Ecology Laboratory

**Where?** SEL 3101

**When?** Tuesday [9:00-11:50am, 13:00-15:50pm]; Wed [14:00-16:50]; Thurs [9:30am-12:20]

**Who?**
Som B. Ale, PhD (sale1@uic.edu) SES 3358, Of. Hrs Tuesday (10-11am, Wed (3-5pm), Thurs (11am-12)
Michael Ricketts (rickett4@uic.edu), Tues AM (CRN 34265) SES 3342, Of. 2-3pm (Tues)
Jason Davlantes (jdavla2@uic.edu), Wed (CRN 32278) SES 3464, Of. 5-6pm (Wed)
Luis Beltran (lbeltr6@uic.edu), Tues PM (CRN 25694) SES 3470, Of. 1-2pm (Wed)
Alexander Pergams (pergams1@uic.edu), Thurs (CRN 25695) SES 3440, Of. 12:30-1:30pm (Thurs))

**What?**
The course will combine lectures, discussions, hands-on activities, and field trips. The goal is to learn and apply important concepts from ecology and evolution, and to experience nature first-hand. Course performance will be based upon 1) Field trips and associated field trip reports, 2) Field experiment paper, 3) Quizzes, 4) Assignments, and 5) Participation.

**Field Trips:**
There will be three (all-day) **Saturday and Sunday field trips** to various natural areas. **You must attend two field trips but if you attend all three you will receive 5 bonus points.** On days with field trips we will board buses at the loading dock (W Taylor St) of SES at 7:45AM and return by 4PM. It is mandatory that you ride on the bus (you are NOT allowed to drive separately!). You are responsible for bringing along a lunch and snacks, pens, pencils, and notebook for taking field notes.

For two of the three field trips you will be responsible for writing a laboratory report (max 10 pages including figures but excluding reference page/s). You cannot write a report from the field trip you have not attended. **Failure to attend two field trips will result in loss of all “participation” points (see below).**

The presence of plagiarized or identical prose among lab reports will be grounds for a zero score.

You will have at least two weeks to write a field report following each field trip.

3 March (Saturday) Warren Woods State Park (Forest ecology and competition)
17 March (Saturday) Indiana Dunes National Lakeshore (Ecological succession)
8 April (Sunday) Volo Bog State Park (Plant communities and nutrient cycling)

**Field Experiment:**
During the semester you will conduct experiments on the feeding ecology of cottontail rabbits at the UIC Greenhouse or on seed-eating birds. You will place feeding trays with pellets of seeds for foragers for a period of three days in a row. The results from this project will be written up as a short research paper.

**Quizzes:**
Each laboratory period will begin with a lecture and discussion on a general topic in ecology. These lectures will provide general concepts and provide a foundation for the material of the lab and field trips. There will be five quizzes spread throughout the semester that will test on the material of these lectures. You may miss one quiz or drop your lowest score of the five quizzes.
Assignments:
There will be four homework assignments that will be distributed throughout the semester. The first and third are population modeling exercises that you will complete using Microsoft Excel. The second is a list of peer-reviewed references that you will create, using information from search sites, such as “Web of Science”, pertaining to the ecology of species that we will assign you to. Two of these references you will later use for the fourth assignment, that is, a 10-minute presentation in lab, at the end of the semester.

Participation:
You are expected to come to all labs and participate in activities and discussion. Expect to be in lab for the entire allotted time. On field trips we expect students to participate fully in the nature activities, hypothesis formulations and data collection. Failure to participate will result in the loss of points.

Grading:   
2 field trip reports  x  100 = 200   
1 foraging expt. paper = 50   
4 quizzes  x  25 = 100   
4 Assignments  x  25 = 100   
Participation = 50   
Total = 500   
≥ 450 = A; 400-449 = B; 350-399 = C; 300-349 = D

Syllabus

Week of:
Jan 15: Ecology: Interaction of organisms with their environment
- Discussion of urban ecology
- Introduction to Campus wildlife and habitat

Jan 22: Population Dynamics
- Using Excel to model population growth
- Assignment # 1 on Population Growth

Jan 29: Foraging Ecology
- QUIZ 1
- Assignment 1 DUE
- Discussion on Setting-up foraging experiment (on mammal [e.g., cottontail] or bird [e.g., sparrow]). The class will be divided into two groups: One group will work on cottontail and the other group on sparrow. Students in groups of 2 to 3 (never a group of 4) will prepare a concept paper (one page per group) on how do they conduct their foraging experiment.
- Assignment # 2 on Wildlife Literature Review [Each student for this exercise will be assigned a species.]
Feb 5: Species Interactions
- **Assignment 2 DUE**
  - More using Excel to model species interactions
  - Assignment # 3 on Multispecies Population Dynamics
  - Note: Students, in group of 2-3, turn in a collective concept paper on their foraging adventure for screening and approval. Once approved, they will immediately begin collecting data using feeding trays.

Feb 12: Complex Life Histories and Life History Tradeoffs
- **QUIZ 2**
- **Assignment 3 DUE**
  - How to write a lab report
  - Foraging data collection (continues)

Feb 19: Community Ecology – Direct and Indirect Effects
- Foraging data analysis

Feb 26: Species Interactions – Forest Ecology
- Preview on Warren Woods (Temperate Deciduous Forests and competition)

_**All-day Saturday (March 3) field trip to Warren Woods (Forest Ecology)**_

March 5: Biodiversity Conservation
- **QUIZ 3**
  - Foraging Lab Report DUE
  - Analyze data from Warren Woods

Mar 12: Succession
- Preview: Indiana Dunes

_**All-day Saturday (17 March) field trip to Indiana Dunes (Terrestrial Succession)**_

Mar 19: Nutrient Cycling
- Warren Woods Report DUE
- Analyze data from Indiana Dunes

Mar 26: Spring Break

April 2: Global Climate Change
- **QUIZ 4**
  - Indiana Dunes report DUE
  - Preview on Volo Bog

_**All-day Sunday (8 April) field trip to Volo Bog (Aquatic Plant and succession)**_
April 9: Evolutionary Ecology
  - Analyze data from Volo Bog
  - Assignments # 4: Presentations
  - Warren Woods report rewrite (optional) for max 10 points

Apr 16: On the ecology of large predator (special topic)

Apr 23: Human Ecology
  - QUIZ 5
  - Volo Bog Report DUE
  - Assignment # 4: Presentations (cont.)

Apr 30: No Formal (lecture) Class/Assignment catch-up
  - Assignment # 4: Presentations