

# BIOL 10

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

**Spring 2018**

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Lecture #52002: Tuesday 2-4:50pm; LFS 17 #52003 Tuesday 6:00-8:50pm; LFS 11

Office Hours: By appointment only

### **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><li>7. Classify the wide range of living organisms and identify the evolutionary mechanisms that have impacted this diversity.</li></ol>

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. Text: Mader, S. Essentials of Biology, 4th edition McGraw Hill.
2. Scantron 882-E (6)

**IV. ATTENDANCE:**

I will drop any student who fails to attend the first day 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

**Description Points**

Daily Quizzes (11) 90

Midterms (5) 250

Final 100

Total 440

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. The lowest two will be dropped.

**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.
- Please keep electronic devices silent and electronics of any kind are not permitted during exams.
- No food or drink in the trash cans.
- 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 – Spring 2018</b>			
<b>Lecture</b>	<b>Text</b>		
<b>Week 1: 1/9</b>			
<b><u>Lesson #1</u></b>			
Orientation, Grading, Goals, Attendance	Syllabus,Schedule		

A View of Life	Ch. 1		
Chemistry	Ch. 2		
<b>Week 2:1/16</b>			
<u><b>Lesson</b></u>			
Organic Molecules	Ch. 3		
Inside the Cell	Ch. 4		
<b>Week 3:1/23</b>			
<u><b>Lesson</b></u>			
Dynamic Cell	Ch. 5		
<b>Week 4:1/30</b>			
<b>Exam #1 (ch.1,2,4,5)</b>			
<b>Week 5: 2/6</b>			
<u><b>Lesson</b></u>			
Photosynthesis	Ch. 6		
Cellular respiration/Fermentation	Ch. 7		
Cell Reproduction	Ch. 8		
<b>Week 6:2/13</b>			
<u><b>Lesson</b></u>			
Sexual Reproduction	Ch. 9		
Patterns of Inheritance	Ch. 10		
<b>Week 7: 2/20</b>			
<b>Exam #2 (ch.6-10)</b>			
<b>Week 8:2/27</b>			
<u><b>Lesson</b></u>			
DNA	Ch. 11		
Protein synthesis	Ch. 12		
<b>Week 9:3/6</b>			
<u><b>Lesson</b></u>			
Genetic Counseling	Ch. 13		

