BIOL 1306: Biology for Science Majors I
3 Semester Credit Hours
BIOL 1106: Biology for Science Majors I Lab
1 Semester Credit Hour

CLARENDON COLLEGE
Division of Science and Health
Course Syllabus
Fall 2023

Lecture: Monday - Friday 10:45 AM – 11:46 PM

Lab: Monday - Friday 12:50 PM – 12:35 PM

Instructor: Kelli Bird
Office Hours and Location: M-F 9:15-10:05 AM, Wheeler High School
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BIOL 1306 Course Description: This course is an introduction to the fundamental principles of Biology. Class material addresses biological molecules, cells structure and function, photosynthesis, cellular respiration, DNA, cellular reproduction, genetics, principles of evolution, and systematics.

BIOL 1106 Course Description: Laboratory involves techniques employed in microscopy, cell anatomy recognition, metabolism experiments, mitosis and meiosis comprehension, genetic problem solving, DNA extraction, and construction of a dichotomous key.

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

BIOL 1306 Required Texts: *Concepts of Biology* textbook authored and published by OpenStax College (License: CC-BY 4.0). Textbook material can be downloaded at www.openstaxcollege.org. This course also includes additional content created by BNED and other third-party sources under CC-BY 4.0 Attribution License. The textbook does not have to be printed as it is available as an e-text within the Barnes and Noble Loud Cloud platform.

BIOL 1106 Required Texts: Laboratory activities will be provided during class. No textbook is required.

Supplies: Students are required to bring textbook, 3-ring binder for notes, index cards, pencils, colored pencils, and latex/nitrile gloves for dissection.

Methods of Instruction: This course will utilize lecture/discussion, audience response, audio-visual materials, and individualized laboratory instruction.

Students Rights and Responsibilities:
http://www.clarendoncollege.edu/Resources/Student%20Services/StudentRightsResponsibilities.pdf

Core Objective Statement: 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: Upon successful completion of Human Anatomy & Physiology I, the student should demonstrate these core objectives by being able to…

Critical Thinking Skills

- Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.

Communication Skills

- Describe the characteristics of life and the basic properties of substances needed for life.
- Describe the reasoning processes applied to scientific investigations and thinking.
- Describe human physiology and homeostasis as maintained by organ systems.

Empirical and Quantitative Skills

- Describe the structure of cell membranes and the movement of molecules across a membrane.

Student Learning Outcomes for Lab: Upon successful completion of Human Anatomy & Physiology I, the student should demonstrate these core objectives by being able to…

Critical Thinking Skills

- Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins
- Describe the characteristics of life and the basic properties of substances needed for life.
- Describe human physiology and homeostasis as maintained by organ systems.

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 1306 and one letter grade from BIOL 1106. That grade comes from the components described below.

BIOL 1306 Grading Policies

1. **Class participation and daily activities will count as 20%** 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. **Quizzes will count as 20%** of your final course grade.
    a. Each quiz covers the material covered since the last test (not comprehensive).
    b. The tests will utilize a variety of question formats (objective, matching, multiple choice, true/false, etc.)
    c. Quizzes must be taken in class in the presence of the instructor.

3. **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.

BIOL 1106 Grading Policies:

1. **Lab participation and forum discussions 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 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. **Lab reports and daily exercises will count as 45%** of your final grade.
    a. This grade comes from your accurate completion of lab reports and exercise questions.
        i. If you choose not to complete lab reports, you will receive no credit.
    b. All lab reports, exercise questions, and quizzes will be weighted equally.

3. **Lab practicals will count as 40%** of your final grade.
    a. All lab practicals will be weighted equally.
    b. Each practical covers the material covered since the last exam (not comprehensive).

c. The lab practicals will utilize a variety of question formats (objective, matching, multiple choice, true/false, etc.)
d. I will drop your lowest lecture test grade, excluding the final which must be counted.

Grading Scale for the course:

89.5% - 100%	A
79.5% - 89.4%	B
69.5% - 79.4%	C
59.5% - 69.4%	D
59.4% 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 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.

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 college

    If 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 an essay test. The take home message is: PLAN TO ATTEND THESE 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. 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…

Cellphones: Cellphone use is prohibited. They must be turned off or on silent and in your backpack, purse, or pocket. No calls, no texting, and no internet access is permitted unless prior arrangements have been made with me.

Laptops/tablets: Laptops and tablets may be used in class only for appropriate purposes i.e. following the lecture powerpoint or taking notes. Inappropriate use, i.e. Pinterest, Facebook, or Twitter, will forfeit your privilege of using electronic devices. These devices will not be allowed during any exam or quiz. You will not be allowed to plug in a charger for any device during class. These devices are not necessary. All lecture powerpoints and notes will be posted under Course Documents on the class website of the Student Portal. You may print them and bring these pages to class.

Failure to comply with these rules will forfeit your privilege to use technology in the classroom and is grounds for dismissal from the class. You will receive a grade of F. A first offense will result in confiscation of the device for one day. A second offense will result in loss of the device for one week. A third offense will result in loss of the device for the remainder of the semester.

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 6 courses, 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 November 3rd.

   Studying: This course covers a lot of material and will move fast! Make sure that you do not get behind and schedule for regular study time. Needed study time will vary individually, but at least 8-10 hours per week is recommended outside of class. The purpose of lecture is to further explain and reinforce comprehension of the reading material. It is in your best interest to complete reading assignments before coming to class. If you are having trouble with a topic or particular problems, please contact me for an appointment during office hours.

Biology for Science Majors I – Fall 2023

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	Student Learning Outcome	Lab Activities	Student Learning Outcome
Aug 16	Class begins August 24th. Welcome to Class, Syllabus, Introduction to Student Portal, and First Assignment Course Contracts Due on August 24th.		**Lab Safety and Protocol** ** Forum Discussion – Who is Your Favorite Scientist? **Quiz 1 Lab Safety**	Communicate effectively the results of scientific investigations.
Aug 21	**Ch 1: Introduction to Biology** Characteristics of Living Organisms Activity Hierarchy of Life Activity Chapter 1 Worksheet	Describe the characteristics of life. Explain the methods of inquiry used by scientists.	Exercise 1: Virtual Fossil Tour Darwin Video ** Forum Discussion – Evidence for Evolution **Quiz 2: Charles Darwin**	Describe the unity and diversity of life and the evidence for evolution through natural selection.
Aug 28	**Ch 2: Chemistry of Life** Atomic Structure Activity Chapter 2 Worksheet	Identify the basic requirements of life and the properties of the major molecules needed for life.	Exercise 2: Microscopy ** Forum Discussion – Who is Anton von Leeuwenhoek? **Quiz 3: Parts of a Microscope and Wet Mount Slide Prep**	Apply scientific reasoning to investigate questions and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze.
Sep 5	**Ch 3: Cell Structure and Function** Chapter 3 Worksheet	Describe the structure of cell membranes and the movement of molecules across a membrane.	Exercise 3: Onion, Potato, and Cheek Smear ** Forum Disc. – Spont. Gen. **Quiz 4: Cell Anatomy** **Quiz 5: Cell Biology**	Describe the characteristics of life.

Sep 11	**Ch 3: Cell Structure and Function** **Unit 1 Exam (Chapters 1-3)**	Describe the structure of cell membranes and the movement of molecules across a membrane.	Exercise 4: Prokaryotic and Eukaryotic Cell Identification *Life's Greatest Miracle Video* **Forum Discussion – Prokaryotic and Eukaryotic Cells **Quiz 6: Prokaryotic vs. Eukaryotic Cells** **Quiz 7: Life's Greatest Miracle**	Identify the basic properties of substances needed for life.
Sep 18	**Ch: 4: How Cells Obtain Energy** Chapter 4 Worksheet Mechanisms of Transport Across a Cell Membrane Activity Tonicity Activity Metabolic Pathways Activity	Identify the substrates, products, and important chemical pathways in metabolism.	Exercise 5: Cellular Respiration in Peas ** Forum Discussion – Do Plants Use Cellular Respiration? **Quiz 8: Cellular Respiration**	Identify the substrates, products, and important chemical pathways in metabolism.
Sep 25	**Ch: 4: How Cells Obtain Energy**	Identify the substrates, products, and important chemical pathways in metabolism.	Exercise 6: Cytosis in Elodea Chloroplasts Structure and Function *The Amazing Life of Plants* Video **Quiz 9: Cyclosis and Chloroplast Structure** **Quiz 10: The Amazing Life of Plants**	Describe the structure of cell membranes and the movement of molecules across a membrane.
Oct 2	**Ch 5: Photosynthesis** Chapter 5 Worksheet Photosynthetic Processes Activity	Identify the substrates, products, and important chemical pathways in metabolism.	**Lab Practical # 1**	
Oct 9	**Ch 6: Reproduction at the Cellular Level** Chapter 6 Worksheet	Compare and contrast the structures, reproduction, and characteristics of viruses, prokaryotic cells, and eukaryotic	Exercise 7: Mitosis and Meiosis ** Forum Discussion – Plant vs. Animal Mitosis	Compare and contrast the structures, reproduction, and characteristics of viruses, prokaryotic cells, and eukaryotic cells.

	Cell Cycle and Regulation Activity Mitosis Activity Meiosis Activity **Unit 2 Exam (Chapters 4-5)**	cells.	**Quiz 11: Mitosis** **Quiz 12: Meiosis**	
Oct 16	**Chapter 6: Reproduction at the Cellular Level** Chromosomal Disorders Activity	Compare and contrast the structures, reproduction, and characteristics of viruses, prokaryotic cells, and eukaryotic cells.	Exercise 8: DNA Fruit Extraction *DNA: The Secret of Life* Video **Quiz 13: DNA: The Secret of Life** ** Forum Discussion – DNA Extraction	Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.
Oct 23	**Ch 7: The Cellular Basis of Life** Chapter 7 Worksheet Punnett Squares Activity Mendel's Laws Activity	Identify the principles of inheritance and solve classical genetic problems.	Exercise 9: Mendelian Genetics **Forum Discussion – Blending Inheritance? **Quiz 15: Mendel's Law** **Quiz 16: Monohybrid and Dihybrid Genetics Problems**	Identify the principles of inheritance and solve classical genetic problems.
Oct 30	**Ch 8: Patterns of Inheritance** Chapter 8 Worksheet	Identify the principles of inheritance and solve classical genetic problems. Describe the unity and diversity of life and the evidence for evolution through natural selection.	Exercise 10: Hardy-Weinberg Population Genetics **Forum Discussion – Population Genetics **Quiz 17: Population Genetics**	Explain the methods of inquiry used by scientists.
Nov 6	**Ch 9: Molecular Biology** **Unit 3 Exam (Chapters 6-8)** Chapter 9 Worksheet DNA Structure and Transcription Activity	Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.	Exercise 11: Molecular Biology and Plasmids **Forum Discussion – Genetic Engineering **Quiz 18: Genetic Engineering and Plasmids**	Explain the methods of inquiry used by scientists.

Nov 13	**Ch 9: Molecular Biology**	Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.	Exercise 12: Dichotomous Key Construction **Quiz 19: Dichotomous Keys**	Use critical thinking and scientific problem solving to make informed decisions in the lab.
Nov 28	**Ch 10: Biotechnology** Genomics for Forensic Analysis Activity Genetic Engineering Activity Chapter 10 Worksheet **Unit 4 Exam (Chapters 9-10)**	Explain the methods of inquiry used by scientists.	**Lab Practical #2**	
Dec 5	**Final Exam**			

Clarendon College

Division of Science and Health

BIOL 1306 and BIOL 1106:

Human Anatomy & Physiology I

Class Contract

I,_____, have printed and have read the syllabus for **BIOL 1306 and BIOL 1106: Biology for Science Majors I** taught during the Fall 2023 semester by Kelli Bird and agree to abide by the policies written in it. I understand the policies of class attendance, lab attendance, dropping the course, academic honesty, and general class behavior and understand the consequences of failing to comply with these policies.

_____ _____

Student Signature Date