

## BIOL 200-01 Lecture Syllabus, Fall 2023

### Lecture Instructor

Angie Roles (she/her)

Science Center A134

Cell: 443-695-1680

Email: aroles@oberlin.edu

Drop-in Student Hours:

MWF 10–11am, or email for appointment

### Student Hours

Student Hours are times that I have set aside specifically to meet with students. I will be in my office and available – you can just stop by and give the door a knock! You can drop in by yourself or bring friends; you may have specific questions or just want to say hi – any reason is good enough. If you aren't available during these intervals, I'm happy to find another time that works. For help using Google Calendar to schedule a meeting with Angie: [www2.oberlin.edu/faculty/aroles/studenthourssignup.html](http://www2.oberlin.edu/faculty/aroles/studenthourssignup.html)

### Class Meetings

Lecture: MWF 9-9:50am in Sci Ctr A254

Lab section details:

Enrollment in both lecture and laboratory is required of all students. All lab sections meet 1:30-4:20pm in Sci Ctr K119. Consult the Lab Syllabus for more information.

Section	Day	Instructor
03	Tue	Angie Roles
04	Wed	Evan Hilpman
05	Thu	Jason Gleditsch

### Course Description

This course provides biology majors and others with an integrated introduction to key principles of ecology and evolution, including selection, drift, sources of variation, and patterns of diversity, as well as factors and processes governing biotic and abiotic interactions that influence the distribution and abundance of organisms. Labs feature indoor and field exercises and discussions designed to develop critical thinking and quantitative skills in data collection, analysis, and interpretation. Field trips required. Prerequisites: BIOL 100. Attributes: 4NS, QFR.

### Course Objectives

Students completing this course should be able to:

- Understand and apply fundamental evolutionary and ecological concepts.
- Apply all parts of the scientific method to ecological and evolutionary questions.
- Appreciate the nature of variation and the importance of random events in natural systems, across levels of organization from the molecule to the ecosystem.

- Be aware of the broad diversity of life, past and present, and the major patterns of life through time.
- Practice interpreting graphical presentations and statistical analyses of data representing the relationship between two (or more) variables.
- Learn some of the basic techniques of field biology.
- Recognize the relationship of biology to other sciences, disciplines, and society.
- Build 'soft' skills valuable for life-after-college including team work, time management, reflection, revision, self-assessment, and critical thinking.

## Statement on Accessibility and Inclusion

Central to this course is an understanding and appreciation of diversity across the tree of life. In line with that value, we aim to make this course accessible and inclusive of *all* students. Each individual brings with them a unique set of experiences which inform their perspective when interacting with others and learning new information. All are welcome in this class and expected to put in the work to learn more than you knew coming in. You have the right to ask for assistance, access, or additional resources to meet your learning needs. If you find yourself unable to fully access the course in any way, you are welcome to contact us to discuss your needs. During the first week of classes, we will discuss community norms to guide us in our interactions.

**In case of emergency...** Should circumstances arise that prevent you from fulfilling your responsibilities, such as completing exams on time, you should contact Angie ASAP (email is fine). If you anticipate issues or conflicts arising, please contact Angie in advance so that we may make arrangements.

## Course Structure

This course adopts a flipped classroom style for all lecture meetings and uses contract grading for assessment. Each week, video recordings are provided, to be studied outside of class meeting times (replacing assigned readings; occasionally readings may also be assigned). During the MWF lecture meetings, we will work on case studies or problem sets relating to that week's material. Some days may be devoted to student-chosen topics. Weekly lab sessions will focus with greater depth on selected lecture topics and associated skills.

## Reference Material / Textbooks

- There are no required textbooks for this course. You are welcome to use your Biology 100 textbook as a reference; the current Biology 100 text is available on reserve in the Science Library. Suggested readings will be available throughout the course via provided PDFs or web links.
- All materials will be shared via shared Google Drive folders. Lecture material is in the [biol200-Roles-share](#) folder. Lab materials are in the [Lab Handouts and Files - biol200](#) folder.
- The open-source text [Biology 2e](#) is recommended for many topics when you may wish

more information or a different presentation than given in the content videos.

## Honor Code

You are expected to adhere to and sign the Honor Code:

1. On exams and quizzes, affirming the work is your own, without giving or receiving aid;
2. On problem sets, affirming that the work is your own and, when appropriate, that you have cited references accurately;
3. On pre-lab and post-lab assignments, affirming that you have worked only with classmates (when permitted) and have used only course material provided for the current academic term;
4. For group work, all group members contributed to all parts of the assignment in a meaningful way.

Your instructors are required to report any suspected violations of the Honor Code to the Honor Committee. Independent of any deliberations of the Honor Committee, in this course suspected violations of the Honor Code may result in amendment of the grade contract to a D or F if appropriate. More information on the Oberlin Honor Code may be found here: <https://www.oberlin.edu/dean-of-students/student-conduct/academic-integrity>.

## Resources Offering Support

- Angie is available for individual consultation during student hours or by appointment. If you are looking to improve your performance or are struggling in ways new to you but not sure how to proceed, I am happy to discuss and provide suggestions.
- **Students who have been approved by the [Office for Disability and Access](#) (Peters Hall 127) for accommodations should speak with the instructors to ensure that your needs are being met in this course. Please reach out in advance so that we may make appropriate arrangements before they are needed.**
- [Peer Tutors](#) are available - for free - through the Academic Advising Resource Center (AARC), <https://www.oberlin.edu/aarc/peer-tutoring> or email [peertutoring@oberlin.edu](mailto:peertutoring@oberlin.edu). You are encouraged to arrange for a tutor as soon as you like.
- The [Executive Functioning Program](#) offers peer tutors, freely available through the ODA office. If you struggle with planning and organization skills, you might contact this program!
- We do not have OWLs or HOOTs for this course but you are encouraged to use the CLEAR [Quantitative Skills Drop-in Tutoring Center](#) (Science Center K100). They can assist students with math skills, statistics, computer software like Excel, or programming languages. No appointment is necessary.
- Health & Wellbeing: The offices of [Student Health Services](#) and [Counseling and Psy-](#)

[chological Services](#) are located in Dascomb Hall, Suite B. Services are free and drop-in hours are available.

## Assessment – Contract Grading

Links to course materials on the shared Drive folder are also available via Angie’s webpage: <http://www2.oberlin.edu/faculty/aroles/biol200.html>

In this course, we use a form of contract grading, a method of assessment in which you complete a contract laying out the work you must complete to a satisfactory level in order to earn a specific letter grade.

Read the following contract requirements carefully before filling out the [Grade Contract form](#) to complete your contract. Contracts are due by Fri Sep 8.

If you have questions about the contract process, email or visit Angie to discuss.

### General Overview and Expectations

In this course, you will determine your final grade based on the amount of work that you complete to a satisfactory level (as determined by the instructor). All passing grades will be expected to complete a baseline amount of work while higher grades will require additional work to be completed to satisfactory (thus, a higher level of mastery). Letter or number grades will not be assigned for any assignments. Instead, when work is returned to you it will be marked either “Satisfactory” or “Revise”. Any work marked Satisfactory needs no more attention from you. Work marked Revise requires that you address the comments provided by the instructor and attempt to correct errors in the assignment, turning in a revised version of the assignment within one week. If that revision is sufficient, it will be returned as Satisfactory; if not, additional revisions may be needed or perhaps a meeting with the instructor. More than 2 revisions requires a one-on-one meeting with the instructor. At the end of the semester, you and I will determine your grade depending on how many of each assignment you completed to Satisfactory.

In addition to the above, you will be responsible for determining due dates for some assignments for this course (including exams). Generally, you must turn in quizzes or problem sets within 2 weeks of the due date though exceptions can be arranged individually with the instructor. Late assignments may carry consequences for you or impact your final grade.

I am choosing to use contract grading in order to provide you ownership over your grade and to enable you to focus more on what you are actually trying to learn. As a further benefit, contract grading helps you to develop and practice valuable life skills such as time management and the ability to assess the quality of your own work. Grades do not follow you into jobs after college (unless you do more schooling!), so it’s important to learn to assess your self.

Here is a breakdown of the work expected to be Satisfactory in order to achieve a grade of B. Applying +/- to the grades will be decided by you and I at the end of the term and

can be used to adjust for discrepancies from the guidelines below (such as work turned in but not revised as requested). Grades of D and F are reserved for cases in which there is a systematic failure to meet contractual obligations.

To complete the work required for a B, expectations are that you will spend at least 11 hours per week on this course.

Assignment (max number)	B contract requirement
Lecture periods attended (39)	33
Problem Sets (13)	11
Quizzes (12)	10
Lab periods attended (12)	12
Pre-Lab Assignments (11)	11
Post-Lab Assignments (9)	9
Exams (4)	4
Mid-term Reflection (1)	1
Final Reflection (1)	1

Earning an A will require all of the work for a B plus completion of 1 additional project, exploring a course topic or topics in greater depth. Project goals and plan must be set by Oct 6 and completed by Dec 1.

Earning a C will occur when work required for a B is not completed to Satisfactory or in a timely fashion (repeatedly late).

### Assignment Descriptions and Guidelines

#### (1) Class attendance and participation

Class attendance is expected. Absences arranged in advance and with Angie's agreement do not count against the allowed number of missed class periods.

#### (2) Lab attendance and assignments

Prompt lab attendance is expected for ALL scheduled lab periods (see lab syllabus). Lab will begin on time at 1:30p so timeliness is critical to proper functioning and ability to complete the lab in the allotted time. Respect the time of your classmates and instructor by being on time. Late arrival or early departure from lab periods will be noted and considered in determining your final grade. You must attend the day for which you are enrolled. See the lab syllabus for details on unavoidable conflicts and contact your lab instructor (Tue: Angie Roles, Wed: Evan Hilpman, Thu: Jason Gleditsch).

For most lab periods, you will complete a pre-lab exercise which will be turned in before that week's lab. Most lab periods will also involve a post-lab assignment which is due by the following week's lab. You must complete all lab exercises to a Satisfactory level; Unsatisfactory assignments must be revised until they are considered Satisfactory. All revisions must be submitted within one week of the prior assignment being returned to you.

**(3) Quizzes (weekly) – You choose due date.**

A set of content videos is assigned for each week (videos less than 20m each), providing the content that you are learning in a traditional lecture format. Live class meetings will focus on particular aspects of the content and explore them in greater depth via case studies. Weekly quizzes (~10-15 multiple choice or true/false questions) practice the understanding you are learning in the videos and lecture meetings. You will receive your score on these quizzes immediately upon completion. For any questions for which you did not achieve full credit, you will receive revisions explaining why you got the question wrong and how you know the correct answer(s) is correct. You are encouraged to ask Angie when you are not sure why an answer is considered correct or incorrect!

**(4) Problem Sets (weekly) – You choose due date.**

In order to practice your understanding of the content video material and in-class materials, you will complete a weekly problem set focused on that week's material. Optional supplemental readings will also be provided in most cases. You may use any source of information that you desire to complete these problem sets, including working with other students in the course (such as your assigned group). Once completed, you will check your answers against the key provided by Angie. For any incorrect responses, you will endeavor to correct them and provide a written explanation of what you think led you astray. You will submit your responses and your corrections as a single document. If you had correct responses for all the questions, you will still be sure to reply to the reflection question on the submission form in order to achieve a Satisfactory assignment. Revisions are not requested for problem sets: all assignments that fit the above criteria are accepted as Satisfactory (you must respond to the reflection question on the submission form).

**(5) Short-answer Exams – You choose due dates.**

In order to bring together your learning in live lecture meetings, during lab periods, and from the content videos, there will be 4 short-answer exams. These exams will be open-note, open-book, and untimed but designed to require 50 minutes to complete (if studied for). This means you may use any materials supplied by Angie to complete the exam but you should not discuss the exam with anyone other than Angie. There will be no time limit on completion of the exam and all exams will be available as of the first day of class. You are responsible for scheduling when you will take each exam. For responses that are not Satisfactory, Angie will give you feedback and you will revise your response(s) until achieving Satisfactory. I suggest you choose due dates no earlier than the following to ensure all material is covered in class before you work on the exam:

- Exam 1 after Sep 29
- Exam 2 after Oct 27
- Exam 3 after Nov 22
- Exam 4 must be after Dec 12 and before 4pm Dec 17

**(6) Self-reflections (mid-semester and final) - You choose due dates.**

One important skill you will practice in this class is self-assessment, the idea that you

develop your own standards for your work rather than merely hoping that your work meets someone else's standards. To that end, it's important that you engage in a process of self-reflection. It is only by examining how things have gone and comparing that to how you might like them to have gone, that you can plan for making adjustments in the future. For this course, you will undertake one self-reflection in the middle of the semester (by Oct 13) and a second at the end of the term (by Dec 17). For each, you will complete and submit the provided form before attending a short meeting scheduled with Angie to discuss your responses.

### Expected Weekly Schedule – Fall 2023

Week	Dates	Topics/Exams Coverage
0	Sep 01	Course introduction
1	Sep 04–08	Biodiversity, Phylogenies, Cells <i>M Sep 04 Labor Day (no class)</i>
2	Sep 11–15	Eukarya, Genomes, Eukaryotic Genomes
3	Sep 18–22	Mitosis, Meiosis, Life Cycles
4	Sep 25–29	Genes, Transcription, RNA processing <i>M Sep 25 Yom Kippur (no class)</i>
<b>Fri Sep 29: Finish Exam 1 material</b>		
5	Oct 02–06	Translation, Sex Determination, Inheritance & Segregation
6	Oct 09–13	Dominance, Independent Assortment, Linkage
	Oct 16–20	<i>Fall Break (no class)</i>
7	Oct 23–27	Hardy Weinberg, Detecting Evolution, Genetic Variation
<b>Fri Oct 27: Finish Exam 2 material</b>		
8	Oct 30–Nov 03	Mutation, Gene Flow, Genetic Drift
9	Nov 06–10	Nonrandom Mating, Selection, Heritability
10	Nov 13–17	Speciation, Population Ecology, Life History
11	Nov 20–24	Behavior, Learning, Genetics of Behavior <i>F Nov 24 Thanksgiving Break (no class)</i>
<b>Wed Nov 22: Finish Exam 3 material</b>		
12	Nov 27–Dec 01	Interspecific Interactions, Competition, Community Structure
13	Dec 04–08	Ecological Succession, Energy Flow, Biodiversity Patterns
14	Dec 11	Nutrient Cycling
<b>Mon Dec 11: Finish Exam 4 material</b>		
	Dec 13–16	Reading Period
	Dec 17–21	Finals
<b>Sun Dec 17: 2:00-4:00pm Final Exam Period</b>		