

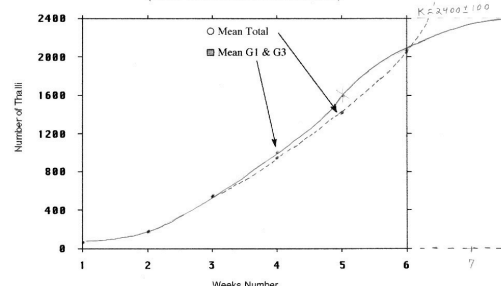
# BI 130 Introduction to Ecology

CRN: 41358

Summer 2020 Online



Fig. 4: Lemna Population Growth Experiment  
(Mean Total and Mean for G1 & G3)



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**Overview -> Goals/Outcomes -> Format -> Materials -> Assessments -> Policies ->Resources -> Schedule**

## COURSE OVERVIEW

This course is designed for non-majors with an interest in understanding the fundamentals of ecology. It is an introductory course, designed for freshmen and sophomores, and satisfies University general education breadth requirements for natural sciences. Ecology can be defined as the study of the distribution and abundance of organisms. It looks at anything that influences where and when species are present and how organisms interact with their environment: an environment which includes both physical characteristics and other organisms. By the end of the term, we expect that you will not only understand the significance of several fundamental concepts of ecology, but you will also appreciate how some aspects of these concepts relate directly to events in your own life. In particular, we hope that you will have gained skills and confidence that will enable you to analyze, criticize, and utilize biological information that you encounter in the media when it comes time for you to make personal decisions such as how many children you want to have, what kinds of foods you want to eat, how you decide to get yourself to school or work, how you will make decisions about how you vote on a wide range of environmental issues, or which groups you will choose to join or give money to.

This course is designed specifically as an intensive four-week online summer session course. A very large amount of material will be covered and **students should be prepared to spend a substantial amount of time on the class assignments during the four-week term.**

### Note on the context of this course (COVID-19)

I know that many of you may not have considered taking an ecology course online prior to this pandemic. I certainly did not ever imagine teaching ecology online prior to this pandemic! At this point most of us have some experience with 'remote' courses. I taught during spring and summer sessions already. This course however, has been an online course in the past, albeit with a different instructor. While I have taught this course before as an in-person class, I am new to the field of online education. This class will not have the same in-person interactive synchronous experience that you may have experienced in other courses over the spring or summer. **All content will be accessed at your own pace**

**on your own schedule.** We will still interact via discussion boards and Canvas announcements, but there may be a bit more of a lag in responsiveness. I will do my best to respond to Discussion posts and emails within 24 hours. As a way to build virtual community I will also assign you to small “Study Groups.”

I urge us all to remember that we did not sign up for this. Not for the sickness, not for the quarantine, not for teaching remotely, not for being forced into taking online classes. We will get through this though, by prioritizing each other as human beings, by prioritizing simple solutions that work for the most people, and by sharing resources and communicating clearly. We will remain flexible and adjust to the situation as needed. **Everyone needs support and understanding** in this unprecedented moment.

I also want you to know that **I (and my department) stand in firm solidarity with those voices that are demanding policing reform and social justice.** I realize that the current events are impacting each of you in unique ways, some of which may be difficult for others to understand. I am doing my best to encourage inclusivity and understanding around the unique issues faced by our black students and other students of color, and **I encourage all of us to extend an extra measure of kindness and care to each other** over the coming weeks and months as we seek a more unified community out of this collective tragedy.

In light of everything, I want you to know that I am open to working with you on a range of accommodations to help you feel successful in our upcoming class. Please feel free to **contact me early with any anticipated issues**, it will be easier for me to help you if it does not become a last-minute emergency.

I also want to say that some of the material that we will be covering this term can be a little heavy. **Environmental destruction, biodiversity collapse and climate change** have been out of the headlines lately as we have collectively dealt with the pandemic and pressing social issues. But that does not mean that they are not still pressing issues that our society must grapple with, or that they have gone away (unfortunately!). So again, a reminder to **be gentle with each other** as we explore these issues. I intend to facilitate a learning experience that will be of value to you in a post-pandemic world, whether you become an ecologist, or not, I truly believe that the awareness and the skills that we will develop together this term will go a long way toward **promoting a more sustainable and resilient world**, whatever the future holds.

### **COURSE GOALS**

Appreciate the interconnections between our lives and the other organisms on the planet.

Understand how knowledge about the natural world is generated.

Become discerning consumers of scientific information.

### **COURSE OUTCOMES**

#### **Students should be able to:**

Apply the scientific method when solving complex problems.

Identify important ecological processes taking place in the world around them.

Describe the underlying biology behind the various ways that organisms interact with their environment.

Articulate the causes and consequences of population growth.

Explain the mechanisms and patterns of evolutionary change.

Expound on the importance of biodiversity conservation to continuing ecosystem services.

Apply knowledge of the ways energy and matter move through systems and to evaluate how these can be disrupted by human activities.

## **COURSE FORMAT**

### **LECTURES (available on Canvas)**

To increase your understanding, you should try to do the assigned readings before engaging with the lecture materials. I will post lecture materials to Canvas on a weekly basis (you may not have access to the material for Week Two until Week Two). Lectures will include videos of my voice-over presentation slides. I will also post PDFs of the slides, as well as audio only and text transcript access options. Links to other videos and resources will be included as appropriate.

### **LABS (SimBio® simulation exercises)**

Eight SimBio® lab simulation exercises (two per week) will be used as a major learning resource for this class to supplement the readings and lectures. The simulations will cover quantitative aspects of ecosystem ecology, population growth, species interactions, community dynamic and climate change. The simulations must be purchased separately from SimBio®. Instructions for downloading and installing the modules are provided below. Please complete the simulations and submit answers to all questions (both 'graded' and 'ungraded' questions) for each simulation set. ALL questions for each simulation will be graded. Question sets for each simulation will collectively count as 48% of the final grade (6% for each simulation). The fee for these modules is \$62.00.

### **SELF-DIRECTED LEARNING**

As an online course, you will be responsible for staying motivated and keeping on schedule with all of your work. In addition to the Lectures and Labs, you will have a variety of opportunities for exploring the field of ecology. There will be daily reading quizzes to help focus your readings from the textbook and other articles. There are two homework assignments one at the beginning and one at the end of the term. You will keep a 'Nature Journal' throughout the term, you will create an iNaturalist account and participate in an online community of naturalists, and you will interact with your peers via regular Discussion Board posts. You are encouraged to get to know some of your classmates and find ways to work together on understanding the material (obviously you will complete your own assignments!).

## **COURSE MATERIALS**

**ACCESS TO CANVAS** <https://canvas.uoregon.edu/>.

We will be using Canvas daily for content delivery, communication and assessment. If you have questions or concerns about accessing and using Canvas, visit the [Canvas support page](#). Canvas and Technology Support also is available by phone or live chat: 6 a.m.–12 a.m. 541-346-4357 ; [livehelp.uoregon.edu](https://livehelp.uoregon.edu). Canvas will be organized into weekly modules.

### **TEXTBOOK (~FREE)**

OpenStax, 2017. Concepts of Biology. <https://openstax.org/details/books/concepts-biology>  
The readings include background material useful for preparing for lectures and for studying for quizzes and exams. A good strategy would be to skim over the entire chapter first, concentrating on the major concepts, then to re-read more carefully for details. This book is available as a free PDF or as a low-cost e-book. If you would prefer to have a hard copy, they are available directly from OpenStax for \$29.

### **SIMBIO®**

It is important that you review the information below before you subscribe to the SimUText for this course. To avoid possible problems, do not wait until the last minute. The fee for these modules is \$62.00.

**1. CHECK YOUR TECH!**

Visit <https://simutext.zendesk.com/hc/en-us/categories/200170134-Check-Your-Tech-> to confirm that the SimUText application will work on your computer, and/or to explore your options if there is a problem.

**3. Registration Link**

When you are ready to subscribe and download installers, follow this link to initiate the process: <https://www.simutext.com/student/register.html#/key/UuVJ-YSN5-DxLT-7SPb-Qqqp>

**4. SimUText Application Installers**

After you have completed the subscription process, if you need to download the SimUText application installers again, you will be able to access them by logging into the SimUText Student Portal (<https://www.simutext.com/student/>).

Should you encounter problems, you may need your course-specific Access Key.

It is: **UuVJ-YSN5-DxLT-7SPb-Qqqp**

Problems or questions? Visit SimUText Support (<http://simbio.com/support/simutext>).

**iNATURALIST ACCOUNT (<https://www.inaturalist.org/>)**

You will be responsible for contributing 12 observations of organisms to our course project on the iNaturalist website. You will need access to a digital camera for this (phones ok).

**A SCANNER (phone/camera okay)**

To submit images of your nature journals.

**ARTICLES**

Articles from scientific journals as well as the popular press will be assigned throughout the session. The articles will be available through the Canvas Modules.

**COURSE ASSESSMENTS****DEADLINES AND DUE DATES**

All assignments for each week will be due at 11:59 pm on the Sunday of that week. These regular deadlines are intended to help keep you on track with the material and to help space out the assessment and feedback from me. There is no penalty for early submissions, but late submissions will be penalized at the rate of 5% per day.

**MENTAL HEALTH OPT-OUT POLICY**

Due to the unprecedented nature of our times (pandemic, social unrest, economic challenges) I am offering everyone the option to not do ONE assignment, of your choosing. Couldn't do a reading quiz? No problem. Don't want to take the final exam? No worries. Thinking about the realities of climate change too overwhelming? Don't do the lab. If you need a break, take a break. **Students MUST communicate to me that you are opting out of an assignment BY THE DUE DATE, in order to not receive a zero for that assignment.** I don't need to know why, just that you are opting out. Keep in mind that any assignments that you opt out of will not count toward your final grade. You will effectively get graded on fewer things and therefore the assignments that you do complete will have more weight than what is listed in the syllabus. This is a different concept than 'dropping your lowest score'.

**SIMBIO® ‘LABS’**

You will complete eight SimBio® lab simulation exercises (two per week) Please complete the simulations and submit answers to all questions (both ‘graded’ and ‘ungraded’ questions) for each simulation set.

**EXAMS**

Both the midterm (Week 2) and the final (Week 4) exams will be standard written exams, with a range of multiple choice, matching, true/false, fill-in-the-blank, and short answer questions. They will cover subjects and vocabulary presented in lecture or lab, whether that material is in the textbook or not. Furthermore, you are expected to know what is in the assigned reading, even if we don’t cover that material in lab or lecture. Exams will be taken as ‘Quizzes’ on Canvas and will be timed. They will be made available late in the respective weeks that they are due. Please plan accordingly. You are expected to do your own work.

**DRQs**

Daily Reading Quizzes are intended to keep you up-to-date and on track with the course materials. All readings are included on the Course Schedule. These quizzes will be untimed. You are welcome to discuss your ideas with other students, but you should do your own work and not simply get answers from other students.

**iNATURALIST OBSERVATIONS**

As a way to get you out and observing nature on your own, you will be responsible for making and posting observations (safety permitting) to the iNaturalist citizen science platform. Further details will be available in the Assignments section of Canvas.

**HOMEWORK ASSIGNMENTS**

There will be two assignments that you can do at your own pace. One is to watch a film on potential environmental links to cancer and answer a series of questions (‘Living Downstream Reflection’ on the schedule), and the other will be to assess some proposed mitigation strategies in response to climate change (‘Drawdown Reflection’ on the schedule). Further details will be available in the Assignments section of Canvas.

**FIELD JOURNALS**

Each week, you will be required to spend at least one hour outside (safety permitting) making observations of ecology. You will make notes and sketches, ask questions and develop hypotheses. You will submit electronic copies of your work for weekly checks. Further details will be available in the Assignments section of Canvas.

**DISCUSSION POSTS**

You will be required to post to both a course-wide discussion board and to a smaller (randomly assigned) “study group” at four specific points in the term. You will also be required to respond to someone else’s post (for all four discussions). This will hopefully lead to the kind of intellectual interactions that would normally take place in a physical classroom.

**PRE-COURSE SURVEY**

This short survey is designed for me to get to know a little bit about any special opportunities or potential challenges or that your unique situation may present during this course.

## POST-COURSE SURVEY

This short survey is designed for me to get feedback on the course as well as a chance for you to reflect on your learning experience. This will be anonymous to encourage candid feedback.

Assessment	Number	Each Worth	Total
SimBio "Labs"	8	60	480
EXAMS	2	100	200
DRQs	10	10	100
iNaturalist	12	5	60
Homework	2	30	60
Nature Journals	4	10	40
Discussion Posts	8	5	40
Pre/Post Survey	2	10	20
<b>TOTAL</b>			<b>1000</b>

## COURSE POLICIES

### ACADEMIC INTEGRITY

All students are expected to complete assignments in a manner consistent with academic integrity. Students must produce their own work and properly acknowledge and document all sources. Students can find more complete information about the University of Oregon's Policy on Academic Dishonesty in the [student conduct code](https://dos.uoregon.edu/conduct) (located at [dos.uoregon.edu/conduct](https://dos.uoregon.edu/conduct)).

### INCLUSIVENESS

Open inquiry, freedom of expression, and respect for difference are fundamental to a comprehensive and dynamic education. We are committed to upholding these ideals by encouraging the exploration, engagement, and expression of divergent perspectives and diverse identities.

### COMMUNICATION

In general, our class will communicate through our Canvas site. Announcements and emails are archived there and automatically forwarded to your UO email, and can even reach you by text. Check and adjust your settings under Account > Notifications. I will have a running Discussion forum on our Canvas site called "Question Board" for the entire group to ask and answer questions.

I will try to make myself as available as possible for questions related to course material. However, I ask that you pose questions to fellow students first, you can do this through Canvas. If it pertains to course administration, **double-check the syllabus and Canvas**. If you email after regular business hours you may not hear back from me until the next day. ***Please include "BI 130" in the subject line of all emails.***

### PROHIBITED DISCRIMINATION AND HARASSMENT

UO is committed to providing an environment free of all forms of prohibited discrimination and harassment, including sex or gender based violence. As an instructor, one of my responsibilities is to help create a safe learning environment for my students and for the campus as a whole. Students experiencing any form of prohibited discrimination or harassment may seek further information on [safe.uoregon.edu](https://safe.uoregon.edu), [respect.uoregon.edu](https://respect.uoregon.edu), [titleix.uoregon.edu](https://titleix.uoregon.edu), or [aaeo.uoregon.edu](https://aaeo.uoregon.edu) or contact the Title IX office (541-346-8136), Office of Civil Rights Compliance office (541-346-3123), or Dean of Students offices (541-346-3216), or call the 24-7 hotline 541-346-SAFE for help.

## CAMPUS RESOURCES

### **ACCESSIBLE EDUCATION CENTER (AEC)**

The University of Oregon is working to create inclusive learning environments. If there are aspects of the instruction or design of this course that result in barriers to your participation, please notify us as soon as possible. You are also encouraged to contact the [Accessible Education Center](#). If you are not a student with a documented disability, but you would like for us to know about class issues that will impact your ability to learn, contact us so that we can strategize how you can get the most out of this course.

In order to promote social distancing to limit the spread of COVID-19, the Accessible Education Center is currently operating remotely. They are available Monday-Friday 8am-5pm by calling (541) 346-1155 or emailing [uoaec@uoregon.edu](mailto:uoaec@uoregon.edu). Appointments can be made by calling, emailing, or completing our [online scheduling form](#).

Appointments are available by **phone or by computer/smartphone using [Microsoft Teams](#). Teams is free to the UO community**. For more information, please visit the [UO Teams Download Instructions](#). **Support will also be available through email and a text-based chat window.**

### **CENTER FOR MULTICULTURAL ACADEMIC EXCELLENCE (CMAE)**

Promoting student retention and persistence for historically underrepresented and underserved populations. Programs and services that support retention, academic excellence, and success at the UO and beyond. Committed to all students, including undocumented and tuition equity students. [cmae@uoregon.edu](mailto:cmae@uoregon.edu).

All CMAE advising services will be offered remotely. Please connect with us, we are still here providing you support. **To schedule an appointment**, log into Navigate with your Duck ID: <http://uo.campus.eab.com> or call the front desk at 541-346-3479. You can also access the CMAE Advising Helpdesk live Chat Monday-Friday from 10am- 12pm & 1pm-4pm.

### **COUNSELING CENTER**

The Counseling Center provides students with confidential consultation 24 hours a day, 7 days a week. Their number is 346-3227. Students often believe that their issues are not “severe” enough for them to call, but at the Counseling Center, no problem is too small. <https://counseling.uoregon.edu/>.

If you’re unable or don’t wish to come to the Counseling Center in person, help is still available. Our after-hours support/crisis line is open to all students, wherever you are located. Call 541-346-3227 when the Counseling Center is closed to speak to a therapist. Counseling Center staff can help you figure out how to find mental health services in your area. Call 541-346-3227 during business hours to schedule a consultation with a case manager. We are working to provide telemental health (video) sessions to students physically located in Oregon and California soon. Updates will be posted to [this website](#) when available, or call for more information.

## SCHEDULE

<b>Week</b>	<b>Format</b>	<b>Topic</b>	<b>Reading</b>	<b>Assignments</b>
1	Lecture	Introduction to Ecology	What Does Ecology Have to do with Me?; OpenStax 1.1 & 1.2	DRQ 1
1	Lecture	Ecosystems	OpenStax 20.1 & 20.2	DRQ 2
1	Lecture	Species Distributions	OpenStax 20.3 & 20.4	DRQ 3
1	LAB	Understanding Experimental Design		SimBio
1	LAB	Ecosystem Ecology		SimBio;

<b>8/23</b>				<b>Pre-course survey; Living Downstream Reflection; Discussion Post 1; Nature Journal 1</b>
2	Lecture	Population Growth	OpenStax 19.1-19.3	DRQ 4
2	Lecture	Population Regulation	OpenStax 19.1-19.3	DRQ 5
2	Exam	<b>MIDTERM EXAM</b>		Due 8/30
2	LAB	Physiological Ecology		SimBio
2	LAB	Population Growth		SimBio
<b>8/30</b>				<b>Discussion Post 2; Nature Journal 2</b>
3	Lecture	Species Interactions I	OpenStax 19.4	DRQ 6
3	Lecture	Species Interactions II	McLaren & Peterson 1994	DRQ 7
3	Lecture	Community Structure	OpenStax 19.4	DRQ 8
3	LAB	Isle Royale		SimBio
3	LAB	Epidemiology Explored		SimBio
<b>9/6</b>				<b>Discussion Post 3; Nature Journal 3; iNaturalist Observations</b>
4	Lecture	Evolution	OpenStax 11.1-11.5, Appendix B [OpenStax 12.2; Rennie 2002] <sup>+</sup>	DRQ 9
4	Lecture	Biodiversity & Conservation	OpenStax 12.1, 21.1 - 21.3; Worldwatch Institute 2002	DRQ 10
4	Exam	<b>FINAL EXAM</b>		
4	LAB	Community Dynamics		SimBio
4	LAB	Climate Change		SimBio
<b>9/13</b>				<b>Drawdown Reflection; Discussion Post 4; Nature Journal 4; Post-Course survey</b>

- **OpenStax** = Concepts of Biology 2017; all other readings are posted to Canvas.
- [<sup>+</sup>] = optional reading



*"Any good poet, in our age at least, must begin with the scientific view of the world; and any scientist worth listening to must be something of a poet." - Edward Abbey*