



Course Syllabus: BIOL1214-201/2H1 Life II: Evolution and Ecology

Spring 2026; TR 9:30am – 10:50am; Bolin 221

Contact Information

Instructor: Elizabeth A. Machunis-Masuoka

Office: Bolin 307F

Office hours: T 11:00am – 1:00pm; W 9:00am – 11:00am; Th 11:00am – 12:00pm

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Course Description

An introduction to the principles and mechanisms of evolution and ecology. The history, evidence, patterns, and mechanisms of evolution as a unifying theme of biology, including the role of genetic recombination, will be explored. Evolutionary principles will be used to describe multiple levels of biological interactions within and among species and their environments. Prerequisite(s): BIOL1114 with a grade of C or better.

Textbook & Instructional Materials

1. **A college-level biology textbook is required.** Lectures are derived from *Life: The Science of Biology*, 12th Edition by Sadava et al., which you should have from Life 1. Older editions may also be used, but the student is responsible for locating material in the text on their own. Any free biology textbook you can locate may also be used. I do NOT use online quiz/homework programs so don't pay for one.
2. **The following narrative biology textbook is required:** Sean B. Carroll, *The Story of Life: Great Discoveries in Biology*, W.W. Norton & Company, 2019. This is in the bookstore or can be rented through the bookstore or directly online.
3. **Lab protocols** appear on D2L and are not available in the bookstore. Weekly logins to D2L are required to access labs and to upload completed labs (all labs will be typed and uploaded to Dropbox folders in D2L). If you have a tablet or laptop you may bring it to lab to input data and work on labs directly. No handwritten labs will be accepted. If you do not have a computer, D2L can be accessed on your phone and there are computer labs on campus where you can work on labs and upload them to D2L.
4. **Lecture slides** have been uploaded to D2L. Slides are not a substitute for coming to lecture. You should review slides prior to coming to class and take notes on what is discussed in class. You have NO reason to photograph slides in class or copy slides in class as they have been given to you on D2L. You are responsible for ALL material on the slides

Course Organization and Attendance:

Life II is the second semester introductory biology course for **majors**. This class consists of both a lecture and separate lab component. You must be registered in and complete both the lecture and the separate lab.

Attendance is **mandatory** for both lecture and lab. Missing more than 6 lecture classes or 3 lab classes will result in the student being dropped from the course with an "F". Your final overall grade for Life II will be a composite

of your lecture grade and your lab grade (see below). To get an A in the course, you must get an A in the lecture and an A in the lab.

Grading

Students must demonstrate mastery of at least 60% of the material presented to pass the course as evidenced by grades on exams and assignments. Overall, **75% of your grade is from lecture and 25% is from lab**. The breakdown in the grades is shown below.

Table 1: Points allocated to each assignment for the LECTURE (75% of grade overall)

Assignments	Percentage
Midterm #1	20%
Midterm #2	20%
Cumulative Final Exam (60% new, 40% old)	40%
<i>Story of Life</i> Questions (5 essays total)	10%
Working with the Biological Literature (<i>Science</i> in the classroom)	10%
Total Percentage	100%

Table 2: Points allocated to each assignment for the LAB (25% of grade overall)

Assignments	Percentage
Lab Reports	60%
Quizzes	10%
Oral Presentation of Scientific Paper	10%
Lab Final	10%
Participation/Teamwork	10%
Total Percentage	100%

Table 3: Scale for FINAL letter grade assignments (based on lecture and lab scores combined).

Grade	Points
A	89.5% and higher
B	79.5% to 89.4%
C	69.5% to 79.4%
D	59.5% to 69.4%
F	59.4% and lower

CELL PHONE/SMART WATCH POLICY (MANDATORY)

To prevent cheating and distraction, **all cell phones and smart watches are to be silenced upon entering the classroom and placed face down on the far edge of the desk in front of you for the duration of the class**. You are NOT allowed to touch it/them until class is dismissed. Failure to comply will result in a verbal reprimand (in front of the class) and point deductions from your exam scores: 1 (ONE) point will be deducted for the first offense, 5 (FIVE) points will be deducted for each subsequent failure to comply. There is zero reason for you to be on your phones or smart watches during class. If your phone/watch is actively monitoring an imbedded medical device in your body such as an insulin pump or pacemaker, you need to inform me and an exception will be made.

Lecture Assignments: *Story of Life*

Five essays will be assigned to you to read from the *Story of Life* book over the course of the semester (see schedule). You will read the essays, answer the questions (all answers are to be typed), and submit your

answers to the Dropbox folders that will appear in D2L. Answers are DUE on the day specified on the schedule by NOON. Anything turned in after that time will have points deducted (10% of the earned grade per day).

Lecture Assignments: *Science* in the Classroom

To prepare you for your laboratory presentations of a scientific paper, we will learn how to read and analyze journal articles in class. We will cover articles using *Science* in the Classroom. This is an online learning portal put out by the American Academy for the Advancement of Science, the publishers of the journal *Science*. We will do one guided activity together and then you will do one additional paper in lecture on your own. The work you do in lecture will help you in lab. See schedule for assignment dates. In class discussions will be paired with homework assignments. Assignments are DUE on the day specified on the schedule by NOON. Anything turned in after that time will have points deducted (10% of the earned grade per day).

Lecture Exams

During the semester, there will be 2 in-class midterm exams and 1 cumulative final exam. The final exam will be weighted to the material covered since the second midterm, but it will be cumulative. Material covered in lab is fair game for lecture exams. It is strongly recommended that you study every day for the class as opposed to trying to "cram" prior to the test. The student should be familiar with all information covered in lecture and lab for the exams. It is strongly recommended that students read associated text chapters before the week in which the material will be covered. Every effort will be made to stay ahead of the lab material in lecture, but this is not a guarantee. Material from the *Story of Life* chapters and the *Science* in the Classroom assignments will be included on exams.

Midterms will consist of multiple-choice questions, fill-in or short-answer questions, and critical-thinking questions/problems and generally will not be cumulative. The final exam will be all multiple choice, but will have an analytical component. All exams are TIMED. **Exam dates are listed on the Lecture Schedule and will not be moved.** No make-up midterms will be offered to any person for any reason (I mean it—I do not care why you miss an exam, there are no make-up exams so DO NOT ASK FOR ONE).

All cell phones AND SMART WATCHES must be silenced before the test is handed out and placed face down on the desk in front of you just as they are to be placed every day in lecture. All personal items must be stored at the front of the room so that the exam proctor may use the aisles during the exam. Attempting to cheat on an exam by looking at someone's test is a serious offense and will result in a grade of zero for that exam. Please consult the Student Handbook for process of disciplinary action. Grades will be available as soon as possible. I will not post grades or give them out over the phone or e-mail.

Students with a legitimate, excusable reason for missing a midterm will be given consideration, but NO make-ups will be given. A **substitute score** based on the final will be used to replace the zero received. **Excusable reasons** for missing an exam include: a) extreme and verifiable illness (you must provide doctor/hospital verification; I will not simply take your word for it that you are too ill to attend); b) accident or injury (must present verification); c) MSU sanctioned event (active participant and you must have provided official university documentation BEFORE the exam); and d) extreme family emergency (e.g., funeral the day of the exam; immediate family only). It is important that all exams be completed as scheduled. If it is necessary for a student to miss an exam, the student must notify the professor BEFORE THE START OF THE SCHEDULED EXAM. Any reason for missing the exam that is NOT listed in this paragraph will be deemed un-excused and you will receive a zero for the exam.

University Teams and Organizations

All members of **in-season** sports teams or other campus organizations who will be missing class because of university sanctioned events **MUST** present to me a written statement on university letterhead and signed by a

university official indicating those dates that will be missed because of travel or participation in the university-sponsored event.

Students with Disabilities

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. In accordance with Section 504 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, Midwestern State University endeavors to make reasonable accommodations to ensure equal opportunity for qualified persons with disabilities to participate in all educational, social, and recreational programs and activities. After notification of acceptance, students requiring accommodations should make application for such assistance through Disability Support Services, located in the Clark Student Center, Room 168, (940) 397-4140. Current documentation of a disability will be required to provide appropriate services, and each request will be individually reviewed. **The instructor then needs to be notified by the student of the nature of these accommodations. This notification will take the form of an official letter obtained from DSS by the student and given to the instructor. It is always the responsibility of the student to arrange accommodations with DSS.** Students with disabilities must still take their exams on the same day as the rest of the class. For more details, please go to Disability Support Services.

Campus Policies

For information regarding MSUTexas policies on campus carry, smoking/tobacco usage, alcohol/drugs, attendance, and university code of conduct, see the Student Handbook, which is part of the MSU Portal and website information for students. Areas excluded from concealed carry are appropriately marked, in accordance with state law. Smoking, including vaping, is prohibited on MSUTexas grounds.

Academic Dishonesty

Cheating, plagiarism, and collusion (as well as several other forms of conduct) are all strictly prohibited at MSU. Please read the MSU Student Handbook definitions of cheating, plagiarism, and collusion and MAKE SURE that you do not engage in any of these behaviors. If you are unclear on what may count as cheating, plagiarism, or collusion after reading the material below, please see the instructor or the Dean of Students.

1. The term "**cheating**" includes, but is not limited to: (1) use of any unauthorized assistance in taking quizzes, tests, or exams; (2) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; or (3) the acquisition, without permission, of tests or other academic material belonging to a member of the faculty, staff, or another student.
2. The term "**plagiarism**" includes, but is not limited to, the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgment. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials. Plagiarism also includes the use of someone else's thoughts, words, ideas, or lines of argument in your own work without appropriate documentation (a parenthetical citation at the end and a listing in "Works Cited") whether you use that material in a quote, paraphrase, or summary. It is a theft of intellectual property and will not be tolerated, whether intentional or not.
3. The term "**collusion**" means collaboration with another person in preparing any work offered for credit if that collaboration is not authorized by the faculty member in charge.

Safe Zones Statement

The professor considers this classroom to be a place where you will be treated with respect as a human being regardless of gender, race, ethnicity, national origin, religious affiliation, sexual orientation, political beliefs, age,

or ability. Additionally, diversity of thought is appreciated and encouraged, provided you can agree to disagree. It is the professor's expectation that ALL students consider the classroom a safe environment.

Instructor Drops

According to the MSU Student Handbook, "An instructor may drop a student any time during the semester for excessive absences, for consistently failing to meet class assignments, for an indifferent attitude, or for disruptive conduct." For the purposes of this course, "consistently failing to meet class assignments" includes consistently not turning in assigned work or turning in work that consistently receives a failing grade.

Intellectual Property

By enrolling in this course, the student expressly grants MSU a "limited right" in all intellectual property created by the student for the purpose of this course. The "limited right" shall include but shall not be limited to the right to reproduce the student's work product to verify originality and authenticity, and for educational purposes.

Statement on Generative AI

In an effort to make all PowerPoint slides ADA compliant, generative AI (Google Gemini) was used to facilitate the creation of alternative text for all images. This generative text has been read for clarity and correctness, but corrections are ongoing and periodically the slides will be updated. This is fair warning that all text may not yet be accurate. Because generative AI pulls information from copyrighted sources, you may NOT redistribute these slides nor sell them. Note: I am telling you up front that I used AI; I am not trying to hide it. Because the AI may be wrong, only what I say in lecture and what is printed in the textbook will constitute correct answers on exams and assignments.

Students, however, are NOT allowed to use any generative AI to complete assignments. Generative AI is NOT your work and thus constitutes cheating and potentially plagiarism because you do not know where the AI gets its information. Generative AI crafts the answer for you. Grammar checkers that read your work, highlight problems, and make suggestions to fix them, is NOT generative AI. All work in this class will be submitted online to be scanned for generative AI usage and plagiarism. Use of generative AI and plagiarism will result in zeros for any assignments in which they are found. Note: using an AI scrubber to make your AI generated text sound human is also cheating.

Make Up Work/Tests and Extra Credit

No make-ups will be given for any test or assignment. No extra credit will be given to pull your grade out of a hole.

***Notice:** Changes in the course syllabus, procedure, assignments, and schedule may be made at the discretion of the instructor.

Lecture Schedule

Dates	Lecture Topic/Chapter	Story of Life Cp. Questions DUE	Science in the Classroom DUE
1/20	Course Introduction Chapter 12 Genetics Review	--	--
1/22	Chapter 19 Process of Evolution Intro to <i>Science in the Classroom (Reefs)</i>	--	--
1/27	Cp. 19	--	--
1/29	Cp. 19 and Reefs	--	--
2/3	Chapter 20 Reconstructing Phylogenies	--	--
2/5	Cp. 20 and Reefs	Chapter 2	--
2/10	Cp. 20	--	--
2/12	Chapter 21 Evolution of Genomes Reefs	--	--
2/17	Cp. 21	--	--
2/19	MIDTERM 1 (Cp. 12, 19, 20, 21)	--	Reefs Discussion Questions
2/24	Chapter 22 Speciation	--	--
2/26	Cp. 22	--	--
3/3	Chapter 23 History of Life	Chapter 4	Reefs Data Analysis
3/5	Chapter 52 Biogeography Squid Paper	--	--
3/10	SPRING BREAK	--	--
3/12	SPRING BREAK	--	--
3/17	Cp. 52	--	--
3/19	Cp. 52 and Squid	--	--
3/24	Chapter 53 Populations	Chapter 7	--
3/26	Cp. 53 and Squid	--	--
3/31	Cp. 53	--	--
4/2	HOLIDAY BREAK NO CLASS	--	--
4/7	MIDTERM 2 (Cp. 22, 23, 52, 53)	--	--
4/9	Chapter 54 Species Interactions Squid	--	--
4/14	Cp. 54	Chapter 15	--
4/16	Cp. 54 and Squid	--	--
4/21	Chapter 55 Communities	--	--
4/23	Cp. 55	--	--
4/28	Chapter 56 Ecosystems	--	Squid Discussion Questions
4/30	Cp. 56	Chapter 18	--
5/5	Chapter 57 A Changing Biosphere	--	--
5/7	Cp. 57	--	--
FINAL EXAM	TUESDAY, MAY 12 8:00am – 10:00am	--	--

Lab Schedule (W 1:00-2:50pm and W 3:30-5:20pm)

Date	Lab/Activity	Assignment Due
Jan 21	Labs do not meet	--
Jan 28	Lab Introduction/Safety/Academic Integrity	Signed Safety Sheets and Academic Integrity Pledge
Feb 4	Lab 1: An Introduction to Math in the Biology Laboratory	--
Feb 11	Lab 2: Basic Genetics	Lab Report 1
Feb 18	Lab 3: Genetic Drift and Natural Selection	Lab Report 2
Feb 25	Lab 4: Modeling Sexual Selection	Lab Report 3
Mar 4	Lab 5: Animacules	Lab Report 4
Mar 11	SPRING BREAK – NO CLASS	--
Mar 18	Lab 6: Sampling Methods	--
Mar 25	Lab 7: Big Data	Lab Report 5
Apr 1	Lab 8: Population Ecology in a Meadow	Lab Report 6
Apr 8	Lab 9: Shannon-Weiner Diversity	Lab Report 7
Apr 15	Lab 10: The Red Queen Hypothesis in Playing Cards	Lab Report 8
Apr 22	Journal Article Presentations	Lab Report 9 Presentations
Apr 29	Journal Article Presentations	Lab Report 10 Presentations
May 6	LAB FINAL	--