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?**
- Dr. Som B. Ale (sale1@uic.edu) SES 3358, Of. hrs (OPEN)
- Ms. Meg Malone (mmalon29@uic.edu) (Tue AM, CRN 23856) SES 3348, Of. hrs (Mon 2-3)
- Ms. Crystal Guzmán (cguzma8@uic.edu) (Tue PM, CRN 12137) SES 3458, Of. hrs (Tue 11-12)
- Ms. Elsa Anderson (eholden2@uic.edu) (Wed, CRN 12140) SES 3326, Of. hrs (Mon 2-3)
- Mr. Nolan Bielinski (nbieli2@uic.edu) (Thurs, CRN 12142) SES 1454, Of. hrs (Wed 10-11)

**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 field trips** to various natural areas. **You must attend all three field trips.** On days with field trips we will board school buses at the loading dock (845 W Taylor St) in front 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 wearing appropriate field clothes and 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). **Every student must write a lab report for the Warren Woods field trip.** You may choose to write your second report on Indiana Dunes or Volo Bog. You must write your own report. **The presence of plagiarized or identical prose among lab reports will be grounds for a score of ZERO.** You may choose which field trips to write up, but you must have attended the field trip to write a report on that trip. **Failure to attend all three field trips will result in loss of all “participation” points (see below).**

Lab reports are due at the start of your assigned section.

<table>
<thead>
<tr>
<th>Date</th>
<th>Field Trip</th>
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<tbody>
<tr>
<td>Sept 24</td>
<td><strong>Warren Woods State Park (Forest ecology and competition)</strong></td>
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<tr>
<td>Oct 15</td>
<td><strong>Indiana Dunes National Lakeshore (Ecological succession)</strong></td>
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<tr>
<td>Nov 5</td>
<td><strong>Volo Bog State Park (Plant communities and nutrient cycling)</strong></td>
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**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 or seeds for foragers and collect data for a minimum 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 offer 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 materials of these lectures. You may miss one quiz or drop your lowest score of the five quizzes.
Assignments:
The there will be four homework assignments distributed throughout the semester. The first and third are population modeling exercises that you will complete using Microsoft Excel. The second is a reference list of peer-reviewed articles compiled from search sites, such as “Web of Science”, pertaining to the ecology of an assigned species. For the fourth assignment, you will present on two of these articles with a 10-minute PowerPoint 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 in the aforementioned activities will result in the loss of points.

Grading:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Value</th>
<th>Points</th>
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<tbody>
<tr>
<td>2 field trip reports</td>
<td>x</td>
<td>100</td>
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<tr>
<td>1 foraging expt. paper</td>
<td>x</td>
<td>50</td>
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<tr>
<td>4 quizzes</td>
<td>x</td>
<td>25</td>
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<tr>
<td>4 Assignments</td>
<td>x</td>
<td>25</td>
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<tr>
<td>Participation</td>
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<td><strong>Total</strong></td>
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≥450 = A; 400-449 = B; 350-399 = C; 300-349 = D

Syllabus

Week of:
- Discussion of urban ecology
- Introduction to campus wildlife and habitat

Aug 29: Population Dynamics
- Using Excel to model population growth
- Assignment # 1 on Population Growth

Sep 5: 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.]

Sept 12: Population Interactions
- Assignment 2 due
- More using Excel to model species interactions
- Assignment # 3 on Multispecies Population Dynamics
- Note: Students turn in a collective concept paper on their foraging adventure for screening and approval. Once approved, they may begin collecting data using feeding trays.
Sept 19: Species Interactions – Forest Ecology
- Assignment 3 due
- Preview on Warren Woods (Temperate Deciduous Forest)
- Foraging data collection (continues)

All-day Saturday (Sept 24) field trip to Warren Woods (Forest Ecology)

Sep 26: Complex Life Histories and Life History Tradeoffs
- QUIZ 2
- Analyze data from Warren Woods
- Foraging data collection (continues)

Oct 3: Community Ecology – Direct and Indirect Effects
- How to write a Lab Report

Oct 10: Succession
- QUIZ 3
- Preview: Indiana Dunes

All-day Saturday (Oct 15) field trip to Indiana Dunes (Succession)

Oct 17: Biodiversity Conservation
- Analyze data from Indiana Dunes
- Warren Woods report due

Oct 24: Nutrient Cycling
- Data analysis of foraging experiment

Oct 31: Global Climate Change
- QUIZ 4
- Preview on Volo Bog
- Indiana Dunes report due

All-day Saturday (Nov 5) field trip to Volo Bog (Plant Communities)

Nov 7: On the ecology of large predator (special class)

Nov 14: Evolutionary Ecology
- Foraging report due
- Analyze data from Volo Bog
- Assignments # 4: Presentations

Nov 21: Thanksgiving week (no class)

Nov 28: Human Evolutionary Ecology
- QUIZ 5
- Assignment # 4: Presentations (cont.)
- Volo Bog report due

Dec 5: No Formal (lecture) Class/Assignment catch-up
- Assignment # 4: Presentations (cont.)