

# BIOL 10

## **BIOLOGY 10: Introduction to Life Science**

**Fall 2021**

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Lecture #55002

Office Hours: Via email.

### **I. COURSE DESCRIPTION**

**A. Title:** Biology 10 – Introduction to Life Science

**B. Prerequisite:** None - Just the desire to learn.

**C. Summary:** This lecture course is recommended for the non-biological science and pre-education majors. This is an introductory course using biological concepts. The organismal structure, function, inheritance, evolution, and ecology are covered. Students needing a life science lab must enroll in Biology 10L in addition to Biology 10. Not open to students with credit in Biology 3.

**D.** Biology 10 is a 3 unit lecture class.

### **II. COURSE CONTENT**

<b>Student Learning Outcomes:</b>
<i>Upon completion of this course, students will be able to:</i>
<ol style="list-style-type: none"><li>1. Evaluate current scientific literature and examine how the scientific method is employed in biological research.</li><li>2. Identify levels of biological organization and apply these concepts to living systems.<ol style="list-style-type: none"><li>1. By examining anatomical and physiological features.</li><li>2. By investigating chemical and energy relationships.</li></ol></li><li>3. Assess human impacts on natural systems and critically evaluate solutions to environmental problems.</li><li>4. Explore the cellular basis of life.</li><li>5. Apply the principles of Mendelian genetics to evolutionary theory and human medicine.</li><li>6. Recognize the function of DNA and how its discovery has impacted modern science.</li></ol>

7. Classify the wide range of living organisms and identify the evolutionary mechanisms that have impacted this diversity.
8. Recognize the chemical basis of life.

**Objectives:**

*In the process of completing this course, students will:*

1. compare and contrast Eukaryote and Prokaryote cell structure.
2. recognize chemical elements, bonds and properties of water.
3. compare anatomical and physiological features seen in the animal kingdom with emphasis on human body systems.
4. calculate genetic probabilities based on the principles of Mendelian genetics.
  - identify human genetic mutations and explain probable causes for their occurrence.
5. distinguish the processes of transcription and translation and identify their roles in protein synthesis.
6. diagram plant life cycles and identify major plant adaptations.
7. explain and compare the processes of photosynthesis and cellular respiration.
8. demonstrate knowledge of evolutionary theory and identify the different mechanisms responsible for biological change.
9. describe energy flow and nutrient cycling within an ecosystem.
  - consider human impact on natural systems.
10. relate principles of population ecology to the study of the global human population.
11. read scientific literature and apply the steps of the scientific method to laboratory research.

**III. MATERIALS:**

1. Online Text: Mader, S. Essentials of Biology, 6th edition McGraw Hill (Connect Learn Smart)

**IV. ATTENDANCE:**

I will drop any student who fails to attend the first week of class. After that you are required to drop yourself. If you stop showing up you will likely remain enrolled and receive a final grade of an F.

**V. TESTS AND EVALUATIONS:**

A. Grading (Chance for extra credit) I will drop the lowest quiz score.

**Description Points**

Homework 18 (270)

Weekly Quizzes (6) 60

Exams (4) 200

Final 100

Total 540

B. Grading scale:

90% = A 80% = B 70% = C 60% = D 59% and below = F

C. Tests cannot be made up without prior arrangement or proof of extenuating circumstances.

D. Quizzes cannot be made up without prior arrangement.

**VI. EXPECTATIONS AND POLICIES**

- Be respectful and discipline yourself so others don't have to.
- No makeups without prior arrangement.
- Cheating and plagiarism will result in failing the assignment and discussed further with administration.
- I will do my best, I expect you to do the same.

**VII. ACCOMODATIONS**

If you have a verified need for an academic accommodation or material in alternate media (i.e. Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible.

<b>Lecture Schedule</b>			
<b>Biology 10 – Fall 2021</b>			
<b>Lecture</b>	<b>Text</b>		
<b>Week 1: 8/9</b>			

<b><u>Lesson</u></b>			
Orientation, Grading, Goals, Attendance	Syllabus, Schedule		
A View of Life	Ch. 1		
Chemistry	Ch. 2		
<b>Week 2: 8/16</b>			
Molecules of life	Ch. 3		
Inside the cell	Ch. 4		
<b>Week 3: 8/23</b>			
They dynamic cell	Ch. 5		
<b><u>Exam 1 8/27 Chap. 1-5</u></b>			
<b>Week 4 8/30</b>			
Energy for Life	Ch. 6		
Energy for Cells	Ch. 7		
<b>Week 5 9/7</b>			
9/6 Labor Day (campus closed)			
Cellular reproduction	Ch. 8		
Meiosis	Ch. 9		
<b>Week 6 9/13</b>			
Patterns of f Inheritance	Ch. 10		
<b>Week 7: 9/21</b>			
DNA biology	Ch. 11		
<b><u>Exam 2 9/24 Chap 6-11</u></b>			
Darwin and Evolution	Ch. 14		
Evolution on a small scale	Ch. 15		
<b>Week 8: 9/27</b>			
Evolution on a large scale	Ch. 16		
<b><u>Exam 3 10/1 Chap 14-16</u></b>			
<b>Week 9 10/4</b>			
Being organized and steady	Ch. 22		
The transport system	Ch. 23		
<b>Week 10: 10/11</b>			

The maintenance systems, digestion	Ch. 24, 25		
<b><u>Exam 4 10/15 Chap 22-25</u></b>			
<b>Week 11: 10/18</b>	Ch. 26		
<b>Week 12: 10/25</b>	Ch. 27		
<b>Week 13: 11/1</b>	Ch. 28		
<b>Week 14: 11/8 (11/11 Veterans Holiday, campus closed)</b>			
<b><u>Exam 5 11/10 Chap 26-28</u></b>			
<b>Week 15: 11/15</b>			
<b>Week 16: 11/22 (Thanksgiving break, No homework or Lec)</b>			
<b>Week 17: 11/29 Final Review</b>			
<b>Week 18: 12/6 Final</b>			