Quantitative Wildlife Ecology (WIS 4601)

Instructor: Ellen P. Robertson
TA: Suyash G. Sawant

Fall 2025

Ellen's E-mail: ellen.robertson@ufl.edu
Ellen's Office Hours: W 10:30–11:30am or by appt
Ellen's Office Hour Locations: NZ 307

Suyash's E-mail: s.sawant@ufl.edu
Suyash's Office Hours: M 12–1pm or by appt
Suyash's Office Hour Location: NZ 307

Lecture Hours: M and W, period 3 (9:35–10:25 am)
Lecture Room: (M, W) MCCB 3096

Lab Hours: F periods 3–4 (9:35–11:30am)
Lab Room: (F) MCCB 3086

This syllabus is a broad description of course objectives and plan of work; it is subject to change.

1. **Codification**: WIS 4601
2. **Credits**: 3 crds
3. **Pre-requirements**: STA 2023 and WIS 3401
4. **Course Description**: Many ecological, management, and conservation needs for animal populations are related to assessing questions related to "how many, how much, where, and when". The goal of this course is to provide students with the motivation and training to assess these questions as commonly encountered by natural resource professionals. Upon completing this course, students will be able to formulate hypotheses related to individuals, populations or communities of animals, design studies to test these hypotheses, and analyze actual data sets from different field settings, and present scientific findings following the guidelines for scientific report writing.
5. **Course Objectives**: At the completion of this course, students will be able to:
   (a) Recognize, compare and contrast concepts and vocabulary related to models in wildlife ecology and conservation.
   (b) Describe the key attributes of good experimental design
   (c) Construct testable hypotheses
   (d) Parameterize models using data and characterize uncertainty
   (e) Compare fit among models
   (f) Interpret model output

(g) Develop scientific figures that summarize quantitative information

6. **Tentative Course Outline**:

The weekly coverage might change as it depends on the progress of the class. Notation: **Lecture 1** are Mondays, **Lecture 2** are Wednesdays and **Lab** are Fridays. All assignments (except exams) are due before 11pm on Thursdays.

Week	Content
Week 0 (Aug 21–22)	• **Friday**: Class Introduction
Week 1 (Aug 25–29)	• **Monday**: Becoming an Ecological Detective • **Wednesday**: Experimental Design Part 1 • **Friday(Lab)**: Introduction to `R` • Read: Hilborn 1993
Week 2 (Sep 1–5)	• **Monday**: Holiday (no class) • **Wednesday**: Experimental Design Part 2 • **Friday(Lab)**: Making graphs in `R` • Read: Ecological Detective Ch 1, Hilborn 1993, Krebs Ch 10, Johnson 2002 • *Assignments*: Quiz 1 and 2, and Lab 1
Week 3 (Sep 8–12)	• **Monday**: Exam 1 • **Wednesday**: Summary Statistics • **Friday (Lab)**: Data management • *Assignments*: Exam 1, Lab 2, Quiz 3
Week 4 (Sep 15–19)	• **Monday**: Probability distributions I (Exercise) • **Wednesday**: Probability distributions II • **Friday (Lab)**: Probability distributions • Read Bolker 2002 Ch 4, Wildlife Techniques Ch 4 • *Assignments*: Quiz 4, Lab 3
Week 5 (Sep 22–26)	• **Monday**: Parametric tests I • **Wednesday**: Parametric tests II • **Friday (Lab)**: Parametric tests • Read Quinn and Keough p. 32–44; 173–187 • *Assignments*: Quiz 5, Lab 4
Week 6 (Sep 29 – Oct 3)	• **Monday**: Linear regression I • **Wednesday**: Linear regression II • **Friday (Lab)**: Linear regression • Read Quinnn and Keough p. 78–90 • *Assignments*: Quiz 6, Lab 5
Week 7 (Oct 6–10)	• **Monday**: Generalized Linear Models (GLM) • **Wednesday**: GLM • **Friday (Lab)**: GLM • *Assignments*: Quiz 7, Lab 6

Week 8 (Oct 13–17)	• **Monday**: Exam 2 • **Wednesday**: Uncertainty • Homecoming (no Lab on Friday) • *Assignments*: Quiz 8, Lab 7
Week 9 (Oct 20–24)	• **Monday**: Detectability/Quadrat and Line transect • **Wednesday**: Detectability and Distance sampling • **Friday (Lab)**: Distance sampling • Read Caughley 1974; Le Resche and Rausch 1974 • *Assignments*: Quiz 9, Group projects
Week 10 (Oct 27–Oct 31)	• **Monday**: Abundance Estimation • **Wednesday**: Abundance Estimation (class demonstration) • **Friday (Lab)**: Lincoln-Petersen I • Read Pollock et al. 1990 • *Assignments*: Quiz 10, Lab 8
Week 11 (Nov 3–7)	• **Monday**: Capture models • **Wednesday**: Open models I (CJS) • **Friday (Lab)**: Lincoln-Petersen II • *Assignments*: Quiz 11, Lab 9
Week 12 (Nov 10–14)	• **Monday**: Open models II (CJS and Robust Design) • **Wednesday**: Open models III (Known fates, recovery) • **Friday (Lab)**: CJS • Read Karanth and Nichols 1998 • *Assignments*: Quiz 12, Lab 10
Week 13 (Nov 17–21)	• **Monday**: Occupancy I • **Wednesday**: Occupancy II • **Friday (Lab)**: Occupancy • Read MacKenzie 2002 • *Assignments*: Quiz 13, Lab 11
Week 14 (Nov 24–28)	• **Thanksgiving break (no classes or lab)**
Week 15 (Dec 1–5)	• **Monday**: Careers in Research • **Wednesday**: Final exam review • **Friday**: No lab (reading day) • *Assignments*: Quiz 14, Lab 12
Week 16 (Dec 8–12)	• **Monday**: No class (exam week) • **Wednesday Dec 10**: Final exam

7. **Educational Strategies**: We follow an active learning framework that include inquire-based lectures, analysis of the primary literature, computer exercises, group projects and group discussions

8. **Minimum resources available**: Lecture room, Computer lab, audio-visual equipment.

9. **Evaluation strategies**:

Quizzes	10%
Lab exercises	58%
Group projects	14%
Exams	18%

10. **Grading**:

>= 93.00 %	A	90.00–92.99	A-
87.00–89.99	B+	83.00–86.99	B
80.00–82.99	B-	77.00–79.99	C+
73.00–76.99	C	70.00–72.99	C-
67.00–69.99	D+	63.00–66.99	D
60.00–62.99	D-	< 59.99	E

Information on current UF grading policies is available at https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx.

11. **Textbook**: None, course packet will be available electronically via CANVAS that contains required weekly readings, lecture, and lab information.

12. **Class attendance and demeanor policy**: Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/.

13. **Rights of students with Disabilities**: The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. 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 accommodation.
0001 Reid Hall, 352-392-8565, https://disability.ufl.edu/

14. **Student evaluations**: Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations 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/results/.

15. **Academic Policies and Resources**: Academic policies for this course are consistent with university policies. See https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/

16. **Academic honesty**: As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.” You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this

assignment." It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code.

17. **Campus Health and Wellness Resources**: Campus Health and Wellness Resources Students experiencing crises or personal problems that interfere with their general well- being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

    - Visit https://one.uf.edu/whole-gator/topics for resources that are designed to help you thrive physically, mentally, and emotionally at UF.
    - Please contact U Matter We Care https://umatter.ufl.edu/ for additional and immediate support.
    - University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu Counseling Services Groups and Workshops Outreach and Consultation Self-Help Library Wellness Coaching
    - Career Connections Center, First Floor JWRU, 392-1601, https://career.ufl.edu/.
    - Student Success Initiative, http://studentsuccess.ufl.edu.

    Student Complaints:

    - Residential Course: https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/.
    - Online Course: https://pfs.tnt.aa.ufl.edu/state-authorization-status/#student-complaint Additional information Instructors may choose to clarify in their syllabus their teaching philosophy, expectations for classroom behavior, utilization of e-learning, and other information that will help students succeed in the course.

18. **Software use**: All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

19. **Online Course Evaluation** Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of

university and college criteria. Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at: https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at: https://gatorevals.aa.ufl.edu/public-results/.