

Syllabus* for Principles of Ecology (BIOL 203)

Fall 2021

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version: August 30, 2021

* Assumes that we're mask-to-mask (as opposed to face-to-face). In the event of a change the syllabus will be updated to reflect the new learning environment.

Course item	Details
Meetings	Tues/Thur 10:00 - 11:15 am, Schrader 1
Contact me	ISC 360, 245.5448, hartvig@geneseo.edu
Office hrs†	Tues. & Th 8:00 - 9:00am (Zoom with your Geneseo account; enter waiting room) Tues. 11:30 - 1:30 (ISC 343) W 2:00 - 4:00 (ISC 343)
Textbook (free)	The Science of Ecology (SoE). PDF on Canvas
Optional textbook	Hartvigsen (2021) (in case you want more details for using R)
Laptop computer (Mac, Windows, or Linux)	A few times you will be asked to bring this in
Software (free)	R (version 4.1 or later), RStudio (version 1.4.1 or later), Excel or Office Calc (Linux), and a PDF reader.
Calculator	Calculator that does $\ln()$ and e^x . Can be \leq \$10.
Mask, worn properly	Please comply - we all need to feel safe in the classroom.
Refreshments	Unfortunately, no refreshments can be consumed in class since masks are mandatory
Cloud storage (free)	You are expected to keep all files from this class in a folder that automatically syncs in the cloud. This can be through "Google Backup and Sync" (recommended), Dropbox, OneDrive, or iCloud. This protects you from have to say "I lost my work because my computer died."

† Note that T & Th morning office hours are on Zoom. The others will be in my lab which has excellent ventilation (negative pressure).

definition: Ecology is the scientific study of the interactions between organisms and their biotic and abiotic environment.

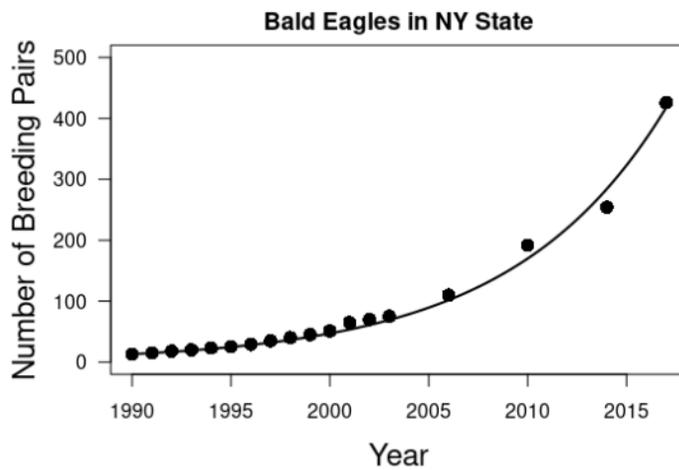
1 Overview

I will work to provide you an introduction to this broad area of science. If you read any news source you're likely to quickly find an ecological challenge facing humanity, such as global climate change, the risk of an interesting species in decline, human conflict over limited resources, or the emergence and spread of a new disease. All of these are problems of ecology. My goal is to help you enhance your interest and understanding in ecology and gain the ability to better assess scientific information.

As a heads up to you I received this on a recent SOFI: “Hartvigsen just shows data and math and nothing else.” Well, that’s not true but it might seem that way. Below it’s good to know the image is of the bald eagle (*Haliaeetus leucocephalus*). Knowing this is great but you probably covered stuff like that when you were younger. Now it’s time to ask, and answer, more complicated questions: how is the population changing (actual data in graph on right)? Is it changing *significantly* (more than just chance)? If it’s changing, what is the *annual rate of change*? Can we predict what the population will be in the future? These questions are answered with data, math, statistics, and an understanding of the principles of ecology. The answer is that the number of breeding pairs is increasing exponentially in NY State. And, instead of asking you to believe me, I support this conclusion with a beautiful graph and some objective math and statistics ($F = 3656$; $df = 1, 16$; $p < 0.001$; $R^2 = 0.9954$; $N_t = 13 * e^{(0.1285 \cdot (yr-1990))}$). That’s about 13.7% year⁻¹ since 1990! Note that $e^{0.1285} = 1.137$.



Eric Frommer, Creative Commons



Ecologists might be accused of missing the beauty of nature, such as the bald eagle, by reducing it to some numbers. I hope you see that, as an ecologist, you are able to enjoy the beauty of nature just as well as any poet or artist. However, knowing more about it, such as the evolutionary history, the role the eagle plays in food webs, and how the number of breeding pairs change over time, greatly extends one’s appreciation of nature, and does so far beyond what any poet or artist can .

2 Expected Learning Outcomes

If you work effectively and succeed in this class you can expect to be able to:

1. **explain** patterns in nature using a broad array of ecological principles, including how organisms deal with the physical environment, how species evolve over time, particularly via the process of natural selection, the dynamics of populations over time, how species interact with each other, and problems in conserving species and habitats. These patterns may be seen as you travel around, that you read about in scientific literature, and/or are reported in the news;
2. **explain how science is conducted** in order to understand and explore ecological phenomena;

3. **use quantitative methods**, including the **R** statistical and programming language and mathematics, to understand the empirical and theoretical underpinnings of ecological phenomena;
4. **correctly interpret** scientific results, usually presented as graphs, as well as ecologically-related information you encounter on a day-to-day basis (e.g., stuff you see as you walk, drive, or hear about in the news);
5. **continue to develop** your understanding of your role in affecting Earth through your use of ecological systems and its resources;
6. **correctly explain** the difference between evidence-based information from evidence-free conspiracy theories, beliefs, and opinions;
7. **actively engage** with fellow students in discussions involving ecological principles.

3 Resources

1. **Dr. H.** Please consider me a member of your academic success team. It's not you against me. It's you and me working to understand the principles of ecology. I do write the assessments so you should ask me how I do it (and read about this below in section 6 on page 8). Join me for office hours.
2. **This syllabus.** It's long and detailed. It has dates, expectations, helpful advice, and guidance for assignments. It is meant to help *you* succeed.
3. **Lectures.** These are generally important to catch. I try to present information that will be useful to you at some point. Not everything will be on the exam – there's too much. I show lots of graphs of data. If you miss lecture you can view the slides that are posted on the course's website in pdf files within 24 hrs (if not, send me an email!). The slides are **NOT self-explanatory**. They will only make sense if you attended the lecture. You are responsible for this material, the classroom discussions that occurred during lectures, and the related material in your textbook. I encourage you to save trees by simply viewing these electronically at your leisure. Here's a good comment from a recent SOFI regarding lecture notes:

“PowerPoint lecture notes can be confusing to look back on when studying, especially if class was missed that day.”

4. **Textbook.** The latest draft is available on Canvas. There may be updates available so check every so often or ask me if an update has been uploaded to Canvas.
5. **Office hours.** These are times set up so I can help you. In the week before an assignment is due or there's a test I'm likely to have many visitors! Plan ahead and come when my office hours are lonely. If the office hours are busy I might get you started on the path toward a solution (e.g., “Please draw that on the board and get started while I answer this other question.”). I'm hoping you can figure it out with guidance (this will benefit you). I sincerely want you to learn the material AND *learn how to learn the material*. I'm not trying to be evil, although you might recognize that I'm also a dad. Questions may be answered directly but you may get lucky and get to hear me ask “What do you think?” If you get it right I'm likely to follow up with “Why did you say that?” Imagine if you can explain why you got the right answer?
6. **Software.** Here are the software programs you'll need to succeed in this class. All are free. If you already have **R** and/or **RStudio** then install the latest versions of these – they change

monthly.

- (a) Excel (or a look-alike). Free for matriculated students.
 - (b) **R**. Free. Go to <http://cran.case.edu/> and get the version for your computer.
 - (c) RStudio. Free front-end for **R**. Install after you install **R**. Go to <https://rstudio.com/products/rstudio/download/> and choose the version for your operating system under the “Installers for Supported Platforms” heading. If you have it you should update it.
7. **Fellow students**. During class you’ll be given opportunities to work with neighbors to discuss questions posed during class. Hopefully you’ll make some connections that might lead to study partners. You don’t have to interact with anyone if you don’t want to - this is up to you.
 8. **Email**. You are responsible for information provided to you via your Geneseo email account from me. This is the most effective way to reach me outside of office hours. Note that you **must use** only your @geneseo.edu account when sending me an email. Otherwise your message may be marked as spam and never seen again.
 9. **Past assessments**. Every assessment I’ve given in this class since 1998 is available in my Geneseo “Outbox.” For help on finding boxes see <https://wiki.geneseo.edu/display/cit/Inboxes+and+Outboxes>.
 10. **“What’s new?”** Each lecture begins with this question. Please check out the news and share. Here are several great sources:
 - (a) <http://www.sciencedaily.com/>,
 - (b) <http://www.sciencemag.org/news>,
 - (c) <http://www.nature.com/news/>,
 - (d) <https://www.nationalgeographic.com/latest-stories/>.
 - (e) <https://www.livescience.com/>.
 11. **Additional SUNY Geneseo resources**. See <https://wiki.geneseo.edu/display/PROVOST/Student+Resources>.

4 Grading stuff

The following table shows the breakdown for points. The number of total points available is flexible and depends on how you decide to weight the final assessment (see bullet item # 6 on page 9).

Item	Number	Points for each	Total pts
Class/Homework problems	$N \approx 10$	5	≈ 50
Ecology modules	3	20	60
Assessment I	1	25	25
Assessment II	1	50	50
Assessment III	1	50 - 100 (default = 75)	50 - 100
Total (depends)	~ 16		$235 + x \in \{0, 50\}$

“Class/Homework problems” will be short assignments with the goal of rewarding you for keeping up on material. Problems may be assigned in class for further exploration or selected from chapter-ending problems. They must be handed in, printed on paper, by the **beginning of the next meeting** for credit (unless otherwise instructed).

“Ecology modules” are worth more and so are discussed in more detail in section 5. They must be handed in, printed on paper, by the **beginning of the next meeting** for credit (unless otherwise instructed).

See section 6 for more on the large assessments.

What’s my grade in this class?

This is a quantitative class in which I hand everything back so you have all the information I have to calculate your grade. Assessments usually come back during the next class meeting. I go over these in detail at that point. Ecology modules take about a week to return. If you miss the classes when things are handed back I may still have them in my backpack - feel free to ask! However, you may have to come to office hours to pick these up. To calculate your grade you just need to add the points you’ve earned by the number of points possible.

I will use the following relationships to translate the proportion of earned points into letter grades:

Score	Letter Grade	Score
0.933	\leq A	
0.900	\leq A-	< 0.933
0.867	\leq B+	< 0.900
0.833	\leq B	< 0.867
0.800	\leq B-	< 0.833
etc.		

Note that I will round your proportion of points earned **UP** to three decimal places using Excel’s function `CEILING(number, 0.001)`. The college rounds grades **DOWN** (truncates) when calculating your GPA (see page 43, 2017-2018 College Bulletin). There is an example of a student earning

a GPA of 2.728571, which then becomes 2.72 which they proudly tell us has been truncated! They probably round down your GPA for your cumulative GPA, as well! To help counter this I will take a grade of, say, 0.832105, which would be a B-, and round it up to 0.833, making it a B.

5 Ecology Modules

Galileo is attributed as saying that Nature is written in the language of mathematics. We are studying nature and it is best understood using quantitative approaches. Fortunately, you've been studying mathematics for years and this will help you understand complex biological systems. In particular, the "Ecology Modules" are designed to help you explore Nature more deeply.

If you find computer programming, math, and/or statistics intimidating and/or challenging recognize this about yourself and plan accordingly. Solving problems using software like **R** is a fundamental skill for the study of biology. It's a similar skill to computer gaming, using a cell phone, figuring out Facebook, playing guitar, juggling, or riding a horse (or unicycle). You can do all of these if you work at them.

General instructions for completing Ecology Modules

1. **Delivery of the completed module.** For credit you need to hand in a paper version. These can be handed in **anytime before one minute into the beginning of class on the due date**. The usual practice is to bring the assignment to class on the day it is due and place on the table before lecture begins. Handing it in after this date/time is considered late (e.g., printing it during class and coming in late). See rule #16 below.
2. Ways to lose points before I grade it:
 - (a) -5 pts for each 24 hr period handed in late.
 - (b) -5 pts for emailing assignment on time and making me print it for you.
 - (c) -1 pt for no staple.
 - (d) -1 pt for demanding that a tree be used for a title page.
 - (e) -5 pts for sliding under my door after 9:30am on the day it is due. Note that if I return from class and find it under my door your assignment is considered late.
 - (f) -20 pts for sticking it in my biology office mailbox
3. Each Module will have its own set of instructions, provided either through email or on Canvas. Read these, complete the module, then re-read the instructions before handing it in or risk losing points.
4. Your write up should be as short as possible while completing all required tasks.
5. Your primary goal is to tell the reader what you found.
6. Use only complete sentences, except for any computer code!
7. Include your name, date, and assignment name at the top of the front page.
8. Do NOT use a title page.
9. Use single-spacing, double-sided printing for your write up.
10. Your report should be structured in numerical order with each question answered and any graphs and code included in each section before starting the next question. (-2 pts for answers/code/graphs located anywhere else).
11. Include only **R** code you wrote or modified that creates your answer (assume I know code from the Module description). Feel free to refer to code that you have provided in a previous

answer to avoid including the exact same code twice. Do not include screen shots of your code!

12. Your answers and included graphs will demonstrate that your code worked fine. I will read the code to verify consistency with the results you provide.
13. The points for each question are found in the description. This represents the rubric that will be used to evaluate your work.
14. Plan ahead. You are not likely to get an answer to an email question the night before a module is due. This is true for assessments, too!
15. **ALL WORK MUST BE YOUR OWN.** Do not plagiarize from others, including classmates, previous classmates, and external sources. All code you provide that I didn't write must be your own. That means, if asked, you could tell me what it all does. It's okay to use external literature sources but cite them completely. Do not try to find code online that you think solves your problem but you have no idea what it does. The assignments are designed so that you can complete them yourself! Please see the College's [policy on academic dishonesty](#).
16. **Finally, know yourself and accept yourself!** You probably know if it's hard for you to use **R**, hard for you to write a paper, whether you tend to procrastinate (e.g., you've handed assignments in late in other classes), you get sick a lot in the middle of the semester when assignments are due, and/or family challenges seem to happen often to you. If this is you then get these assignments done early or you may get frustrated! Be sure to use your resources (see above). Note that email questions after 5pm might not be answered that day (especially the night before an assignment is due). So, plan ahead.

5.1 Getting help on Ecology Modules

I am happy to help you to be able to solve problems. Here are two ways to get help:

1. Come to office hours ready to explain your challenge. Have the **R** script file open on your computer with the cursor on where you're stuck. You'll be asked: what have you tried so far?
2. You can send me your **R** script file as an attachment (not copied into the email). Don't send a screen shot. Tell me the line number in the script file that's giving you trouble. If the code reads a data file I'll need the data file, too. I will run your code and see the same error message and will likely be able to tell you how to fix the problem.

Note that I am unlikely to answer questions during darkness or the night before the module is due. Plan ahead!

5.2 You are expected to know your computer

To understand and complete work in the field of ecology you must be able to complete basic operations on *your* computer. This includes the following skills:

1. create a folder for this class, such as "PoE Fall 2021";
2. download a file from the internet and place it in your PoE folder;
3. install, run, and use **Excel**, **R**, and **RStudio**;
4. search for help on the internet (e.g., search "make folder on mac" or "read data from file using **R**");
5. use your textbook's appendices.

6 Assessments (a.k.a., exams)

The content covered by the major assessments is cumulative. Any material covered up to the assessment can be included on the assessment. Note that the assessments increase in their weight toward your final grade. This is because, as with all classes, figuring out how someone is assessing your knowledge can be challenging. Be sure to read about the availability of old assessments in section 8 below. Here are some thoughts on these for this class.

1. **How I write assessments.** When I write these I do it from scratch (I don't intentionally reuse questions). Some questions often will be similar because of this. I write the assessments using the readings, post-lecture notes (on Canvas in Files), and the ecology modules. Stuff I discuss (e.g., "what's new?" stuff) is also material you can be rewarded for knowing. I also write questions based on meetings where no notes were provided (e.g., the trip to the Arboretum and when only the board is used).
2. **Studying for an assessment.** The best way to study for an assessment is to use your insight from lectures and the book to build potential assessment questions and then really answer them. Ask yourself after lecture or after reading a chapter "What could/would Hartvigsen ask on this?" Also, perhaps in lecture you heard me say something like "I really like this experiment." That might be important! Make the assessment yourself, preferably with a study buddy or group and ask each other your questions (and answer their questions).
3. **Wasting time studying for an assessment.** Lots of ways to accomplish this:
 - (a) A fairly useless gesture toward studying is to zoom through the post-lecture notes and, on each, tell yourself "yeah, I get that." Instead, look at a slide, and consider what I might ask (e.g., what would data look like if they were consistent with a certain principle of ecology?).
 - (b) Another sure waste of time is to look at old assessment keys and repeat to yourself "yeah, I get that." Consistently, students tell me the old exams were a lot easier (because they looked at the key and it made sense).

Here's another point that's hard to hear: if you want to meet your own expectations, **do not lie to yourself**. The idea that you study better with music worked in high school because you didn't really need to study at all. Music without words, or with boring words, *may* help workers on assembly lines. You, however, need to learn and multitasking *while* studying reduces your ability to learn. Also, it's best to accept the evidence that checking your phone while studying will prevent your brain from focusing. Listening to music and having your phone nearby often does help you sit in a chair for long stretches of time but that has nothing to do with learning; the point of studying. Instead, just do this: **Study like you're taking an exam**. Study for no more than an hour and then take a social/mental break doing something other than studying. And, of course, get enough sleep because *research in biology* tells us you lock in knowledge and understanding during sleep.

4. **What to bring.**
 - (a) Probably bring a pencil so you can erase. Crossing out gets messy. You have just enough room to answer questions once.

- (b) Bring your calculator with fresh batteries. You may borrow these from people before assessments but **NOT** during assessments.
5. **No bathroom breaks?** During all assessments there are no rest breaks (you won't have time). Prepare yourself to be comfortable. This has evolved out of prior experiences where folks have created unfair advantages for themselves.
 6. **Weighting the final assessment.** The default value of the final assessment is 150 points. However, you decide the weight of the assessment (number of points) after you complete it but before you hand it in. That weight ranges from 100 – 200 points. I will provide you an **R** script file that helps you run scenarios for what happens to your grade if you choose different weightings.
 7. **Missing an assessment (exam).** Missing an assessment is a big deal. I must have **email notification** at least 24 hours before the assessment and receive from you a *valid, written* excuse (e.g., notification from the health center).

But what if you can't make it because you're barfing that morning? Go to the health center instead. Bring the admittance slip to me afterwards and we'll work it out. Emails must be sent from your **Geneseo email account**. It is your responsibility to chat with me and make sure I have the official excuse. Appropriate excuses include illness with evidence of your visit to an appropriate professional or the evidence of the death of a "close" relative, which is defined as satisfying $r \geq 0.25$ (note that $r = 0.5^n$; see equation 9.4, in chapter 9 in your textbook) and n is the number of degrees of separation the relative is away from you. Real, unacceptable excuses include:

- (a) "Sorry I missed it. I wasn't feeling well."
 - (b) "Sorry I missed it. I stayed up all night studying for your exam but then fell to sleep at 8:00am. Can I make it up?"
 - (c) "Sorry I missed it. I was hungry and needed to get food." (Yes, this was tried!)
8. **Past assessments** are provided in my OutBox in the PoE folder (see [CIT's wiki](#) to learn how to find Outboxes). I've tried to include both the test and the key. If it's not there it doesn't exist. Please note that old assessments may not reflect what your assessment will look like.
 9. **Emailing questions.** Feel free to send me an email. Only send this from your Geneseo account (else it might be lost in my spam folder and you'll think I don't respond to emails). You can send me a screen captured image of a lecture slide or past test question and ask something **specific** about it. The clearer the question the more helpful I can be. A question like "can you explain what the slide says?" is too vague and can't be answered by email. Please bring these types of questions to office hours. I won't be able to respond to questions the evening before or morning of an assessment. Please plan ahead!

7 The Natural Selection Question

This is a challenge that will be found on the first assessment and will reappear on each assessment thereafter until everyone has gotten it completely right. Natural selection is a bit tricky to understand and an outcome of this class is that you understand it well enough to explain it to someone who might not "believe" it and asks you to convince them during a short ride on an elevator.

Natural selection can be summarized into “**four easily observed characteristics**,” often called “Darwin’s Postulates.” For this question I may ask you to:

- identify and explain them;
- apply them to a particular system (e.g., a trait such as finch beak depth); and/or
- provide data that would be consistent (or inconsistent) with any or all of these characteristics.

The postulates are described in detail in chapter 2 of your textbook.

Common mistakes for this question include, but are not limited to, the following:

- Not answering the question. If you are asked to apply these characteristics to a particular trait then providing the characteristics in vague terms (e.g., “traits are heritable”) likely will result in lost points.
- Forgetting one or more of the characteristics. Often done by duplicating one of the characteristics.
- Stating that “species (or populations) have high reproductive potential” (only individuals reproduce).
- Stating that “species have differential reproduction” (individuals reproduce, species evolve).
- Stating that “traits are inheritable” (they’re heritable). “Inheritance” is something you get if you’ve been kind to your relatives.
- Stating that “all individuals reproduce a lot” is inaccurate. You would instead want to discuss how individuals have a high average reproductive *potential*.
- Stating that “a trait is variable among a population” (it’s “within” a population; “between” is used if there are two groupings, and “among” is used for more than two groupings).
- Stating that “some individuals will survive better than others.” Survival sure is important but it must result in reproduction. One individual could survive indefinitely but not reproduce. Another may kick off quite early but leave many offspring. This is why the phrase “survival of the fittest” is not “natural selection.”
- Using the cliché “survival of the fittest” (see previous).
- Mixing up natural, artificial, and/or sexual selection.
- Answering this using “natural selection.”
- Providing other stuff might be amusing but not point worthy. One of my favorites was: “You sure got me, Dr. H.! How was I supposed to know these?”

Note that if this question appears on the second or third assessment the expectations for the preciseness of your answer increases.

8 Schedule

The following is the plan. Historically, I have fallen behind by a few days by the end of the class. I will plan to remain on schedule, however, this semester!

Data	Day	Topic	Complete and/or bring
8/31/2021	Tue	Introduction to Ecology + Evolution	Read Preface + Chapt 1

9/2/2021	Thu	Adaptations in the Field. Meet at gazebo in the Roemer Arboretum. Check weather & wear appropriate clothes!	Review the Arbo's mission at on its website.
9/7/2021	Tue	Evolutionary ecology and three models of evolution	Read Chapt. 2. Bring laptop with R and RStudio working
9/9/2021	Thu	The Physical Environment (part 1)	Read Chapt. 3.
9/14/2021	Tue	The Physical Env (part 2), Fire, and Intro to EM1	Bring laptop, have worked through App. A + B in text-book
9/16/2021	Thu	Orgs in the Physical Env	Read Chapt. 4.
9/21/2021	Tue	Intro to Population Ecology	Read Chapt. 5.
9/23/2021	Thu	Unregulated + Regulated Growth	Read Chapt. 6 + 7. EM1 due
9/28/2021	Tue	Regulated Growth	Read Chapt. 8.
9/30/2021	Thu	Assessment #1	
10/5/2021	Tue	Intro to EM2: More Pop Growth + Behavioral Ecology	Read Chapt. 9 and bring laptop
10/7/2021	Thu	Behavioral Ecology II + Game Theory	
10/12/2021	Tue	Fall Break	
10/14/2021	Thu	Metapopulations	Read Chapt. 10.
10/19/2021	Tue	Competition 1	Read Chapt. 11.
10/21/2021	Thu	Competition 2	EM2 due
10/26/2021	Tue	Herbivory	Read Chapt. 12.
10/28/2021	Thu	Predation	Read Chapt. 13.
11/2/2021	Tue	Parasites, Parasitoids, + Pathogens	Read Chapt. 14.
11/4/2021	Thu	Assessment #2	
11/9/2021	Tue	Pathogens + Mutualism, Commensalism, + Amensalism	Read Chapt. 15.
11/11/2021	Thu	Intro to EM3: Epidemiology	
11/16/2021	Tue	Trophic interaction (food webs)	Read Chapt. 16.
11/18/2021	Thu	Spatial and Temporal Community Dynamics	Read Chapt. 17.
11/23/2021	Tue	Ecosystem Ecology	Read Chapt. 18.
11/25/2021	Thu	Thanksgiving	
11/30/2021	Tue	Biodiversity	Read Chapt. 19.
12/2/2021	Thu	Biogeography	Read Chapt. 20 and EM3 due
12/7/2021	Tue	Humans and the environment	Read Chapt. 21.
12/9/2021	Thu	Conservation biology	Read Chapt. 22.
12/16/2021	Thu	Assessment #3 8:00-10:30am	

9 Religious observances

It is my responsibility, as outlined in the College's Undergraduate Bulletin, to accommodate religious observances. No assessments have been scheduled to occur on notable observance days. However, as stated in the 2017-2018 Bulletin, I am "to comply in good faith with the provisions of..." section 224-a of the Education Law of New York State. I am happy to meet your needs if you inform me of any such absence at least one week prior to the conflict. Without you providing me this information I will not be able to help you meet your learning expectations for this class.

10 Electronic distraction devices, drugs, and other disabilities



<https://www.quora.com/What-is-the-worst-thing-about-the-city-of-Tokyo-Japan>

In my classes we both agree not to text, chat, "do" Facebook or Instagram, recreationally watch YouTube videos, message, or do similar electronic gaming or distracting activities during class (laptops can be used for taking notes but please don't violate the expectations above). Why? These activities are distracting to those around you, including me. I think everyone deserves respect in the classroom. For instance, you might want to ask a question during class so I should be paying attention to you so I can respond.

We also agree not to consume alcohol or other recreational drugs during class or come to class impaired by such activities. If either of us finds scheduling these activities (e.g., texting or doing drugs) around class time difficult then we should seek professional help (e.g., through the [Lauderdale Center for Student Health & Counseling](#)).

Additionally, those of us who teach at SUNY Geneseo will do our best to make reasonable accommodations for students with documented physical, emotional, or cognitive disabilities. In addition, we will do our best to accommodate challenges brought about through pregnancy, parenting, or care giving. Students should contact the [Office of Accessibility Services](#) (585-245-5112) and me to discuss needed accommodations as early as possible in the semester. Note that I happily will help you to take assessments in the Test Center (<https://www.geneseo.edu/is/testcenter/main>) during the regularly scheduled assessment times.

11 Minimum Competence and Biology Proficiency

To graduate with a Biology major, students must attain a grade of C- or better in all required Biology courses (excluding Biology electives). A grade of C- must be achieved in any course before it may be used as a prerequisite for another course. A student may only repeat a required Biology course or related requirement once for major credit and the course must be taken at the next offering of the class (provided there are seats available). If a student does not earn at least a C- on the second taking of the class, she/he will not be able to complete the Biology major. Additionally, to fulfill the “proficiency requirement” the average grade attained in a student’s first two lecture classes must be \geq C+ (2.3) in order to complete the biology major (see https://www.geneseo.edu/biology/important_changes_to_note).

References

Hartvigsen, G. 2021. A primer in biological data analysis and visualization using R. Columbia University Press.