

Syllabus

Course Description.

After learning about the scientific method, students will study life at its most basic level, the cell. Students will then use the cell as a foundation for understanding how life evolves, including a detailed discussion of DNA, genetics, and evolution. Two thousand years ago, most people agreed that life, death, sickness, and health were the result of fickle gods. Today we know a little more about the principles behind life and seek to learn more through the study of biology. This is the first course in a two-part Biology series.

Prerequisites

There are no prerequisites for this course.

Course Materials and Technology

All the materials you need are included in the course. You do not have to buy any additional textbooks.

This course comprises both original content and materials from an [open source online textbook](#). If you ever would like to know more about a particular topic, you may find additional material in the textbook.

There are some activities that require common household items. Other options for completing these activities are provided if the needed items are unavailable.

Course Outcomes

As students complete the course assignments, they will increase knowledge, improve a 21st century skill, and develop an attribute.

Knowledge: Biology, Part 1

In this course, *knowledge* refers to the subject matter and content students will learn while completing the readings, practices, quizzes, and assignments.

On successful completion of this course, students will be able to

- 1. identify and use the essential components of the scientific method
- 2. describe the properties of water and their importance for life
- 3. explain cell theory and its development
- 4. describe the process of photosynthesis
- 5. describe the structure of the DNA molecule
- 6. explain the process of mitosis and why it is important for the survival of an organism

21st Century Skill: Critical Thinking—Interpretation & Analysis

As students complete the assignments for this course, they will be gaining skills in *Interpretation & Analysis*. This skill is part of Critical Thinking.

Attribute: Resilience

This course focuses on developing the attribute of *Resilience* in the context of Biology.

Grading and Assignments

The letter grade in this course will be based on these assignments and exams.

Assignment or Exam	Grading	Percent of Total Grade
Assignment & Application Projects	Teacher-Graded	40%
Study Guides	Computer-Graded	10%
Module Quizzes	Computer-Graded	20%
Midcourse Quiz	Computer-Graded	15%
Final Exam	Computer-Graded	15%

Assignments and Exams

Assignments & Study Guides

This course includes various activities that will be graded by the instructor. You will submit these activities using the file upload function of the learning management system. These activities will allow you to customize your learning and responses. They will include lab writeups, an at-home lab project spanning several modules, and other assignments that require scientific thinking.

Labs

Some lab activities include computer-graded questions. These questions will help you identify the important concepts from the labs.

Quizzes

There are six of these assignments and they are computer graded. They consist entirely of multiple-choice questions and come directly from the lesson material and the videos. After completing each quiz, pay attention to the feedback given for any wrong answers. The feedback will help you understand why you answered the question incorrectly and how you can prepare to answer similar questions correctly on the final exam.

Midcourse Quiz

This computer-graded quiz will cover the material up to the midcourse quiz. The questions on the midcourse quiz will be similar in format to the questions on the final exam.

Final Exam

The final exam covers all course material.

Course Grade

The letter grade will be calculated according to these percentages.

Percent to Letter Grade Calculation	
A	100%–93%
A–	<93%–90%
B+	<90%–87%
B	<87%–83%
B–	<83%–80%
C+	<80%–77%
C	<77%–73%
C–	<73%–70%
D+	<70%–67%
D	<67%–63%
D–	<63%–60%
F (fail)	<60%–0%

Course Content

This course was developed and produced by human teachers who are subject matter experts. From time to time our teachers use professional generative artificial intelligence tools (AI), so this course may include portions that were edited, revised, or otherwise developed in small part using AI. The course is primarily human-developed, and all content has been carefully reviewed by human experts.