# BIOL 3406 – General Ecology
# Spring 2019

**Instructor:** Dr. Dan H. Foley III
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*Office hours:* Mondays - Thursdays 10 am – 11 am or by appointment

**Required Texts:** Molles, Manuel C. and Anna A. Sher, 2010. Ecology: Concepts and Applications, 8th edition. McGraw-Hill Co. NY, NY. 572 pp.

**SimBio software:** https://simutext2.com/student/register.html#/key/Urbu-EQj8-hPA7-NJYr-2cqy

**Course Objective:** There are three broad goals for this course:

- Improve ecological literacy by learning the basic facts, principles and concepts of the field of ecology.
- Improve scientific literacy by learning how ecologists construct knowledge.
- Improve mathematical and writing skills through analysis and interpretation of ecological data.

Tentative Lecture Schedule
(*note*: exact date are subject to change, be sure to keep abreast of changes).

| Date | Topic | Readings |
|---|---|---|
| | **UNIT 1—NATURAL HISTORY & EVOLUTION** | |
| January 21 | *MLK Holiday – No Classes* | |
| January 28 | Introduction & Life on Land | Chapter 1-2 |
| February 4 | Life in Water | Chapter 3 |
| February 11 | Population Genetics & Natural Selection | Chapter 4 |
| | **UNIT 2—ADAPTATIONS TO THE ENVIRONMENT** | |
| **February 18** | **Exam 1** | **Chapters 1 – 4** |
| | Temperature Relations | Chapter 5 |
| February 25 | Water Relations | Chapter 6 |
| March 4 | Energy & Nutrient Relations | Chapter 7 |
| March 11 | Social Relations | Chapter 8 |
| March 18 | *Spring Break – No Classes* | |

| | | |
|---|---|---|
| | **UNIT 3—POPULATION ECOLOGY** | |
| **March 25** | **Exam 2** | **Chapters 5 – 8** |
| | Population Distribution & Abundance | Chapter 9 |
| April 1 | Population Dynamics | Chapter 10 |
| April 8 | Population Growth | Chapter 11 |
| April 15 | Life Histories | Chapter 12 |
| | **UNIT 4—INTERACTIONS** | |
| **April 22** | **Exam 3** | **Chapters 9 - 12** |
| | Species Interactions & Competition | Chapter 13 |
| April 29 | Exploitive Interactions | Chapter 14 |
| May 6 | Mutualism | Chapter 15 |
| **May 13** | **Exam 4** | **Chapters 13- 15** |

**Grade assessment:**
There will be **4** examinations and **9** laboratory assignments during this course. Each be worth 100 points. The lecture portion of the class will represent approximately 47% of your overall grade.

Exam Dates: Exam 1 – February 18
Exam 2 – March 25
Exam 3 – April 22
Exam 4 – May 13

All exams should be considered comprehensive because information in each chapter/unit builds upon previous material. Questions will be drawn from information presented in lecture, contained in the text, and through occasional class notes, handouts or additional assigned readings. Exam questions may consist of a few definitions or vocabulary/concepts, multiple choice questions and short essay questions. No notes, books, cell phones, PDA's, or other materials will be allowed during the exam. I will provide an English dictionary for your use if necessary. If you are and ESL student, please contact me to make arrangements for use of foreign language dictionaries and translators.

**Ecology laboratory**
The laboratory period will be used to reinforce concepts learned during lecture. Moreover the laboratory will be used to strengthen you mathematical and writing skills. A variety of computer simulations will be arranged to demonstrate many ecology concepts and principles. We will conduct the lab together in the Computer Testing Laboratory

Lab Schedule

| Date | Topic | Report Due |
|---|---|---|
| January 21 | MLK Holiday – No Classes | |
| January 28 | SimBio Introduction | |
| February 4 | SimBio Lab: Nutrient Pollution | Feb 8th |
| February 11 | No Lab | |
| February 18 | SimBio Lab: The Barnacle Zone | Feb 22 |
| February 25 | SimBio Lab: Intermediate Disturbance Hypothesis | April 1 |
| March 4 | SimBio Lab: Liebig's Barrel & Limiting Nutrients | March 8 |
| March 11 | SimBio Lab: Niche Wars | March 15 |
| March 18 | *Spring Break – No Classes* | |
| March 25 | SimBio Lab: Top-Down Control | March 29 |
| April 1 | SimBio Lab: Keystone Predator | April 5 |
| April 8 | SimBio lab: Patchy Prairies | April 12 |
| April 15 | No Lab | |
| April 22 | SimBio Lab: Isle Royale | April 26 |

**9** laboratory reports will be due during the course of this class. Each laboratory will be worth 25 points, therefore a total of 225 point are possible. The laboratory reports portion of this class will represent approximately 26% of your overall grade.

Even though you may have worked as a group during laboratory exercises you are responsible for getting a copy of the relevant data and writing your own laboratory report, ***no group reports will be allowed***.

Upon completion of each lab assignment are 10 "*Graded Questions*" Each question is worth 2.5 points. Therefore, over the duration of this course you will have 90 questions worth 225 total points, representing 26% of your overall grade.

*Extra Credit*

There will be **NO** opportunities for extra credit, so don't even ask!

Therefore there are a total of 855 possible points during this course:

| | |
|---|---|
| 4 exam @ 100pts each | 400 |
| 9 lab workbooks @ 25pts each | 225 |
| 90 graded lab questions @ 2.5pts each | 225 |
| Total | 850 |

| *Total points* | *Percent* | *Letter Grade* |
|---|---|---|
| 765 – 850 | 90 – 100% | A |
| 680 – 764 | 80 – 89% | B |
| 595 – 679 | 70 – 79% | C |
| 510 – 594 | 60 – 69% | D |
| 509 or less | > 60% | F |

**Study Tips:**
Everyone has there own unique way of learning. How you study rather than how long you study will have a huge impact on your grade in this course. If you use all the resources available to you and take an active role in the learning process you will likely do much better.
Some specific tips are:

- Spend 15 – 20 minutes to skim through each reading assignment before class.
- Review the lecture notes and read the assigned reading
- Do the study questions at the end of each chapter
- Try to draw diagrams from lecture and the book from memory
- Make flash cards or important concepts and terms
- Call up a friend and try to explain what you have learned in class
- ASK QUESTIONS! You are not in this class alone, if you don't understand something, more than likely your classmates also don't understand.

**Attendance:**
This is an upper division college course. You are an adult, and you paid for this course. I will not be taking roll call. However, material for the exams will come largely from my lectures, so it is in your best interest to come and participate in class.

**Disabled Students:**
Reasonable accommodations will be provided for students with disabilities. Please meet with me the first week of class to discuss any special needs you may need.

**Academic Honesty:**
Cheating will not be tolerated. The University expects all students to engage in all academic pursuits in a manner that is above reproach and to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. "Cheating" includes, but is not limited to:

- Copying from another student's test paper, a laboratory report, other report, or computer files, data listings, and/or programs.
- Using, during a test, materials not authorized by the person giving the test.
- Collaborating, without authorization, with another person during an examination or in preparing academic work.
- Knowingly, and without authorization, using, buying, selling, stealing, transporting, soliciting, copying, or possessing, in whole or in part, the contents of an unadministered test.
- Substituting for another student; permitting any other person; or otherwise assisting any other person to substitute for oneself or for another student in the taking of an examination or test or the preparation of academic work to be submitted for academic credit.
- Bribing another person to obtain an unadministered test or information about an unadministered test.
- Purchasing, or otherwise acquiring and submitting as one's own work any research paper or other writing assignment prepared by an individual or firm. This section does not apply to the typing of the rough and/or final versions of an assignment by a professional typist.

Plagiarism will not be tolerated. "Plagiarism" means the appropriation and the unacknowledged incorporation of another's work or idea into one's own work offered for credit. This includes verbatim written answers by colleagues with whom you might discuss laboratories exercises. Plagiarism also includes copying information from internet resources. To avoid plagiarism, make sure you always use your own words to construct your written answers.