Dynamics and Management of Wildlife Populations (NRES 488)

FALL 2019

Course Information

Meeting Times

Class: Monday and Wednesday, DMSC 102, 9:00AM - 9:50AM
Lab: Monday or Wednesday, FA 234, 2:30PM - 5:20PM

Instructor Information:

Instructor: Perry Williams, Ph.D.
Office: FA 240
Phone: 775-682-8141
Email: perryw@unr.edu
Office Hours: Tues/Thurs 12:00PM - 2:00 PM

TA Information:

Instructor: Julie Brockman
Office: FA 240
Email: jcbroc@gmail.com
Office Hours: Mon/Wed 10:00AM - 11:00AM
1:30PM - 2:30 PM (and by appointment)

Course description

Virtually all progress in science requires using models to gain insight from data. This course will focus on gaining insight of wildlife population dynamics using statistics, mathematics, and observation. We will focus on the fundamental principles of modeling, data analysis, and using data analyses to inform wildlife management. Applications will focus on questions common to wildlife research, including: estimating abundance, survival probability, and habitat selection. Students will experience the philosophy underlying scientific management, and interpretation and decision-making in the face of uncertainty existing in ecological systems of interest to managers.

Course prerequisites

Required prerequisites

- APST 270 or STAT 152
- BIOL 314
- NRES 310
- Junior or Senior standing

Required texts:

None

Student learning outcomes:

1. Demonstrate critical thinking skills by using data analysis to inform natural resource management decisions
2. Demonstrate ability to analyze data using modern statistical and mathematical approaches.
3. Demonstrate verbal and written communications skills by: 1) preparing a professional paper describing their approach and conclusion to a management decision; 2) prepare an oral presentation describing their work.

Course requirements:

Regular attendance is essential and expected.

Grading criteria, scale, and standards:

Grading Policy:

- Homework, Assignments, and labs 20%
- Midterm Exams (2) 40%
- Final Exam 20%
- Team project 20%

89.5%	$<$	A		
87%	$<$	B+	$\leq$	89.5%
82.5%	$<$	B	$\leq$	87%
79.5%	$<$	B-	$\leq$	82.5%
77%	$<$	C+	$\leq$	79.5%
72.5%	$<$	C	$\leq$	77%
69.5%	$<$	C-	$\leq$	72.5%
67%	$<$	D+	$\leq$	69.5%
62.5%	$<$	D	$\leq$	67%
59.5%	$<$	D-	$\leq$	62.5%
		F	$\leq$	59.5%

Late Work Policy:

20% per day, up to 4 days or extreme circumstances.

Anticipated topics:

- `R` Statistical Software
- Modeling basics
  - Simple Linear regression
  - Multiple Linear regression
  - Generalized linear regression
  - Mixture models
    - Survival models
    - Occupancy models

  - Resource/habitat selection models
  - Abundance models
- Model Checking
- Model Selection
- Bayesian Inference

University Policies

Statement on Academic Dishonesty:

The University Academic Standards Policy defines academic dishonesty, and mandates specific sanctions for violations. See the University Academic Standards policy: UAM 6,502.

Statement on disability services:

Any student with a disability needing academic adjustments or accommodations is requested to speak with me or the Disability Resource Center (Pennington Achievement Center Suite 230) as soon as possible to arrange for appropriate accommodations.

This course may leverage 3rd party web/multimedia content, if you experience any issues accessing this content, please notify your instructor

Statement on audio and video recording:

Surreptitious or covert video-taping of class or unauthorized audio recording of class is prohibited by law and by Board of Regents policy. This class may be videotaped or audio recorded only with the written permission of the instructor. In order to accommodate students with disabilities, some students may have been given permission to record class lectures and discussions. Therefore, students should understand that their comments during class may be recorded.

Additional Information

Methods for communication

In the event of class cancellation, new information on meeting times, or room changes, I will send an email to the class roster.

Additional detail about academic dishonesty

Statement for academic success services

Your student fees cover usage of the Math Center (775-784-4433), Tutoring Center (775-784-6801), and University Writing Center (775-784-6030). These centers support your classroom learning, and are there for you to leverage to improve your educational experience. Seeking help outside of class is the sign of a responsible and successful student.