

# BIOL1214 Life 2: Evolution and Ecology

(4 credit hours combined lecture and lab)

Fall 2024 | MWF 11:00am – 12:00pm | Bolin 209

**Instructor:** Elizabeth A. Machunis-Masuoka, PhD, MA (Dr. M)

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**Office Hours:** M 1:00 – 3:00pm; T 12:00 – 2:00pm; W 8:00 – 10:00am

**Required Text:** The required textbook for this course is *Life: The Science of Biology*, 12th Edition by Sadava et al. (older editions may also be used, but the student is responsible for locating material in the text on their own). Lab protocols appear on D2L and are not available in the bookstore. I do NOT use online quiz/homework programs.

## 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 as follows: 75% of your overall grade will be lecture and 25% of your overall grade will be lab (total: 100%). To get an A in the course, you must get an A in the lecture and an A in the lab.

## Grading scale:

Students must demonstrate a mastery of at least 60% of the material presented to pass the course as evidenced by their grades on the exams and graded assignments. Overall, 75% of your grade is from lecture and 25% is from lab.

The breakdown of percentages in your **lecture grade** is as follows:

Midterms 1 and 2:       25% each (total 50%)  
Cumulative Final Exam: 50% (roughly 60% new material, 40% old material)

The breakdown of percentages in your **lab grade** is as follows:

Quizzes:               20%  
Participation:       10%  
Lab Reports:         60%  
Oral Presentation:   10%

The scale used to assign the **FINAL letter grades** will be as follows:

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

**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.

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).**

**Testing conditions:**

Once an exam has been handed out, students are not allowed to leave the classroom and return. Please make every effort to come to the classroom prepared for the test. All cell phones AND **SMART WATCHES** must be silenced before the test is handed out. If it is necessary for you to wear a hat, the bill must be turned so your face is not obscured during the test. All personal items (this **includes** your phone AND YOUR **SMART WATCH**) 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.

**Make-ups:**

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 within 24 hours of the scheduled exam.

**Cell Phones:**

All cell phones should be turned off before entering the classroom to prevent disturbing the class. No texting in class once lecture begins. On occasion, cell phones will be used in lab, but you will be instructed as to when this is the case. At all other times, cell phones are to be put away and not used.

### **Important Dates:**

Last day for term schedule changes: August 27 – 29, 2024

**Last Day to drop with a grade of “W”: 4:00pm on November 25, 2024** (Note: you must fill out the online drop request; you can’t just stop coming to class!)

### **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.

Please Note: Every effort will be made to adhere to the attached schedule, but circumstances may arise where deviations occur.

## Lecture Schedule

Week	Dates	Lecture Topic
1	8/26	Course Introduction/ <b>Chapter 12</b> Review
	8/28	Chapter 12 Review
	8/30	<b>Chapter 19</b> Process of Evolution
2	9/2	<b>LABOR DAY NO CLASS</b>
	9/4	
	9/6	
3	9/9	
	9/11	
	9/13	<b>Chapter 20</b> Reconstructing Phylogenies
4	9/16	
	9/18	
	9/20	
5	9/23	<b>Chapter 21</b> Evolution of Genomes
	9/25	
	9/27	<b>EXAM 1 (Chapters 12, 19, 20, 21)</b>
6	9/30	<b>Chapter 22</b> Speciation
	10/2	
	10/4	
7	10/7	
	10/9	<b>Chapter 23</b> History of Life
	10/11	
8	10/14	<b>Chapter 52</b> Biogeography
	10/16	
	10/18	
9	10/21	
	10/23	<b>Chapter 53</b> Populations
	10/25	
10	10/28	
	10/30	
	11/1	<b>EXAM 2 (Chapters 22, 23, 52, 53)</b>
11	11/4	<b>Chapter 54</b> Species Interactions
	11/6	
	11/8	
12	11/11	
	11/13	<b>Chapter 55</b> Communities
	11/15	
13	11/18	
	11/20	<b>Chapter 56</b> Ecosystems
	11/22	
14	11/25	
	11/27	<b>THANKSGIVING HOLIDAY</b>
	11/29	
15	12/2	<b>Chapter 57</b> A Changing Biosphere
	12/4	
	12/6	
<b>FINALS</b>	12/9	<b>FINAL EXAM 10:30am – 12:30pm</b>

## Lab Schedule

Lab Meets Wednesday 1:30 – 3:20pm in Bolin 207

Week	Date	Lab Experiment	Lab Assignment Due
1	8/28	Lab Introduction/Safety/Academic Integrity	
2	9/4	Lab 1: General Statistics	
3	9/11	Lab 2: Genotype and Phenotype	Lab Report 1 (1 <sup>st</sup> Draft)
4	9/18	Lab 3: Genetic Drift Simulation	Lab Report 2
5	9/25	Lab 4: Diversity Within and Among Species	Lab Report 3
6	10/2	Lab 5: Cladistics	Lab Report 4
7	10/9	<b>FREE WEEK</b>	
8	10/16	Lab 6: Evolutionary Arms Race	Lab Report 5
9	10/23	Lab 7: Quadrat Sampling Methods (indoor)	Lab Report 6
10	10/30	Lab 7: Quadrat Sampling Methods (outdoor)	
11	11/6	Lab 8: Population Ecology	Lab Report 7
12	11/13	Lab 9: Shannon-Weiner Diversity Index	Lab Report 8
13	11/20	Lab 10: The Red Queen Hypothesis in Playing Cards	Lab Report 1 (2 <sup>nd</sup> Draft) Lab Report 9
14	11/27	<b>THANKSGIVING</b>	
15	12/4	Student Presentations	Lab Report 10

## Basic Lab Information

### **Weekly Quizzes:**

Each week you will be given an in-class quiz testing you on the previous week's lab and the lab you are to do that day. Quizzes will be short answer and in some cases involve math. You should always bring a calculator to class. Quizzes are closed note and you must turn off phones and smart watches and put them away in your bag during the quiz. Quizzes will be 10 to 20 points. The lowest quiz score will be dropped. There are NO make-ups for missed quizzes as lab attendance is mandatory.

### **Lab Reports:**

Each lab will require a write-up of some kind. These lab reports will either be semi-formal or involve answering questions and completing tables/graphs/sketches as part of completing the lab. Information on what is to be turned in as a report appears in each lab packet. Labs have been uploaded to D2L. You are responsible for downloading and printing them to turn in. NOTE: if you do not have your own laptop, there are computer labs on campus. Due dates for lab reports are the week following the day the lab was performed. For each day late (up to 1 week), you will lose 10% of the points you earn on that lab report. For example, if you score an 80/100 on a lab, but turn it in 1 week (7 days) late, you lose 70% of the earned points. Thus, you would lose 56 points, giving you a final score of 24 points. Take-home message: do NOT turn things in late. If students begin to routinely turn things in late, the percent deduction will be doubled for the class (20% loss of points per day). All labs must be the product of your own work; use of AI assistants will result in a zero for the report.

### **Oral Presentations:**

Each student will do an oral presentation in the form of an electronic poster (a PowerPoint template will be provided to you). Each of you will choose a different **endangered ecosystem** to present to the class. You must include the following information on your poster:

1. The name and location of the ecosystem
2. A map highlighting the location of the ecosystem
3. A full description of the ecosystem: composition, communities, species richness and diversity, function in the biosphere, etc.
4. The threat to the ecosystem (human encroachment, climate change, etc.)
5. How much of the ecosystem has been lost and whether the ecosystem can be saved
6. The consequence of loss of the ecosystem to the broader biosphere and humans

You will have a maximum of 10 minutes to present your poster to the class (do NOT simply read to us!!). You must get approval for your ecosystem **no later than** Week 5 of Lab. Only one student per ecosystem. Google "endangered ecosystems" to begin.