

BIOL 1306: Biology for Science Majors I

Lecture: 3 Semester Credit Hours

BIOL 1306.565 Thursday 08:00 – 10:45

BIOI 1106: Biology for Science Majors I Lab

Lab: 1 Semester Credit Hours

BIOL 1106.565 Thursday

Clarendon College
Division of Science and Health
Course Syllabus
Fall 2024

Assistant Professor: Dr. Edward Caraway

Office: MKBC 107

E-mail: edward.caraway@clarendoncollege.edu

Mailing Address: Clarendon College, P.O. Box 968, Clarendon, TX 79226

Office Hours:Clarendon Pampa MWF 8:00 am – 9:00 am, 3:30 – 5:00 pm
TR 11:30 am – 1:00 pm

Course Description: This course is an introduction to the fundamental principles of Biology. Lecture material addresses biological molecules, cell structure and function, photosynthesis, cellular respiration, DNA, cellular reproduction, genetics, principles of evolution, and systematics. Laboratory involves techniques employed in microscopy, cell anatomy recognition, mitosis and meiosis comprehension, genetic problem solving, construction of a dichotomous key, and animal breeding.

Statement of Purpose: Biology for Science Majors I partially satisfies the requirements for the Associates Degree at Clarendon College and is designed for transfer to a senior college.

Required Texts: **Biology 2e** from OpenStax, Print ISBN 1947172514, Digital ISBN 1947172522, www.openstax.org/details/books/biology-2e

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, composition notebook, and pencils.

Methods of Instruction: This course will utilize lecture/discussion, audio-visual materials, 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: Upon successful completion of Biology I, the student should demonstrate these core objectives by being able to...

Critical Thinking Skills

- Identify the major phyla of life with an emphasis on animals, including the basis for classification, structural and physiological adaptations, evolutionary history, and ecological significance.
- Compare different sexual and asexual life cycles noting their adaptive advantages.

Communication Skills

- Describe phylogenetic relationships and classification schemes.
- Describe basic animal physiology and homeostasis as maintained by organ systems.

Empirical and Quantitative Skills

- Describe modern evolutionary synthesis, natural selection, Mendelian inheritance, micro and macroevolution, and speciation.
- Illustrate the relationship between major geologic change, extinctions, and evolutionary trends.

Student Learning Outcomes for Lab: Upon successful completion of Biology II, the student should demonstrate these core objectives by being able to...

Critical Thinking Skills

- Identify the major phyla of life with an emphasis on animals, including the basis for classification, structural and physiological adaptations, evolutionary history, and ecological significance.
- Describe basic animal physiology and homeostasis as maintained by organ systems.
- Compare different sexual and asexual life cycles noting their adaptive advantages.

Communication Skills

- Distinguish between phylogenetic relationships and classification schemes.
- Illustrate the relationship between major geologic change, extinctions, and evolutionary trends.

Empirical and Quantitative Skills

- Demonstrate knowledge of modern evolutionary synthesis, natural selection, Mendelian inheritance, micro and macroevolution, and speciation.
- 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 1306 and one letter grade for BIOL 1106. That grade comes from the components described below.

BIOL 1306: Biology for Science Majors 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 won't receive any credit.
 - b. For every three unexcused absences you will have 10 points deducted from your class participation grade in lecture.
 - 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 Biology Presentation will count as 20% of your final course grade.**

- a. During lab, after the lab quiz, students will complete a plant/animal presentation for 3 to 5 minutes.
 - b. The instructor will hand out a schedule of presentations.
- 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 on a **scantron, form no.882-E** (the long skinny one with 50 questions on each side).
 - i. These scantrons are on sale in the bookstore and in the office.
 - ii. These exams MUST be taken in PENCIL.
 - g. During the exams, electronic communication devices are NOT allowed, and both hands MUST remain on the desktop, in clear view.

BIOL 1106: Biology for Science Majors I Lab

- 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.**
- a. You will take a midterm practical exam and a final practical exam in lab.
 - b. These exams are equally weighted and non-comprehensive.

Grading Scale for the lecture and lab:

90% - 100%	A
80% - 90%	B
70% - 80%	C
60% - 70%	D
50% and below	F

Grievance/Appeals

If you have a dispute concerning your grade or policies in this class, it is the student's responsibility to contact the instructor to discuss the matter. Should things remain unresolved, please follow the procedures described in the Clarendon College Student Handbook or College Policy Manual.

Academic Integrity

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 Dean of Instruction 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 Dean of Instruction more than once shall be disciplined by the Dean. The Dean will notify all involved parties within fourteen days of any action taken.

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 midterm or final.** 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 TWO DAYS!**
- 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. 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:** 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, or other electronic communication or entertainment devices is prohibited unless you have made prior arrangements with the instructor. An offense will result in the device being taken up.

8. **Accommodations:** Contact Janean Reish Directly at 806.874.4837 or Janean.reish@clarendoncollege.edu. 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. 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.
The last day to withdraw from this course with a "W" is Friday, November 14, 2024.
10. Student Rights and Responsibilities are listed on the College website at:
<http://www.clarendoncollege.edu/Resources/Student%20Services/StudentRightsResponsibilities.pdf>

Biology for Science Majors I

Course Outline: The essence of life is change and so too this syllabus. As situations in the classroom and laboratory arise, modifications may have to be made, particularly regarding the course calendar. All attempts will be made to keep these changes to a minimum.

Week of	Lecture Topics	Lab Activities
Aug 26	Syllabus & Introduction <i>Fri., Sept. 6 - last day to register and/or add/drop</i>	No Lab
Sept 2	Unit 1. The Cellular Foundation of Life Chapter 1: Study of Life	Lab Safety & Protocol
Sept 9	Chapter 2: Chemistry of Life	Scientific Method – exercise and Experimental Design
Sept 16	Chapter 3: Biological Macro Molecules	Taxonomy – Classification of Animals Lab Building Dichotomous Keys
Sept 23	Chapter 4: Cell Structure Chapter 5: Plasma Membranes	NOVA ScienceNow Episode – Where did we come from
Sept 30	How Cells Obtain Energy Chapter 6: Metabolism Chapter 7: Cellular Respiration	Cyclosis in Elodea &
Oct 7	Chapter 8: Photosynthesis	Chloroplasts those green little beauties
Oct 14	Unit 2. Cell Division and Genetics Chapter 10: Reproduction at the Cellular Level Chapter 11: Meiosis and Sexual Reproduction	Plants and their Life cycles
Oct 21	Chapter 13: The Cellular Basis of Inheritance	Mendel's Laws: Their Application to Solving Genetics Problem
Oct 28	The Cellular Basis of Inheritance	Ex 7: Mitosis & Meiosis
NOV3	Chapter 12: Mendel's Experiments	Ex 8: Genetics Problems &
Nov 10	Molecular Biology and Biotechnology	Gregor Mendel Paper
Nov 17	Molecular Biology: Chapters 14-17	Central Dogma: DNA – RNA – Protein synthesis Game
Nov 17	Biotechnology	Lab Final
Nov 20	Thanksgiving Holiday – College Closed	
Dec 9	Final Exam	

