

BIOL 10

BIOLOGY 10: Introduction to Life Science

Summer 2019

Instructor: Danielle Trathen

E-mail: Danielle.trathen@reedleycollege.edu

Lecture #51029: MTWTh 11:15am-1:20pm; FEM 7

Office Hours: By appointment only, I am usually available in the class room 15 minutes before each class meeting.

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

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

Upon completion of this course, students will be able to:

1. Evaluate current scientific literature and examine how the scientific method is employed in biological research.
2. Identify levels of biological organization and apply these concepts to living systems.
 1. By examining anatomical and physiological features.
 2. By investigating chemical and energy relationships.
3. Assess human impacts on natural systems and critically evaluate solutions to environmental problems.
4. Explore the cellular basis of life.
5. Apply the principles of Mendelian genetics to evolutionary theory and human medicine.
6. Recognize the function of DNA and how its discovery has impacted modern science.

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. Text: Mader, S. Essentials of Biology, 5th edition McGraw Hill.
2. Scantron 882-E (6) , 815-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 (Chance for extra credit) I will drop the lowest quiz score.

Description Points

Homework 18 (180)

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. 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.

Lecture Schedule			
Biology 10 – Summer 2019			

Lecture	Text		
Week 1: 6/24 Class on Friday 6/28			
<u>Lesson</u>			
Orientation, Grading, Goals, Attendance	Syllabus,Schedule		
A View of Life	Ch. 1		
Chemistry	Ch. 2		
Molecules of life	Ch. 3		
Inside the cell	Ch. 4		
They dynamic cell	Ch. 5		
Week 2: 7/1 Exam Monday 7/1 ch 1-5 no lecture after			
<u>Lesson</u>			
Energy for Life	Ch. 6		
Energy for Cells	Ch. 7		
No Class 7/4			
Week 3: 7/9 No Class 7/8			
<u>Lesson</u>			
Cellular reproduction	Ch. 8		
Meiosis	Ch. 9		
Patterns of f Inheritance	Ch. 10		
Week 4: 7/15			
DNA biology	Ch. 11		
Exam 2 7/16 ch 6-11 no lecture after			
Darwin and Evolution	Ch. 14		
Evolution on a small scale	Ch. 15		
Week 5: 7/22			
<u>Lesson</u>			
Evolution on a large scale	Ch. 16		
Exam 3 Ch 14-16 no lecture after			
Being organized and steady	Ch. 22		
The transport system	Ch. 23		
Week 6: 7/29			
<u>Lesson</u>			
The maintenance systems, digestion	Ch. 24, 25		
Exam 4 Ch 22-24			
Review for Final			

Final Exam 8/1 11:15 Fem 7 Cumulative

--	--	--