



AUBURN UNIVERSITY

WILD 7150 Section: 001
Adv Analysis for Ecology
Fall 2026

Faculty Information

Liam Berigan
Email: lib0016@auburn.edu
Office Location: 2349 CFWE Building
Office Hours: Tuesdays, 10am–12pm

Course Information

Credit Hours: 4

Prerequisites: AGRI5010, AGRI5013, AGRI6010, AGRI6013, STAT7000, WILD5750, WILD6750

Contact Hours: 5

Catalog Description: Applied training in advanced analytical procedures commonly used in ecological sciences including modeling of survival, reproduction, habitat selection, population growth, density-dependence, and morphometrics. Departmental approval.

Modality: Combined Lecture and Lab

Meeting Information

Meeting Times: 10:00 AM-10:50 AM, 3:00 PM-4:50 PM

Meeting Days: MON, WED, FRI, WED

Meeting Location: Forestry & Wildlife Sci Bldg 2217, Forestry & Wildlife Sci Bldg 2217

Course Description

Advanced training in the application of analytical procedures to ecological (and other) sciences, such as the analysis and modeling of survival, reproduction, habitat selection, population growth, density-dependence, and morphometrics. The course emphasizes model building and evaluation.

Course Objectives

- Familiarize the student with the application of advanced analytical procedures to topics commonly studied in ecological sciences, including, but not limited to: ANOVA, ANCOVA, general linear modeling, generalized linear modeling, random- and mixed-effects models, repeated measures and nested models, likelihood, principle components analysis, causality modeling, Akaike information criterion, multimodel inference, bootstrapping, and Bayesian statistics.
- Familiarize the student with the different procedures that can be used in the analysis of various topics, and the strengths and weaknesses of each procedure.
- Train the student how to perform advanced analytical procedures using the statistical computing language R.

Student Learning Outcomes

- Students should be able to 1) evaluate when advanced statistical techniques are appropriate for use, 2) apply these techniques to their own datasets using programs like R, and 3) interpret the results in the context of their research questions

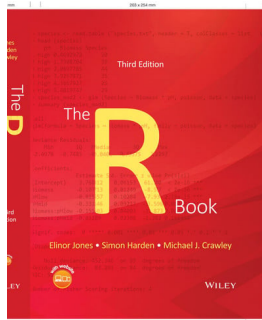
Required Devices

Both lectures and labs for this course are taught in Room 2217 of the College of Forestry, Wildlife and Environment building. This is a lecture hall, and thus no university computers are available for the lab period. **Students will need to bring a laptop, or other computing device capable of running R, to lab periods.**

Required Materials

Title: None required

Recommended Materials



Title: The R Book

ISBN: 9781119634324

Authors: Elinor Jones, Simon Harden,
Michael J. Crawley

Publisher: John Wiley & Sons

Publication Date: 2022-09-19

Edition: 3

Course Schedule

This course will be broken into 13 required modules, with two optional modules. These modules and all the content associated with each module are listed on the Modules page in Canvas. The following outline presents the topics to be covered in the modules:

- Basic linear regression (8/17–8/26)
- Advanced regression topics (8/26–9/2)
- Analysis of categorical data (9/2–9/9)
- Multivariable modeling and collinearity (9/9–9/16)
- Interactions (9/16–9/23)
- Mixed-effects models (9/23–9/30)
- Nested designs (9/30–10/7)

Midterm exam (10/14, during lab period)

- Generalized linear models (10/14–10/21)
- Model building and prediction (10/21–10/28)
- Bayesian statistics (10/28–11/4)
- Causality modeling (11/4–11/11)
- Generalized Additive Models (11/11–11/18)
- Multivariate analyses (11/18–12/2)

Thanksgiving break (11/23–11/27)

- Optional module: Randomization procedures (recorded lectures)
- Optional module: Structural equation modeling (recorded lectures)

Final exam (12/7)

Assessments, Exams, & Evaluations

Students will be assessed through the following:

- Lab Assignments (50% of grade)
- Quizzes (10%)
- Midterm Exam (15%)
- Final Exam (25%)

Each course module will consist of 1) 3 lectures, generally beginning on Wednesday and ending on Monday; 2) a multiple choice quiz on the material; and 3) a lab on Wednesday afternoons. Exams will occur halfway through the semester and at the end of the course.

Quizzes: Due at 10pm on Wednesday, usually 2 days after the last lecture in the module. These are open note, but AI or other students may not be consulted.

Lab Assignments: Due at the conclusion of the lab period (4:50pm on Wednesdays), and must be turned in in-person unless arrangements have been made with the instructor. Students are encouraged to begin lab assignments after Monday's lecture, and complete as much of the lab as they can individually prior to the lab period. Use of AI and notes is permitted, and consultation with other students is encouraged during lab assignments.

Exams: Held during the lab period (midterm) or designated time during exam week (final). Both of these exams will have a practical (i.e., running code) and theoretical element. These exams must be completed in person. The theoretical portion of the exam is closed-note, while the practical portion is open-note. However, AI use and consultation with other students is not permitted in either portion of the exam.

Course Communication Policy

Email and Canvas are my preferred methods of communication for this course. Students should give me 48 hours to get back to them on any communication, one week for grading turnaround time on assignments, and two weeks turnaround for exams. I reserve the right to alter these feedback parameters due to contingencies such as holidays, campus emergencies, weather, professional activities, etc. with notice provided. Students are responsible for checking their university email frequently and configuring Canvas notifications to ensure they remain up-to-date on any changes to the course.

Grading Standards & Attendance Expectations

Grading

We utilize the standard Auburn grading schema (10% bins for each letter grade, no pluses or minuses). If you're new to this system, please see the table below:

<i>Letter</i>	<i>Range</i>
A	90%+
B	80–89%
C	70–79%
D	60–69%
F	59% or less

Attendance

Students are expected to attend both lecture and lab periods. However, I also understand that graduate students frequently have fieldwork, conferences, etc. which may make it difficult to attend all classes. To accommodate this, I record all lectures using Panopto and make these recordings available on Canvas immediately after class. Attendance is not taken at lectures, and if necessary you can miss a lecture without notifying me. If you do so, you are expected to watch the online recording of the lecture on your own time, and visit office hours if you have any questions. Labs, however, do have required attendance, as assignments are graded in-person. If you need to miss a lab period for a university-approved excuse, please email me (ahead of time, if possible) to make arrangements to have your lab assignment graded.

Late Assignment Policy

It is very important that students submit work on time, or they will find it very difficult to catch up. Any lab assignment that is submitted after the due date (by email) will have one letter grade deducted from it per day late, in addition to penalties for incorrect answers. *As quiz answers will be posted shortly after the quiz is due, no late quizzes will be accepted without a university-approved excuse.* Students should reach out to me as early as possible to discuss any concerns they might have about submitting assignments or falling behind. In situations where you are experiencing technical difficulties submitting your assignment near the deadline, please consult the Canvas help desk resources that are available in the navigation bar on the left side of the screen. Please work to avoid encountering technical difficulties near the assignment due dates by completing your work ahead of deadlines. I understand that, as graduate students, research, conferences, or various other commitments may make it difficult for you to submit your work on time. In the event of such conflicts, please contact me so that we can discuss your options.

Make-Up Policy

Students who miss the normal exams will need to contact me and turn in a valid excuse within 48 hours from the time that the exams were given. The makeup exam will need to be completed within ONE week (5 workdays) from the time that the exams were given.

Students who miss the makeup without valid excuses will get zero on the exam.

The format, questions, and difficulty-level of make-up exams are not guaranteed to be the same as the normal exam, and are at my discretion. Valid excuses include 1) illness documented by a physician; 2) evidence of personal or family emergency; and 3) official university excuses. Excuses are only accepted for the exams and labs; no excuses are needed for general lectures as attendance is not taken.

Academic Integrity

Auburn University upholds the highest standards of honesty and integrity in all academic pursuits. Students are expected to conduct themselves in accordance with these principles at all times. Please review Auburn University's Academic Integrity [Policy](#) to familiarize yourself with actions that constitute violations of this policy. Any alleged violations will be reported to the Office of the Provost for review and appropriate action. The Academic Integrity Policy is applicable to all students taking classes at Auburn University with the exception of students that are enrolled in the Doctor of Veterinary Medicine or Doctor of Pharmacy programs.

Generative Artificial Intelligence Tools

AI Policy: Permitted in Certain Assignments Without Attribution

In this course, students are encouraged to use Generative AI Tools like ChatGPT, Claude, or Copilot to support their work on certain assignments. AI is permitted for use on lab assignments, but not for quizzes or exams. Be aware that in using AI to generate code, the code generated will often be incorrect, do something different from what you have asked, or use algorithms that are more complicated than necessary. Thus, if you plan to use AI to minimize your work in this class, you will likely end up doing more work than if you just learned the code I will teach you. It's best to try writing the code yourself and then using AI to figure out why something doesn't work.

Students should exercise caution and avoid sharing any sensitive or private information when using these tools. Examples of such information include personally identifiable information (PII), protected health information (PHI), financial data, intellectual property (IP), and any other data that might be legally protected.

ADA Compliance

Students who need accommodations should submit their approved accommodations through the AIM Student Portal on AU-Access and communicate directly with faculty about accommodations for their course. It is important for the student to complete these steps as soon as possible; accommodations are not retroactive. Students who have not established accommodations through the Office of Accessibility but need accommodations should contact the Office of Accessibility at ACCESSIBILITY@auburn.edu or (334) 844-2096 (V/TT). The Office of Accessibility is located in Haley Center 1228.

Equal Opportunity Compliance

If you have experienced discrimination, harassment, sexual misconduct, relationship violence, stalking, or another situation affecting your ability to participate fully in the Auburn University community, the Office of Equal Opportunity Compliance (EOC) is available to help. EOC also coordinates accommodations related to religious observances, pregnancy, and related medical conditions. Information about EOC policies, resources, and religious and pregnancy-related accommodations, including request forms and a map of campus lactation spaces, is available at aub.ie/eoc.

Auburn's non-discrimination and anti-harassment statement is available at this [website](#). Most Auburn University faculty and staff are required to share information about possible discrimination, harassment, retaliation, or sexual misconduct with EOC so that support, resources, and information about available options can be offered to those who may be impacted. Receiving a report does not automatically result in a formal complaint or investigation. Students seeking confidential support may contact Safe Harbor (334-844-7233) or Student Counseling & Psychological Services (334-844-5123). To learn more about EOC services, reporting options, supportive measures, and accommodations, visit aub.ie/eoc, email eoc@auburn.edu, or call 334-844-4794.

Student Conduct

Student conduct promotes a safe, respectful, and accountable campus environment by upholding the [Code of Student Conduct](#) and addressing behaviors that affect the Auburn community. Students may contact the office with non-academic questions or concerns, report potential policy violations, or submit a written student complaint by calling 334-844-1305 or visiting auburn.edu/studentconduct.

Auburn Cares

Do you need support or are you concerned about another person? Auburn Cares is here for you as you navigate academic, financial, mental health, or relationship issues. Auburn Cares is a good first point of contact for students experiencing a difficult situation. Contact Auburn Cares at 334-844-1305 or aub.ie/auburncares to request support today for yourself or another person.

Student Counseling & Psychological Services

Student Counseling & Psychological Services provides confidential, no-cost mental health counseling and psychiatric services to Auburn students. To schedule an appointment or speak with a counselor immediately 24/7/365, contact Student Counseling & Psychological Services at 334-844-5123.

Mental Health Emergencies

If you or someone else are in immediate danger, call 911. If you would like to speak with someone confidentially, Safe Harbor (334-844-7233) and Student Counseling & Psychological Services (334-844-5123) are both confidential resources. Safe Harbor provides support to students who have experienced sexual or relationship violence by connecting them with academic, medical, mental health, and safety resources. For additional information, visit auburn.edu/safeharbor.

Elasticity Statement

The instructor will make every effort to follow the guidelines of this syllabus as listed; however, the instructor reserves the right to amend this document as the need arises consistent with university policy. In such instances, the instructor will notify students in class and/or via email and will endeavor to provide reasonable time for students to adjust to any changes.

Changes to the syllabus may become necessary as the class progresses. Updates to the course schedule will be provided to students in class and/or via email.