

BIOL 4684: Ecology

Fall 2024 (4 credits)

Lecture: Bolin Hall, Room 209

Lab: Bolin Hall, Room 214

Instructor: Dr. Timothy J. Pegg, Assistant Professor, Department of Biology

Contact Information:

Office – Pierce Hall, Room 101

Email – timothy.pegg@msutexas.edu

Office Hours:

Tuesdays, 8:30 - 10:00am

Thursdays, 2:00 - 4:30pm

*Additional times by appointment

Lecture Class Times:

Mondays, Wednesdays and Fridays, 8:00am - 8:50am

Lab Class Times:

Mondays, 1:00pm - 3:50pm

Required Texts:

1. *Ecology: The Economy of Nature, 9th Edition*, by Rick Relyea
 - a. ISBN-13: 978-1-319-36932-3

Course Description:

Ecology is an upper-level course designed for students majoring in the natural sciences or with an interest in. An examination of general ecological principles will be conducted during this course with a focus on biomes, physical environment, energy flows, population dynamics, species and community interactions, and the diversity of life.

Course Objectives:

1. Identify the biomes within Earth's biosphere and recognize their properties and ecological significance.
2. Understand the flow of energy through ecosystems and how it influences ecological relationships.
3. Describe theories of diversity and how this relates to the development of life on Earth.

4. Investigate the forms of ecological relationships that occur between species, populations, and community.
5. Develop skills and techniques relevant to ecological field research and inquiry

Course Policies:

Excused Absences

Email me at least 24 hours before a planned event or absence. You will be responsible for the work and material we cover in class. Final Exams will not be excused unless an extraordinary circumstance has occurred.

Absences Due to Co-Curricular Events or Religious Observances

Classes missed due to participation in college-sponsored co-curricular events or college-recognized religious observances are considered excused absences provided appropriate procedures are followed. The student must notify the instructor at the earliest possible time before the absence and arrange to make up missed work as defined by the instructor's syllabus.

Unexcused Absences

If a student has an unexcused absence from class on the day of an exam or quiz normally a make-up will not be allowed; however, the instructor may make exceptions under extraordinary circumstances. There will be no make-ups for missed quizzes.

Class Dismissal

The instructor may dismiss students from lecture and lab sections due to instances of significant disrespect, disruption, discriminatory or threatening behaviors. Return to class will be prohibited prior to meeting with the instructor and Biology Department Chair to discuss the incident. A second instance of dismissal will result in permanent removal from the course and an automatic assignment of an "F" grade for lecture and lab. Immediate removal from the course and assignment of an "F" grade will result from severe instances of class syllabus and MSU College policy violations, regardless of the number of previous instances.

Desire-to-Learn (D2L)

D2L will be used as a means of communicating, as a location where you can access resources (ex. PowerPoints) that are required or useful for success in the course, and where you will submit some required work products. You can log into D2L through the MSU Homepage. If you experience difficulties, please use links to technical help found in the D2L site.

Tentative Grading Policy

Quizzes	=	10 points/ea. (300 total)
Lecture Exams	=	100 points/ea. (300 total)
Final Exam	=	150 points
Lab Assignments	=	15 points/ea. (120 total)
Lab Exam	=	100 points

Total Possible	=	970 points

Grading Scale		
90 - 100%	=	A
80 - 89.9%	=	B
70 - 79.9%	=	C
60 - 69.9%	=	D
0 - 59.9%	=	F

Exams will cover materials from lectures and chapter readings. Material for the Final Exam will be drawn from previous exam question topics and chapters covered after comprehensive over the entire semester.

Quizzes will be posted to the D2L Ecology Lecture page and will be due by the designated deadline.

Lab assignments will consist of handouts, written and/or verbal instructions provided by the professor. Completed lab assignments will be due by the start of subsequent lab period (submitted through D2L) unless otherwise specified by the instructor.

A lab exam will be conducted during the final laboratory session. This exam will test your knowledge of applied and conceptual ecology knowledge gained during lab.

Late Assignments

Late assignments and quizzes will not be accepted unless prior approval is obtained by the instructor or teaching assistant(s) at least 48 hours prior to a given deadline. Unexcused absence from a lab will result in a grade of "0" for that session. Exceptions may be made regarding extraordinary circumstances.

Extraordinary circumstances

In the case of extraordinary circumstances (documented medical emergency, natural disasters, etc.), the instructor reserves the right to resolve grading issues on an individual basis and in accordance with criteria stipulated in the 2023-2024 MSU Student Handbook.

Electronics in Class

Cell phones, computers and other electronic devices must be turned off in class unless prior permission has been obtained by the instructor, they serve as accommodation to an impairment or disability, or must remain active as a requirement for an occupation (EMT, another medical professional, etc.). Failure to abide by these restrictions may result in confiscation of the device until the end of class, or removal from the lecture or lab session.

Usage of Artificial Intelligence

Students submitting written documents, data or other inputs synthesized from artificial intelligence software (ex. ChatGPT, Jasper, Google Bard, etc.) will be given a “0” on assignments and may be failed from the course in accordance with MSU’s policies on academic dishonesty and plagiarism.

Student Expectations:

Students have responsibilities for achieving the course objectives. Learning is a process that requires skills and strategies, and you must actively develop those that work best for you. In this course the foundation of academic success includes:

- Attending lecture and lab sessions
- Reading the assigned lecture chapters and laboratory handouts
- Submission of assignments by their assigned deadlines
- Asking your professor (Dr. Timothy Pegg) for assistance and clarification of topics in a timely manner (e.g. **not** the day before an exam)

University Policies:Campus Carry Rules/Policies

Effective August 1, 2016, the Campus Carry law (TX Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. The new Constitutional Carry law does not change this process. Concealed carry still requires a License to Carry permit, and openly carrying handguns is not allowed on college campuses. For more information, visit [Campus Carry](#).

Active Shooter Information

The safety and security of our campus is the responsibility of everyone in our community. Each of us has an obligation to be prepared to appropriately respond to threats to our campus, such as an active aggressor. Please review the information provided by MSU Police Department regarding the options and strategies we can all use to stay safe during demanding situations. For more information, visit [Safety / Emergency Procedures](#). Students are encouraged to watch the video entitled “*Run. Hide. Fight.*” which may be electronically accessed via the University police department’s webpage: [“Run. Hide. Fight.”](#)

Smoking/Tobacco Policy:

University policy prohibits the use of tobacco products in any building owned or operated by Midwestern State University. Adult students may smoke only in the outside designated-smoking areas at each location.

Alcohol and Drug Policy:

To comply with the Drug Free Schools and Communities Act of 1989 and subsequent amendments, students and employees of Midwestern State University are informed that strictly enforced policies are in place which prohibit the unlawful possession, use or distribution of any illicit drugs, including alcohol, on university property or as part of any university-sponsored activity. Students and employees are also subject to all applicable legal sanctions under local, state, and federal law for any offenses involving illicit drugs on university property or at university-sponsored activities. Please refer to the **2023-2024 Student Handbook** for further information.

Academic Dishonesty:

Dishonesty within the academic community is a profoundly serious matter because dishonesty destroys the basic trust necessary for a healthy educational environment. Academic dishonesty is any treatment or representation of work as if one were fully responsible for it when it is in fact the work of another person. Academic dishonesty includes cheating, plagiarism, theft, or improper manipulation of laboratory or research data or theft of services. A substantiated case of academic dishonesty may result in disciplinary action, including a failing grade on the project, a failing grade in the course, removal from the course, and/or expulsion from Midwestern State University. Please reference the **2023-2024 Student Handbook** for additional information.

Services for Students 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 disability will be required in order to provide appropriate services, and each request will be individually reviewed. For more details, please go to Disability Support Services.

Grade Appeal Process

To appeal a grade, consult the Midwestern State University 2023-2024 Student Handbook and visit the following checklists: the [Grade Appeal Checklist](#) provides the timeline for appealing from the instructor to the next in line (dean of the college). The [Academic Honesty Checklist](#) describes the timeline for appealing from the instructor to the next in line (chair of department) and who must be notified of academic honesty infractions.

Tentative Lecture Schedule:

Week	Day	Date	Topic	Chapter
1	M	8/26	Introduction to Ecology	1
1	W	8/28	Climates & Biomes	2
1	F	8/30	Climates & Biomes	2
2	M	9/2	No Class – Labor Day	---
2	W	9/4	Challenges of Living in Aquatic Environments	3
2	F	9/6	Challenges of Living in Aquatic Environments	3
3	M	9/9	Challenges of Living in Terrestrial Environments	4
3	W	9/11	Challenges of Living in Terrestrial Environments	4
3	F	9/13	Adaptations to Variable Environments	5
4	M	9/16	Adaptations to Variable Environments	5
4	W	9/18	Evolutionary Ecology	6
4	F	9/20	Evolutionary Ecology	6
5	M	9/23	Life Histories	7
5	W	9/25	Life Histories	7
5	F	9/27	Exam #1	
6	M	9/30	Reproductive Strategies	8
6	W	10/2	Reproductive Strategies	8
6	F	10/4	Social Behaviors	9
7	M	10/7	Social Behaviors	9
7	W	10/9	Population Distributions	10
7	F	10/11	Population Distributions	10
8	M	10/14	Population Growth & Regulation	11
8	W	10/16	Population Growth & Regulation	11
8	F	10/18	Population Dynamics Over Time & Space	12
9	M	10/21	Population Dynamics Over Time & Space	12
9	W	10/23	Predation & Herbivory	13
9	F	10/25	Predation & Herbivory	13
10	M	10/28	Parasitism & Infectious Diseases	14
10	W	10/30	Parasitism & Infectious Diseases	14
10	F	11/01	Exam #2	
11	M	11/04	Competition & Mutualism	15-16
11	W	11/06	Mutualism	15-16
11	F	11/08	Community Structure	17
12	M	11/11	Community Structure	17
12	W	11/13	Community Succession	18

Tentative Lecture Schedule (continued):

12	F	11/15	Movement of Energy in Ecosystems	19
13	M	11/18	Movement of Elements in Ecosystems	20
13	W	11/20	Movement of Elements in Ecosystems	20
13	F	11/22	Landscape Ecology and Global Biodiversity	21
14	M	11/25	Landscape Ecology and Global Biodiversity	21
14	W	11/27	No classes – Thanksgiving Holiday	---
14	F	11/29	No classes – Thanksgiving Holiday	---
15	M	12/2	Conservation of Global Biodiversity	22
15	W	12/4	Conservation of Global Biodiversity	22
15	F	12/6	Exam #3	

Final Exam: Wednesday, December 11th, 8:00am – 10:00pm

Tentative Lab Schedule:

Safety is as important to successful lab experience as engaged attendance. To that end, **10% will be deducted** from each lab score for failure to be ready on time, for failure to wear minimal personal protective equipment, and/or for bringing food or drink into the lab without prior instructor permission.

Lab handouts may include pages that will be turned in for credit.

Questions based on lab activities may be incorporated into Lecture Exams.

The schedule of laboratory activities is listed below. Adjustments to the schedule may be made, as necessary.

Week	Dates	Topic
1	8/26	No lab - First Day of Classes
2	9/2	No Class – Labor Day
3	9/9	Introduction to Ecology, Quantitative Analysis
4	9/16	Soil
5	9/23	Water
6	9/30	Botany & Plant Allelopathy Experiment
7	10/7	Applied Field Techniques - Field Trip: Red River
8	10/14	Litter Analysis
9	10/21	Human Population
10	10/28	Demography - Field Trip: Cemetery
11	11/4	Energy & Nutrition
12	11/11	Elemental Cycles
13	11/18	Biological Diversity - Field Trip: Lake Arrowhead
14	11/25	Natural Selection
15	12/2	Lab Exam