BIOS 331, General Ecology Laboratory  
Spring 2015

Where?  SEL 3101

When?  Tue 9:00-11:50; Tue 13:00-15:50; Wed 14:00-16:50; Thu: 9:30-12:20.

Who?
Dr. Som B. Ale (sale1@uic.edu)  Lecture  SES 3358: Off. hrs (Open hours)
Mr. Mike Ricketts (rickett4@uic.edu)  Lab Thur AM  SES 3342: Off. hrs (Tue, 11-12PM)
Ms. Crystal Guzmán (cguzma8@uic.edu)  Lab Wed PM  SES 3458: Off. hrs (Wed, 5-6PM)
Mr. Matt McCary (mmccar26@uic.edu)  Lab Tue PM  SES 1454: Off. hrs (Mon, 2-3PM)
Ms. Meg Malone (mmalon29@uic.edu)  Lab Tue AM  SES 3340: Off. hrs (Thu, 12-1PM)

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 papers, 3) Quizzes, 4) Assignments, and 5) Participation.

Field Trips:  There will be four all-day Saturday field trips to various natural areas.  You must attend three of the four field trips (although we very much appreciate your attendance to all field trips).  Failure to attend three field trips will result in loss of all participation 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.  You are responsible for bringing along a lunch and snacks, pens, pencils, and notebook for taking field notes.

For two of the field trips you will be responsible for writing a laboratory report (max 10 pages, double space, 12 fonts, including figures but excluding reference page or pages).  You must write your own report.  The presence of plagiarized or identical prose among lab reports will be grounds for a score of 0.
You may choose which field trips to write up, but you must have attended the field trip to write a report on that trip.
Lab reports are due two weeks after each data-analysis class, which will immediately follow each field trip.

28 Feb       Warren Woods Sate Park (Forest Ecology)
14 March     Indiana Dunes National Lakeshore (Succession)
04 April     Volo Bog Sate Natural Area (Plant Communities)
11 April     Warren Woods (Spring ephemeral ecology)

Field Experiment:  During the semester you will conduct an experiment on the feeding ecology of cottontail rabbits or on seed-eating birds at the UIC Greenhouse.  You will place feeding trays with pellets or seeds for foragers for a period of at least 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 offer a foundation for the material of the lab and field trips.  There will be five quizzes spread throughout the semester that will test you 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 target species that we will assign you.  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, hypotheses formulations and data collection. Failure to participate will result in the loss of points.

**Grading**:

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<thead>
<tr>
<th>Component</th>
<th>Weight</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>2 Field trip reports</td>
<td>x 100</td>
<td>200</td>
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<tr>
<td>1 Foraging exp. paper</td>
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<td>50</td>
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<tr>
<td>4 Quizzes</td>
<td>x 25</td>
<td>100</td>
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<tr>
<td>4 Assignments</td>
<td>x 25</td>
<td>100</td>
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<tr>
<td>Participation</td>
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<td>50</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:**

Jan 12: Ecology: Interaction of organisms with their environment
- Discussion of urban ecology
- Introduction to Campus wildlife and habitat

Jan 19: Population Dynamics
- Using Excel to model population growth
  - Assignment # 1 on Population Growth

Jan 26: Foraging Ecology
- QUIZ 1
  - Discussion on Setting-up the foraging experiment (on mammal [e.g., cottontail] or bird [e.g., sparrow]). Note: The class will be divided into two groups: One group of students will work on cottontails and the other group on sparrows. Students in groups of 2 to 3 will prepare a concept paper (one pager per group) on conducting foraging experiments. So, better start choosing your partners for your foraging adventure!
  - Assignment # 2 on Wildlife Literature Review [note: each student will be assigned a species for this exercise]
  - Note: Assignment #1 due

Feb 2: Population Interactions
- More using Excel – (multispecies) population dynamics
  - Assignment # 3 on Multispecies Dynamics
    [Note: Students, in groups of 2-3 (never a group of 4!) turn in, collectively, the concept paper on the foraging exercise (one pager per group) for screening and approval]
  - Note: Assignment #2 due

Feb 9: Community Ecology – Direct and Indirect Effects
- How to write a lab report
  - Note: Assignment #3 due

Feb 16: Complex Life Histories and Life History Tradeoffs
- QUIZ 2
  - Lab work and data analysis of foraging experiment
Feb 23: Species Interactions – Forest Ecology
- Preview on Warren Woods/temperate deciduous forests

*All-day Saturday (28 Feb) field trip to Warren Woods (Forest ecology)*

March 2: Exclusively on the ecology of large, majestic predators! [Special topic]

Mar 9: Succession
- Analyze data from Warren Woods
- Preview: Indiana Dunes
- Note: Foraging Lab Report* due

*All-day Saturday (14 March) field trip to Indiana Dunes (succession)*

Mar 16: Nutrient Cycling
- **QUIZ 3**
- Analyze data from Indiana Dunes

Mar 23: **Spring Break (NO CLASS)**

Mar 30: Global Climate Change
- Preview on Volo Bog (plant communities).
- Note: Warren Woods report* due

*All-day Saturday (4 April) field trip to Volo Bog (plant communities)*

Apr 6: Biodiversity and Biodiversity Conservation
- **QUIZ 4**
- Analyze data from Volo Bog field trip
- Preview: Warren Woods – Spring Ephemerals
- Note: Indiana Dunes report due

*All-day Saturday (11 April) field trip to Warren Woods (spring ephemeral ecology)*

Apr 13: Evolutionary Ecology
- Analyze Warren Woods Spring ephemerals data
- **Assignments # 4: Presentations**

Apr 20: Human Evolutionary Ecology
- **QUIZ 5**
- **Assignment # 4: Presentations (cont.)**
- Note: Volo Bog report* due

Apr 27: No Formal (lecture) Class/Assignment catch-up
- **Assignment # 4: Presentations (cont.)**
- Note: Spring ephemerals report* due

Note: *Reports must be sent through “safe assign”.*