

# Syllabus for Biology 201-006 - Ecology and Evolution - Spring 2019

**Time:** MWF 10:10-11am

**Place:** G200 Genome Science Building

## Instructors:

### Dr. Todd Vision (Evolution)

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Reservations: <https://tjv.youcanbook.me/>

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**Teaching Assistants:** see Recitation Schedule

**Welcome to BIOL 201 - Ecology and Evolution!** With worldwide concerns like global warming, population growth, food and water security, and emerging diseases, it is important to understand the forces governing the living world on which we depend. The principles of evolution and ecology help make sense of where the diversity of organisms comes from and how organisms interact with each other and the physical world. Evolution provides the basis for understanding the origins of all biological phenomena. Ecology can be viewed as the theater within which the evolutionary play takes place. Since evolution cannot be understood in the absence of ecology and ecology cannot be understood without evolution, we will explore them together in this course.

By the end of this course you will be able to do the following:

1. **Explain** the process of descent with modification and how relationships among living things can be used to understand organismal diversity.
2. **Explain** the process of adaptation by natural selection and the role of interactions between organisms and their physical and biotic environments.
3. **Explain** how natural selection interacts with other evolutionary forces to shape genetic and phenotypic changes in populations over time.
4. **Explain** how the interactions between organisms and their environment are related to tradeoffs, feedback, networks at a variety of different scales.
5. **Apply** the principles of ecology and evolution to problems in environmental science and medicine, and at all levels of biological organization.

**Prerequisites:** BIOL 101 and CHEM 101 or 102, all with a grade of C or better. We assume that each of you has had the equivalent of a semester course in biology wherein you learned Mendelian genetics and enough basic biology to know the major groups of organisms and the terms used for describing them. We also assume a solid background in high school algebra.

**Course Website (Sakai):** <https://sakai.unc.edu/portal/site/bio201.006.spr19>

This syllabus, the lecture outlines, supplemental readings, and other useful materials will be posted on Sakai throughout the semester. *It is your responsibility to check it and your UNC email account for announcements regularly.*

## Required Textbooks:

1. SimUText Ecology electronic textbook. Vouchers can be purchased directly from UNC Student Stores (at the cashier's desk) or from <http://simutext.com>. With the voucher, you can subscribe

and download installers at: <https://www.simutext.com/student/register.html#/key/UCpa-N2gP-MeWN-RXLY-ydBp> (note that this link is specific to our class). See additional instructions under Sakai Announcements. Please contact <http://simutext.zendesk.com> should you encounter any technical difficulties with SimUText.

2. Bergstrom C.T. and Dugatkin, L.A. 2016. *Evolution*, 2<sup>st</sup> Edition. WW Norton and Company. Available anywhere textbooks are sold (including UNC Bookstore). Additional copies are on reserve at Student Stores.

**Readings:** Reading assignments for each day are listed on the Lecture Schedule, and will be drawn primarily from Bergstrom & Dugatkin (B&D) and SimUText. Additional readings will be posted to Sakai. In order to be prepared to actively engage with the material during class time, readings should be completed **prior** to lecture.

**Guided Reading Questions (GRQs):** These are study questions intended to help you identify the key points in the readings. They are **not** graded. For best results, review the study questions both **before** and **after** the readings. You will find the GRQs in the Resource folder on the Sakai site.

**Reading Quizzes (10% of your grade):** Unlike the GRQs, reading quizzes are **required**, low stakes, assessments that help ensure you are prepared for each lecture. **Quizzes must be completed by 9am on the day on which they are due.** Quizzes are graded for correct answers. Although for some assignments the questions may show up within SimUText, all **Quiz questions must be answered on Sakai in order to be counted.** Late Quizzes will not be accepted.

**Class Participation (8% of your grade):** We will be using **Learning Catalytics (LC)** as our classroom response system. Registration instructions are available on the course Sakai site. If you already have an account from prior use of Pearson products there is no need to create another one, just make sure you can log in successfully. If you have never used Learning Catalytics, visit <https://www.learningcatalytics.com> to register prior to the second class class. **You must register using your official UNC email address as your login name and your UNC PID as your student ID. No exceptions!** Complete instructions for LC registration can be found in the “Instructions to Register for Learning Catalytics” in the Welcome Announcement.

We **strongly** recommend a phone or a tablet and **not a laptop**, although you may bring your laptop to class if you wish (but see the Digital Etiquette section below). Remember that when using a web browser to respond to poll questions, you need to log into your LC account first.

There will be many opportunities for participation throughout the semester, and you will be given 12 “freebie points” to take into account technical difficulties or unexpected absences. These freebies are questions that you do not have to submit an answer to and you will still earn points for. As such, please do not email us about making up poll questions. Class participation questions will be graded 50% for effort, 50% for correct answer (some questions may have multiple correct answers, and some may only be graded for participation where indicated). There will be opportunities during the semester when you can earn double participation points for a written question (aka “Double Days”). These days and questions will not be announced prior to class. You will work with your group members to complete these activities! **If you miss class (for any reasons) you cannot make up your participation points, but you can use your “freebie points.”**

## GROUPS

Students learn more when they work in small groups of peers to discuss issues and solve problems. By Tuesday, January 29, you will be assigned to a group of 2-3 students. ***If you have a seating request, a Sakai announcement will be posted with instructions for how to file that request before January 25<sup>th</sup>.*** Once groups have been assigned, you will sit with your group in a designated area. We encourage you to get to know your group members because you will work with them throughout the semester. Collaborating with others is an important skill in all professions, and we are available to help you to solve interpersonal problems that may arise within your group.

If you are experiencing conflict with your group members, you may decide to invoke the “Terminator Clause.” When you work in a group, it is possible that some team members will contribute more than will others. Over time, this can be a critical problem if one person demonstrates a lack of commitment to the team (e.g., failing to contribute to group assignments). In such an instance, we reserve the right to “fire” that member. Firing involves a two-step process: First, the team (in consultation with the professor) gives the wayward member a warning that includes the wayward teammate negotiating with the entire team about how he or she is going to be a better teammate. Second, if the member continues to behave inappropriately, they will be terminated from the group. Assignments from the point of termination to the end of the semester will be completed as an individual. Bad teammates usually show their tendencies early, so let a problematic group member know his or her behavior is not acceptable early.

**Exams (72% of your grade):** There will be 3 midterm exams worth 16% each and one cumulative final worth 24%. While Exams 1-3 are not cumulative, the advanced material at the end of the course does build on the more basic material taught in the beginning. The final exam will be 50% material from the last quarter of the class, and from 50% material from the first three quarters of the class. Exam questions will be taken from lectures, recitation material, and assigned readings. Exams may consist of a variety of question types including: true-false, multiple choice, fill in the blanks, and short answer; exam style questions will be given for practice during lectures.

Permission to miss a midterm examination will be granted only in extreme circumstances (e.g. severe illness), must be certified as University excused by the UNC Dean of Student’s office, and obtained in advance (at least two hours before the exam starts, but the sooner you let us know, the better!). Please note that unless you are an athlete or affiliated with UNC athletics, missing an exam to spectate at a sporting event does not constitute an extreme circumstance! In the event that you obtain permission to miss one midterm examination, you will be offered the option of 1) taking a makeup exam, or 2) of not taking the exam, in which case your overall exam grade will be based on the remaining three exams (i.e., weighted 21% for the two midterms and 30% for the final). Midterm exams that are missed without advance permission will be given a score of zero points. Students who miss two exams or fail to take the final exam will fail the course.

**RECITATION (10% of your grade):** Ten percent of your grade will come from work done in and for your weekly recitation section. Refer to the separate recitation syllabus for details.

**GRADE CALCULATION:** Your letter grade will be based on the sum of your performances on quizzes, in-class participation, exams, and recitation according to the following scale:

A:	93-100%	B-:	80-82.9%	C-:	70-72.9%
A-:	90-92.9%	C+:	76-79.9%	D:	66-69.9%
B+:	86-89.9%	C:	73-75.9%	F:	<65.9%
B:	83-85.9%				

In order to achieve a fair grade distribution at the end of the semester, the instructors may *adjust* grade thresholds class-wide to improve your letter grades; the thresholds will under no circumstances be adjusted to lower your grades. There will be absolutely NO appeals regarding the final grading scale (e.g. “I earned a score of 89.9, can you round that to a 90?”).

**Grading disputes:** Scores and final course grades will be changed ONLY in the event that an exam question was mis-graded or if exam points were totaled incorrectly. If your exam points were added incorrectly, please see your TA and we will be happy to make a correction. All other requests for exam re-grading must be submitted through Gradescope with a written justification. In the event that you request a re-grade of more than one question, we reserve the right to re-grade the entire exam. All appeals for changes must be made within 72 hours after the exam is returned.

**Peer Mentors and Supplemental Instructors:** This semester we will have supplemental instructors (SIs) and multiple peer mentors (PMs) assisting our class. These are former BIOL 201 students who are volunteering their time to assist you both in and out of the classroom. Supplemental Instructors will hold 1-2 hours of supplemental instructions outside of class each week. These sessions will host 20-40 people. Peer Mentors will host one-on-one or small group tutoring sessions. Please make use of these wonderful people! You will see them in class each week as they will be circulating and helping you address problems in class. Visit <https://course.care/> to register and enter code E8A864 to see the tutoring (PM) and review session (SI) schedules.

**Office Hours:** These are hours that the professors and TAs set aside each week to meet with you one-on-one or in small groups (bring your study partner!). You get to direct these conversations -- we can talk about whatever you want (the course, study skills, personal matters, major and career advice, internship opportunities, etc.). We look forward to learning about your Tarheel experiences!

To reserve a time with an instructor during office hours, please see the information for each person. In addition to YouCanBookMe or Sakai sign-ups for regularly scheduled hours, special appointments can be made by email as long as there is sufficient advance notice (at least 24 hrs). Walk-in appointments during scheduled office hours are welcome, but may need to wait if we are already with a student. To meet as a group, only one person need sign up. We may add hours some weeks as schedules allow.

**Email:** We will make every effort to respond to your emails quickly (within 2 days, except weekends). Please email us with **BIOL 201.006** in the subject line. To comply with the Family Educational Rights and Privacy Act (FERPA), we cannot respond to messages that refer to individual students or student progress in the course through non-UNC accounts, phone calls and other channels.

**Piazza:** We have set up a forum for class discussions and peer-to-peer support on Piazza. This is also where Peer Mentors and Supplemental Instructors post announcements about their hours and services. Piazza works best when students use it to help each other. The teaching staff will weigh in occasionally, but only after we see your solid effort to tackle a question. The quicker you begin asking questions on Piazza, the quicker you will benefit from the collective knowledge of your classmates and instructors. We encourage you to ask questions when you are struggling to understand a concept—you can even do so anonymously. Rather than ask, “What is the answer to question 2?”, make an effort to explain what you think the answer is, and why you think it’s correct (or not), or tell your colleagues where you are stuck! This approach sparks conversation, which leads to learning. Also, please make sure to re-read the syllabus and lecture schedule **before** asking a logistics question! If you have any problems or feedback for the developers, email [team@piazza.com](mailto:team@piazza.com).

Sign up for our class page at: <https://piazza.com/unc/spring2019/biol201006>. We are **BIOL 201.006 (SPRING 2019): Evolution and Ecology (Evans-Vision)**.

**Digital Etiquette:** This course will require you to use a digital device during class time. Please be respectful of your own class experience and that of your classmates and **restrict your use to course content**. Attempting to multi-task **will harm your class performance**, and **interfere with the concentration of those around you**.

If we see that you or your peers are distracted, we will ask you to put your devices away and you may forfeit your ability to earn participation points that day. There will be times when you have completed your work or answered a LC question, but your peers have not. We ask that you assist your peers when appropriate or use the time to review your notes while you wait. You will learn more if you concentrate on the course while you are here, and your classmates will thank you for not impeding *their* ability to learn. If you have to answer a text or a phone call, please step out of the room and return once you have completed your conversation.

**Students needing accommodations:** Please contact us within the first two weeks of class if you will require any special accommodations.

## HOW TO BE SUCCESSFUL IN BIOL 201

**Attendance in lectures is essential for success in this course.** If you must miss a lecture, obtain a set of notes from a friend (We will also post lecture slides on the course website, and will be experimenting this semester with making videos available). Do the reading before the lecture, and avoid the temptation to just look up answers to the Quiz questions, because otherwise you may lack knowledge that will be needed to complete the class activities. After class, periodically go back to the book to help you retain the points that were stressed. There is more in the books than we can cover in class, but additional examples from the texts may prove very helpful on the exams, and you will likely understand them more deeply the second time around!

**Take hand written notes using the lecture outlines.** Previous students report that this is VERY important for success in BIOL 201, and research backs this up. Students who take handwritten notes learn more (See “The Pen Is Mightier Than the Keyboard: Advantages of Longhand Over Laptop Note Taking” Under Student Resources on Sakai). Print out the lecture outlines before coming to class. The slides will be posted after class, and comparing your handwritten notes to the slides is a great way to study.

**Use your teaching staff!** Attend Supplemental Instructions sessions and visit with Peer Mentors. Visit your professor or TA during office hours.

**Uphold the Honor Code.** Academic honesty means that we respect each other and the work that we do; this means we behave with integrity in and out of the classroom, and do not lie, cheat or steal (e.g. plagiarism is a form of stealing). The University of North Carolina at Chapel Hill has had a student-led honor system for over 100 years. It is our responsibility to report any instances of academic dishonesty and violations of the Honor Code. The student-led Honor System is responsible for adjudicating any suspected violations of the Honor Code. **Suspected instances of academic dishonesty will be reported to the Honor System and students will receive a zero on the assignment or exam in question.** Your full participation and observance of the Honor Code is expected. Please report any violations that you observe. Information, including your responsibilities as a student is outlined in the Instrument of Student Judicial Governance (here: <https://studentconduct.unc.edu/sites/studentconduct.unc.edu/files/documents/Instrument.pdf>).

**Academic Honesty and Learning Catalytics:** In order to earn your participation points you must be physically in the classroom and answer questions during class time. **If it is determined that you are**

**not physically present while answering poll questions, you will automatically forfeit all participation points for the semester and your case will be reported to the UNC Honor Court.**

You will learn more and perform better by being physically present and problem solving with your classmates. If you legitimately have to miss class, that's ok – remember that some points will be dropped at the end of the semester.

**College can be challenging in unexpected ways.** It is possible that at some point this semester your multiple competing personal responsibilities and interests may get in the way of your academic success. It is also possible that you may get sick or have other personal emergencies. The bottom line is this: asking for help is a sign of strength and self-care! **Please ask for help early and often!** Small problems are easier to cope with than waiting until the end of the semester when the issue has escalated. While we sincerely hope that you will let us know when things are not going well, here is an incomplete list of other campus resources you can turn to, as well:

- **Dean of Students:** If at any time during the semester you experience a personal or family illness, loss, financial stress, academic access, living issues, interpersonal violence response, alcohol or similar substance related issues, and other forces that may interfere with your well-being and success and/or academic retention please contact the Dean of Students immediately (or contact your professors and we will do so for you). <http://odos.unc.edu>
- **Academic Advising:** Your academic advisers are familiar with all of the campus policies, procedures and requirements. <http://advising.unc.edu>
- **UNC Learning Center:** A variety of services are offered at this center, located in the Student Academic Success Building (SASB). The resources include the writing center, academic coaching, study skills information, etc. Learn more about these free resources. <http://learningcenter.unc.edu>
- **Counseling and Psychological Services (CAPS):** If you are experiencing any distress, please speak with a medical professional in a confidential setting. The CAPS office has daily drop in hours or you may call them for an appointment (919-966-2281) or schedule online ([healthyheels.unc.edu](http://healthyheels.unc.edu)). <https://caps.unc.edu/>
- **LGBT Center:** Provides educational services, resources and advocacy. <http://lgbtq.unc.edu>
- **Carolina Women's Center:** Aims to provide an equitable working and educational environment regardless of gender. Provides assistance to all individuals regardless of gender orientation. <http://womenscenter.unc.edu>
- **International Student and Scholar Services:** offers services to help international students adjust to life in North Carolina and UNC. <http://iss.unc.edu>

**Note: The instructors reserve the right to make changes to this Syllabus,** including the scheduled dates for exams or lecture topics, and the assignment of additional readings. These changes will be announced as early as possible so that students can adjust their schedules.

**Reading for Fun!** Want to learn more the topics we cover in this class? Here's a list of books we recommend:

- *Why We Get Sick: The Science of Darwinian Medicine* by R.M. Nesse and G.C. Williams
- *A Brief History of Everyone Who Ever Lived* by Adam Rutherford
- *The Beak of the Finch: A Story of Evolution in Our Time* by Jonathan Weiner
- *The World Without Us* by Allan Weisman
- *The Sixth Extinction: An Unnatural History* by Elizabeth Kolbert
- *1491: New Revelations of the Americas Before Columbus* by Charles C. Mann
- *Silent Spring* by Rachel Carson
- *I Contain Multitudes* by Ed Yong
- *Parasite Rex* by Carl Zimmer