

Biology 150: Organismal and Ecological Biology (Sections 29, 30, and 32)
3 credits (2 credits lecture, 1 credit BioLit)
The University of Tennessee, Knoxville, Fall 2017

“Lecture”: MWF, 10:10 – 11:00 am, Art and Architecture 113; Fridays are for quizzes some weeks

Lecture Instructor: Dr. Elisabeth Schussler (eschussl@utk.edu)
Office Hours (402 Hesler): Mondays 1-2; Wednesdays 2-3
Other meetings by appointment

BioLit (Biological Literacy): 50 minutes per week in Strong Hall 232; 25% of your course grade
BioLit starts AUGUST 30
You will receive a separate BioLit syllabus in BioLit class

BioLit Instructor: Shannon Bayliss (sbayliss@vols.utk.edu)
Office: 790 Dabney; Office hours: Tuesdays 1:00 – 2:30pm

Course Description: Intended for science majors, an introduction to the major biological concepts emphasizing the organismal and ecological aspects of life. Organized along themes of evolution, structure and function, information flow, exchange and storage, pathways of energy and matter, and systems.
Satisfies General Education Requirement: (NS)

What you should learn in this course (and for a Biology degree)

By the end of the course, you should be able to explain how the **five big ideas (FBIs)** in biology relate to the development, maintenance, and loss of biodiversity on the planet:

1. **Evolution:** Populations of organisms and their cellular components have changed over time through both selective and non-selective evolutionary processes.
2. **Structure and Function:** All living systems (organisms, ecosystems, etc.) are made of structural components whose arrangement determines the function of the systems.
3. **Information Flow and Storage:** Information (DNA, for example) and signals are used and exchanged within and among organisms to direct their functioning.
4. **Transformations of Energy and Matter:** All living things acquire, use, and release matter and energy for cellular / organismal functioning.
5. **Systems:** Living systems are interconnected, and they interact and influence each other on multiple levels.

You should also demonstrate the following **five scientific practices (FSPs)**:

1. Link lecture topics and synthesize information, particularly in reference to the FBIs
2. Develop hypotheses and predictions (ask scientific questions) based on models or data
3. Interpret scientific representations, such as graphs, phylogenies, or molecular structures, or data, and come to a conclusion (with evidence)
4. Summarize information from scientific articles or other sources
5. Predict the consequences of changes to systems or pathways

How you will learn the material

You need to THINK for learning to occur. I provide pre-class readings and online lectures so you can think about the basic concepts before class. Class is to apply ideas, clarify your understanding, and test your learning. We will mostly work in groups in class; I will rarely lecture for extended time periods. After class, you should answer and connect the learning objectives in writing. Quizzes and exams will test your understanding of the concepts, NOT just your ability to memorize information (short answer will be included!).

Lecture Schedule (readings listed here are Freeman SECTIONS (Chapter.section); other readings may be assigned)	BioLit Schedule
Aug. 23 Course Introduction (Bioskills 12 and 18, chapter.section 1.6) Aug. 25 No class	No BioLit
Aug. 28 Scales of Study in Biology (51.1, 52.4 (not island biogeography), 54.1, 54.3) Aug. 30 Genes and DNA (1.4, 4.2, 16.2-16.4 (SKIM), pages 396-397 for overview) Sep. 1 BONUS - learning strategies session	Unit 1, Week 1
Sep. 4 HOLIDAY – LABOR DAY Sep. 6 DNA, Individuals, and Populations (12.1, 12.2, 13.1, 13.2, 14.2, 14.4) Sep. 8 No class	Unit 1, Week 2
Sep. 11 DNA, Populations, and Species Sep. 13 DNA, Populations, & Change Over Time (1.3) Sep. 15 QUIZ 1	Unit 1, Week 3
Sep. 18 Reviewing and Redirecting Sep. 20 Natural Selection (ALL of Chapter 22, 23.1, 23.3) Sep. 22 No class	Unit 1, Week 4
Sep. 25 Natural Selection and Other Mechanisms of Evolution (23.2, 23.4-23.6) Sep. 27 Other Mechanisms of Evolution (pages 516-517) Sep. 29 QUIZ 2	Unit 1 Quiz
Oct. 2 Speciation (24.1-24.3, 25.3) Oct. 4 Time / Phylogenies (1.5, 25.1, 25.2, 25.4, Bioskills 13) Oct. 6 No class – FALL BREAK	No BioLit
Oct. 9 Population Ecology (49.1, 51.3 – 51.5) Oct. 11 Community Ecology (52.1 – 52.2) Oct. 13 QUIZ 3	Unit 2, Week 1
Oct. 16 Energy and Ecosystems (53.1 – 53.3) Oct. 18 Island Biogeography (52.4 just parts on island biogeography) Oct. 20 No class	Unit 2, Week 2
Oct. 23 Global Biogeography (49.2 – 49.5, pages 1162-1163) Oct. 25 Prokaryotes (7.1, 7.2, 26.1 – 26.4) Oct. 27 QUIZ 4	Unit 2, Week 3
Oct. 30 Prokaryotes and Disease (33.1) Nov. 1 Evolution of Eukaryotes (27.3) Nov. 3 No class	Unit 2 Quiz
Nov. 6 Diversification and Movement to Land (27.1, 27.2, 27.4) Nov. 8 Fungi (29.1 – 29.4) Nov. 10 QUIZ 5	Unit 3, Week 1
Nov. 13 Plants (28.1 – 28.4) Nov. 15 Plants Nov. 17 No class	Unit 3, Week 2
Nov. 20 Animals (21.3 (skim only HOX genes), 30.1 – 30.4, 31.1 – 31.3) Nov. 22 Take-home Animals (32.1 – 32.4) (we will not meet in class this day) Nov. 24 THANKSGIVING	No BioLit
Nov. 27 Animals / Humans (32.5, pages 702-703) Nov. 29 Loss of Biodiversity (54.2) Dec. 1 QUIZ 6	Poster Project
Dec. 4 Conservation of Biodiversity (54.4)	No BioLit

Cumulative Final Friday, December 8, 8:00 – 10:00 am

As per the registrar's website: "Final exams must be given during the final exam period at the scheduled time, although alternative uses of the scheduled exam period may be designated by the instructor. Students are not required to take more than two written exams on any day. The instructor(s) of the last non-departmental exam(s) on that day must reschedule the student's exam during the exam period. It is the obligation of students with such conflicts to make appropriate arrangements with the instructor at least two weeks prior to the end of classes."

****Course schedule is tentative and subject to change!****

Sept 1 - Last day to drop without a "W"; Nov. 14 - Last Day to Drop with a "W" (WP/WF);

Dec. 5 - Last Day for a University Withdrawal

Technology: While in class, use electronic devices only for class purposes... using them for other tasks has been found to decrease course grades. **During quizzes and exams, any electronic device seen within your sight will result in a grade of zero.**

Support for learning

REQUIRED Texts and Materials:

- Text: Freeman, et al. 2016. *Biological Science* (6th ed) with Mastering Biology. Pearson Publishing.
- Many of you will already have the required materials through the Inclusive Access program. In this program, you are automatically billed for the electronic materials on your student account. You can still opt out, however, but must do so by the drop date.
- IF you opt out of Inclusive Access, you can purchase the materials through the bookstore in looseleaf form ONLY, bundled with the masteringbiology software, as a CUSTOM THIRD edition (has a sunflower on it). However, it is MORE expensive. Only do this if you want a hard copy of the text... note, however, that hard copies of the textbook are also on reserve at the library.
- If you have questions, contact Pearson Publishing (www.pearsonmylabandmastering.com).
- To register for online course materials: **Zip code: 37996-1610; Course ID: SCHUSSLER72842.**

Course website: Go to "Online@UT" to login to Canvas. I will send regular announcements and e-mails through this site. If you are not receiving them, then something is wrong!

Communications:

- You need to regularly check your utk e-mail account for weekly announcements related to this course.
- If you need to meet and can't make office hours, use your UTK e-mail to schedule a meeting.
- Please allow up to 2 working days for responses to your e-mails.

Study Rooms:

417 Hesler is a quiet study room for majors in Biology.

Strong Hall room 102 is a student resource center for studying and printing.

Assessment of your learning

Assessment (quizzes and exams, and assignments) is very important to the learning process. It lets you and I know what you understand and what you do not. I assess often because it encourages you to keep up with your studying and helps you learn – every time you have to re-process information you learn more! The quizzes and exams will all be a mixture of multiple choice and short answer. I include written responses because this type of assessment encourages you to explain and connect ideas. It helps you learn.

COURSE GRADE IS OUT OF 1,000 POINTS:

Lecture: (75% of grade; 750 points)

Quizzes and Final Exam 450 points

Quizzes (6 x 50 points each = 300 points)

Cumulative Final (150 pts)

**One of your quizzes grades can be replaced by a scaled score that reflects your cumulative final percent; this can be used to replace a poor quiz grade*

Assignments (total points will be scaled to 300 regardless of actual total) 300 points

Learning Catalytics and In-class Assignments (~8 points per class; 200 points)

Weekly written assignments (100 points)

**Assignments cannot be e-mailed or turned in late, there will be 20 extra points of assignments that can be used to replace missed work*

BioLit: (25% of grade; 250 points) – see BioLit syllabus 250 points

Quiz / Exams / Assignment Policies:

- NO make-up assignments
 - Assignments cannot be e-mailed and will not be accepted late
- NO make-up quizzes or exams unless there is a valid excuse (e.g., family emergency, medical emergency, etc). The excuse MUST be documented.
 - **VERY IMPORTANT:** If you are going to miss a quiz or exam, you MUST contact me prior to the start of the assessment. Send me an e-mail, call, leave a note on my door – whatever – and make sure you include your e-mail AND a phone number where I can contact you.
 - Make-up quizzes or exams will be short answer / essay and will be scheduled at the instructor's convenience and by their permission only.
- All work should be done independently (unless group work is permitted, and then you may ONLY work within your group on the assignment); plagiarism software will be used to check written assignments for copying from classmates or other sources. **Plagiarism will result in stiff penalties – please see section below.**

Final letter grades will be determined by the total percentage of 1,000 points accumulated as follows:

A	93 – 100%	C	73 – 76%
A-	90 – 92%	C-	70 – 72%
B+	87 – 89%	D+	67 – 69%
B	83 – 86%	D	63 – 66%
B-	80 – 82%	D-	60 – 62%
C+	77 – 79%	F	<60%

Academic integrity:

Academic dishonesty of any sort will not be tolerated. Plagiarism includes the copying of phrases, portions of sentences or the main ideas from ANYONE (including a classmate) on ANY work submitted for a grade (exams, assignments, quizzes, etc). Academic dishonesty also includes assisting other students on quizzes, exams, or assignments. You are expected to abide by The University of Tennessee honor statement in Biology and in all of your university activities as pledged in the honor code:

“An essential feature of the University of Tennessee, Knoxville, is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the University, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity.” (Undergraduate Catalog)

Depending on the offence, penalties for academic dishonesty range from a minimum of a zero for the assignment, to an F for the course, to the filing of formal academic dishonesty charges seeking dismissal from The University of Tennessee. These choices are at the discretion of the instructor, and can occur in either the lecture or the BioLit portion of the class.

You should be familiar with the requisites of academic honesty and what constitutes academic dishonesty as outlined in the UT Undergraduate Catalog (<http://catalog.utk.edu/>).

Other information

University Civility Statement:

Civility is genuine respect and regard for others: politeness, consideration, tact, good manners, graciousness, cordiality, affability, amiability and courteousness. Civility enhances academic freedom and integrity, and is a prerequisite to the free exchange of ideas and knowledge in the learning community. Our community consists of students, faculty, staff, alumni, and campus visitors. Community members affect each other's well-being and have a shared interest in creating and sustaining an environment where all community members and their points of view are valued and respected. Affirming the value of each member of the university community, the campus asks that all its members adhere to the principles of civility and community adopted by the campus: <http://civility.utk.edu/>.

Disability Services:

"Any student who feels s/he may need an accommodation based on the impact of a disability should contact Student Disability Services in Dunford Hall, at 865-974-6087, or by video relay at, 865-622-6566, to coordinate reasonable academic accommodations.

Academic Assistance:

Tutoring: The Division of Biology does not offer tutoring services. Contact the Student Success Center and the Academic Support Unit of The Office of Minority Student Affairs for information about tutoring opportunities.

- **Student Success Center:** The comprehensive source for information, services, and resources to assist your success at UT: <http://studentsuccess.utk.edu>
 - 812 Volunteer Boulevard, Greve Hall, room 324
 - 865 974-6641, Email: studentsuccess@utk.edu

Technical Assistance:

Canvas, clickers, or general information technology assistance:

- Help Desk: 865 974 9900 (M – F, 8:00 – 5:00) or online at <http://help.utk.edu/>
- OIT Walk-In Help Desk: Commons, 2nd floor Hodges Library
- Turning Technologies (clickers): 866 746 3015

Student Health Center: <http://studenthealth.utk.edu/>

1800 Volunteer Boulevard
865 974-3648

Counseling Center: <http://counselingcenter.utk.edu/>

1800 Volunteer Boulevard
865 974-2196, Email: counselingcenter@utk.edu

OTHER RESOURCES:

- One Stop: <http://onestop.utk.edu> (start here for any question you have)
 - Undergraduate Catalog: <http://catalog.utk.edu> (Listing of academic programs, courses, and policies)
 - Hilltopics: <http://dos.utk.edu/hilltopics> (Campus and academic policies, procedures and standards of conduct)
 - Course Timetable: https://bannersb.utk.edu/kbanpr/bwckschd.p_disp_dyn_sched (Schedule of classes)
 - Library: <http://www.lib.utk.edu> (Access to library resources, databases, course reserves, and services)
 - Career Services: <http://career.utk.edu> (Career counseling and resources; HIRE-A-VOL job search system)
 - Academic planning: <http://advising.utk.edu>
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Some advice on success in Biology 150

1. This seems obvious, but... attend class and take notes. Besides all the points for in class work, you will miss critical opportunities to learn and test your knowledge.
2. Use the learning objectives as a study guide – know how to answer them completely, because the quizzes and exam are testing your understanding of those ideas.
3. Do the pre-class work, and take notes on it. You will be lost in class without this background.
4. Don't skip the weekly assignments – they help you learn and comprise 10% of your grade.
5. Go to office hours. Ask me to clarify the information for you!
6. Do not skip BioLit. It is 25% of your grade and the skills you will learn are critical to doing science.
7. Study regularly and don't cram for the quizzes. It rarely works.
8. Form a study group, but only if you are actually studying in it; if you study alone, create written summaries of the notes and ideas from class and the learning objectives, **don't just re-read or highlight the textbook**. That rarely works either. Try to EXPLAIN the information to yourself, or write out an explanation without looking at your notes.