 16	***FINAL EXAM (12:30–2:30)***	

University Policies (my interpretations)

Academic Dishonesty: Don't cheat, seriously. Aside from the fact that cheating is cause for dismissal from the university, you are just short-changing yourself when you stoop to that. You're better than that, and UWSP is better than that. If you wanted an "education" where your grades, rather than your learning, was the most important thing then you should have gone somewhere else.

Harassment: Be cool. Nobody likes a bully or a jerk. If I see any form of harassment, whether in my classroom or anywhere else on campus, I'll report it to the Dean of Students, I've got no patience for that kind of behavior. Everybody is different, and we all deserve to be treated with respect.