

BIOL 2306: Environmental Biology

Lecture: 3 Semester Credit Hours
Online – Open LMS

BIOL 2101: Environmental Biology Lab

Tuesday
Thursday

Lab: 1 Semester Credit Hours

CLARENDON COLLEGE
Division of Science and Health
Course Syllabus
Summer 2026

Instructor: Dr. Edward Caraway

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Office Hours: Pampa

Office hours by appointment.

The “Blackboard Journal” system within the online platform is the main method you should use to contact me. I will make every effort to check the course website every weekday and respond to your message requests within 24 hours on business days.

Instructor’s Plan for Regular and Substantive Interaction

Students can expect regular and timely interaction with the instructor throughout the course. All assignments have posted due dates in the calendar, syllabus, or module. Communication will occur through email, announcements, discussions, office hours, and virtual meetings as needed.

BIOL 2306 Course Description: Principles of environmental systems and ecology, including biogeochemical cycles, energy transformations, abiotic interactions, symbiotic relationships, natural resources and their management, lifestyle analysis, evolutionary trends, hazards and risks, and approaches to ecological research.

Co-requisite: BIOL 2106 Environmental Biology Lab

BIOL 2106 Course Description: This laboratory-based course accompanies BIOL 2306, Environmental Biology. Laboratory activities will reinforce principles of environmental systems and ecology, including biogeochemical cycles, energy transformations, abiotic interactions, symbiotic relationships, natural resources and their management, lifestyle analysis, evolutionary trends, hazards and risks, and approaches to ecological research.

Pre-/Co-requisite: BIOL 2306 Environmental Biology

Required Instructional Materials Supplies: This course utilizes chapters from multiple free online textbooks (OER), and no purchase is required. All reading materials will be provided as printed copies or embedded PDFs within Blackboard. Lab activities will be completed using instructor-provided materials, documents, and case studies.

Methods of Instruction: This course will utilize readings from the text, PowerPoint presentations, forum discussions, audio-visual materials, and research.

Student Rights and Responsibilities: The full Student Rights and Responsibilities policy has been downloaded as a PDF and is available as a viewable document within Blackboard.

Course Objectives

In accordance with recommendations from the Texas Higher Education Coordinating Board, all life and physical science courses at Clarendon College will address the following core objectives:

- **Critical Thinking Skills** – including creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.
- **Communication Skills** – including effective written, oral, and visual communication.
- **Empirical and Quantitative Skills** – including application of scientific and mathematical concepts.
- **Teamwork** – including the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.

Class lectures will be based on the book chapters, but not all of the material in the text will be covered in class. **You are, nevertheless, responsible for reading the text.** Further, supplemental material may be presented that is not in the book, and thus it is essential that you attend the class regularly.

Supplies: Textbook, Lab manual, composition book, pencils, and latex or vinyl gloves.

Student Rights and Responsibilities: Student Rights and Responsibilities are listed on the College website at:

<http://www.clarendoncollege.edu/Resources/Student%20Services/StudentRightsResponsibilities.pdf>

Methods of Instruction: This course will utilize lecture/discussion, audio-visual materials, the student portal, and individualized lab instruction.

In accordance with recommendations from the Texas Higher Education Coordinating Board, all life and physical science courses at Clarendon College will address the following core objectives:

- **Critical Thinking Skills** – including creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.
- **Communication Skills** – including effective written, oral, and visual communication.
- **Empirical and Quantitative Skills** – including application of scientific and mathematical concepts.
- **Teamwork** – including the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.

Student Learning Outcomes for Lecture:

Learning Outcomes Upon successful completion of this course, students will:

- Explain the structure and impact of biogeochemical cycles.
- Describe energy transformations across trophic levels.
- Illustrate abiotic/biotic interactions and symbiotic relationships.
- Identify various types of natural resources, human impact on these resources, and common resource management practices.
- Quantify and analyze the impact of lifestyle on the environment.
- Depict evolutionary trends and adaptations to environmental changes.
- Describe environmental hazards and risks and the social and economic ramifications.
- Describe ecological and statistical techniques and approaches used in the study of environmental biology

Student Learning Outcomes for Lab:

Upon successful completion of this course, students will:

- Apply scientific reasoning to investigate questions and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
- Use critical thinking and scientific problem solving to make informed decisions in the laboratory.
- Communicate effectively the results of scientific investigations.
- Explain the structure and impact of biogeochemical cycles.
- Describe energy transformations across trophic levels.
- Illustrate abiotic/biotic interactions and symbiotic relationships.
- Identify various types of natural resources, human impact on these resources, and common resource management practices.
- Quantify and analyze the impact of lifestyle on the environment.
- Depict evolutionary trends and adaptations to environmental changes.
- Describe environmental hazards and risks and the social and economic ramifications.
- Describe ecological and statistical techniques and approaches used in the study of environmental biology

Communication Skills

- Describe the reasoning processes applied to scientific investigations and thinking.

Empirical and Quantitative Skills

- Describe the structure of cell membranes and the movement of molecules across a membrane.
- Be able to apply scientific reasoning to investigate questions, and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.

Teamwork

- Communicate effectively the results of investigations.
- Use critical thinking and scientific problem-solving to make informed decisions in the laboratory.

Grading Policies: You will receive one letter grade for BIOL 2306 (3 hours) and one letter grade for BIOL 2106 (1 hour). That grade comes from four components: class participation, your lecture notebook, lecture exams, and a laboratory grade.

Grading Policies: You will receive one letter grade for BIOL 2301 and one letter grade for BIOL 2101. Those grades come from the components described below.

BIOL 2306 Grading Policies: Human Anatomy and Physiology I Lecture

1. **Class participation will count as 10%** of your final course grade.
 - a. This grade comes from your participation in class discussions and exercises.
 - i. If you choose not to participate in class discussions, you will receive no credit.
 - b. For every three unexcused absences (either to lecture or lab) you will have 10 points deducted from your class participation grade.
 - i. If you leave during class, you will receive an unexcused absence.
 - ii. If you arrive late to class, you will receive an unexcused absence.
 - iii. If you are asked to leave class due to disrespectful behavior, you will receive an unexcused absence.
2. **Pop Quizzes will count as 10%** of your final course grade.
 - a. Students will be given quizzes that will include information from the previous lecture and topics from the assigned reading.
3. **Your Lecture Assignments will count as 20%** of your final course grade.
 - a. Assignments will be given out during the lecture periods and must be neatly submitted in class or via email.
 - i. Completeness
 - ii. Neatness

4. **Lecture exams will count as 60%** of your final course grade.
 - a. Students will not be allowed to take exams until they have signed a course contract.
 - b. All lecture tests, including the final, will be weighted equally.
 - c. Each test covers the material covered since the last test (not comprehensive).
 - d. The tests will utilize a variety of question formats (objective, matching, multiple choice, true/false, etc.)
 - e. I will drop your lowest lecture test grade, excluding the final which must be counted.
 - f. You will take these exams online

BIOL 2106 Lab grading:

1. **Class participation will count as 15%** of your final lab grade.
 - a. This grade comes from your participation in lab discussions and exercises.
 - i. If you choose not to participate in lab discussions, you won't receive any credit.
 - b. For every unexcused absence you will have 5 points deducted from your class participation grade.
 - i. If you leave during lab, you will receive an unexcused absence.
 - ii. If you arrive late to lab, you will receive an unexcused absence.
 - c. If you are asked to lab class due to disrespectful behavior, you will receive an unexcused absence.
2. **Lab quizzes will count as 45%** of your final lab grade.
 - a. Short quizzes will be given each week during the first 15 minutes of lab.
 - b. If you come too late to lab, you will receive a zero on that quiz.
 - c. The weekly quizzes will mostly cover the material from the previous lab, but will include at least 1 question about this week's lab. Please read ahead and come to lab prepared.
 - d. At the end of the semester, I will drop your lowest 2 weekly lab quizzes.
3. **Lab practicals will count as 40%** of your final lab grade.
 1. You will take 3 practical exams noted on the syllabus.
 2. These exams are equally weighted and non-comprehensive.

Grading Scale for the course:

90% - 100%	A
80% - 89%	B
70% - 79%	C
60% - 69%	D
59% and below	F

Academic Integrity: An Excerpt from Clarendon College's Student Handbook

Failure to comply with lawful direction of a classroom instructor is a disruption for all students enrolled in the class. Cheating violations include, but are not limited to: (1) obtaining an examination, classroom activity, or laboratory exercise by stealing or collusion; (2) discovering the content of an examination, classroom activity, laboratory exercise, or homework assignment before it is given; (3) using an unauthorized source of information during an examination, classroom activity, laboratory exercise, or homework assignment; (4) entering an office or building to obtain unfair advantage; (5) taking an examination for another person; (6) completing a classroom activity, laboratory exercise, homework assignment, or research paper for another person; (7) altering grade records; (8) using any unauthorized form of electronic communication device during an examination, classroom activity, or laboratory

exercise; (9) Plagiarism. Plagiarism is the using, stating, offering, or reporting as one's own, an idea, expression, or production of another person without proper credit.

Disciplinary actions for cheating in a course are at the discretion of the individual instructor. The instructor of that course will file a report with the Executive Vice President of Academics and Student Affairs when a student is caught cheating in the course, whether it be a workforce or academic course. The report shall include the course, instructor, student's name, and the type of cheating involved. Students who are reported as cheating to the Executive Vice President of Academics and Student Affairs of Instruction more than once shall be disciplined by the Executive Vice President of Academics and Student Affairs. The Executive Vice President of Academics and Student Affairs will notify all involved parties within fourteen days of any action taken.

Classroom Conduct

I will show you the respect you deserve as a student. I, in return, expect respectful behavior from you. Because the following actions cause disruption in the classroom and therefore affect the ability of students to learn, I have strict policies concerning them. Disrespectful behavior on your part will result in deductions from your class participation grade.

Disrespectful behavior includes...

- **Arriving late.**
- **Leaving the room during class time.** Plan restroom visits before or after class—not during class. If special needs exist, please make prior arrangements.
- **Using electronic communication devices.** This includes cell phones, pagers, iPods etc. These are not allowed during class time. If special needs exist, please make prior arrangements.
- **Sleeping in class.**
- **Talking in class.** Class time is not the time to visit with your fellow classmates. If you do, I will ask you to leave the classroom.
- **Using headphones.** If you do, I will ask you to leave the classroom.
- **I do NOT allow abusive, obscene, or offensive clothing, jokes, or behavior.**

Class Policies:

- 1. Absences:** Please take class attendance seriously. You are here to learn all you can learn, to build a body of knowledge to help you in your career and/or to give you satisfaction in the future. Students who are motivated come to class. ***You are responsible for the material covered in class (lecture or lab) even if you are absent.*** *Unexcused absences will count against your class participation grade as discussed in the grading policies.*
- 2. Excused absences:** Make-ups for tests will be allowed *only* if absences are excused. Excused absences can result from...
 1. illness on the part of the student
 2. severe illness or death in your *immediate* (not extended) family
 3. college sanctioned extracurricular events
 4. unfavorable weather conditions that prevent students from reaching the collegeIf you wish for your absence to be excused, you should telephone or e-mail me *in advance* of the absence (leave a message if necessary). Even in emergencies, it usually is possible for you to get word to me about an absence. When you return, you must furnish proof of the reason for your absence if you wish for it to be excused.
- 3. Make-up work:** Late or unexcused work will not be accepted. Students who have excused absences **MUST** let me know **before** the test is given that we need to schedule a make-up. In most cases, the tests must be taken PRIOR to the absence in order to receive full credit. ****If you take the test after it has been given to the class, you will receive a 10% penalty per school day that passes until you take the make-up.**** To avoid the penalty, **MAKE SURE YOU TAKE A MAKE-UP TEST BEFORE YOU LEAVE.**

4. **There will be NO make-up lab practicals.** Because these tests involve practical sections, they can't be set up time & again. If you miss one of these tests, you will have to take a significantly harder essay test. The take home message is: **PLAN TO ATTEND THESE PRACTICALS!**
5. **Final Exams:** Students must take a final for each of their academic courses. The schedule of final exam times is published at the beginning of the semester. Do not make plans to leave school before your scheduled final exam. I will not give any early finals except in extreme emergencies after students have provided documentation of said emergency.
6. **Scholastic Honesty:** I adhere to a strict policy regarding academic honesty. Anyone who is dishonest in any way will receive a zero on that assignment or exam with no opportunity to make up the zero and may be dropped from the course with a grade of F. That student, if allowed to remain in the course, will not be allowed to receive any extra credit points from the time of the infraction through the remainder of the course. Furthermore, that student will not be allowed to drop their lowest quiz grade or exam grade. A second act of dishonesty will result in an F for the course. Note that dishonest behavior includes both the act of copying someone else's work as well as allowing someone to copy your work. Both students are equally guilty and will be equally punished.
7. **Electronic Communication/Entertainment Devices/Laptops:** Below is an excerpt from Clarendon College Policy 1541.

...Cell phones, pagers, and other personal electronic devices must be off and out of sight in classrooms, laboratories, the library, study spaces, and other academic settings and during such events as plays, concerts, lectures, and College ceremonies...These electronic devices may be turned on and set on silent mode only with the expressed consent of the instructor...faculty members may have individual policies related to cell phones, pagers, and other personal electronic devices outlined in their syllabi...(that) may include penalties for violation...

The use of cell phones, iPods, other electronic communication or entertainment devices, or laptops is prohibited unless you have made prior arrangements with the instructor. An offense will result in the device being taken up.
8. **Accommodations:** Clarendon College provides reasonable accommodations for persons with temporary or permanent disabilities. Should you require special accommodations, it is your responsibility to notify the Office of Student Services (806-874-3571 or 800-687-9737). We will then work with you to make whatever accommodations we need to make.
9. **Withdrawal:** If you decide that you are unable to complete this course or that it will be impossible to complete the course with a passing grade, you may drop the course and receive a "W" on your transcript instead. Withdrawal from a course is a formal procedure that you must initiate. If you do not go through the formal withdrawal procedure, you will receive a grade of "F" on your transcript.

A student is permitted to drop a course if he/she obtains an official drop slip from the office and has the instructor sign the slip before the 12th class week.

Remember, a student is only allowed to drop the same class twice before he/she will be charged up to triple the tuition amount for taking the class a third time or more. Furthermore, beginning with the Fall 2007 semester, students in Texas may only drop a total of 6 courses throughout their entire undergraduate career. After the 6, he/she will no longer be able to withdraw from any classes.

If you think you need to drop this course, please talk with me about it first. It is possible that there is something you can do to still pass the course. Don't hurt your chances for a passing grade in the course by not attending labs or taking exams before we have discussed your situation.

Environmental Biology : Course Calendar and Outline – Summer 2026				
May 19	Syllabus and Welcome			
May 26	Climate Change	C:N Ratio		
June 2	Climate change	Soil Properties		
June 9	– Exam 1	Food Webs		
June 11	Ecosystems and Human Impact	Keystone Pipeline		
June 18	Exam 2	Lab Practical		
Jun 25	Energy	Carbon Cycle		
July 2	Exam 3	Carbon sequestration		
Jul 9	Pollution	Nitrogen Cycle - eutrophication		
July 16	Pollution continued	Urban Planning		
July 23	Population Ecology	Lab Practical Final		
July 30	Review for Final			
August 3	Final Exam			