

**GENERAL BIOLOGY**  
**Biol.1305**  
**CRN # 11235)**  
**Course Syllabus: Fall 2021**  
**Professor: Sukla Roychowdhury, Ph. D.**  
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**COURSE OBJECTIVES:**

A molecular approach to the principles of biology emphasizing cell biology and genetics. The basic Biology concepts and the scientific language used in this field will be reviewed. Emphasis will be given on the chemical, biochemical and genetic foundations of Biology. The structure and function of cells will be discussed in detail.

Specifically following materials will be covered:

The basic links between chemistry and biology

The contributions of macromolecules to the organization and function of cells

How energy is harvested and utilized to promote life

How life propagates at the cellular level (cell cycle and cell division)

The maintenance and propagation of genetic information

Understand genetics and how it regulates life

Classes begin:	August 23
Labor Day Holiday	September 6
Census Day:	September 8
Course Drop/Withdrawal Deadline	October 29
Thanksgiving Holidays	Nov 25. 26
Last day of Classes	Dec 2
Dead Day	Dec 3
Final Exam	Dec 6-10

### **COVID-19 PRECAUTION STATEMENT**

Please stay home if you have been diagnosed with COVID-19 or are experiencing COVID-19 symptoms. If you are feeling unwell, please let me know as soon as possible, so that we can work on appropriate accommodations. If you have tested positive for COVID-19, you are encouraged to report your results to [covidaction@utep.edu](mailto:covidaction@utep.edu), so that the Dean of Students Office can provide you with support and help with communication with your professors. The Student Health Center is equipped to provide COVID-19 testing.

The Center for Disease Control and Prevention recommends that people in areas of substantial or high COVID-19 transmission wear face masks when indoors in groups of people. The best way that Miners can take care of Miners is to get the vaccine. If you still need the vaccine, it is widely available in the El Paso area, and will be available at no charge on campus during the first week of classes. For more information about the current rates, testing, and vaccinations, please visit [epstrong.org](http://epstrong.org).

## **TEXTBOOK– REQUIRED MATERIALS:**

**Textbook.** General Biology 1 1305 by **CogBooks**

**ISBN: 9781913014025**



CogBook, an online adaptive learning platform will be used for the course. Students can either purchase a code in the bookstore or pay for the course online when they begin the course on the first day of class. On the first day of class, students will login either through a direct link or through Blackboard. Once logged in, a Payment Gateway Process screen will appear, and students will be asked to either enter a code (purchased from the bookstore) or purchase the CogBooks courseware. Once students have purchased or entered a code, they will then have access to the CogBooks courseware for the semester.

### **Additional Reference Books–**

**Principles of Life: Hillis, Sadava, Hill, Price**

*Life – The Science of Biology*, Sadava, Hillis, Heller, Berenmaum,

## **GUIDELINES FOR THE DELIVERY OF THE COURSE, EXAMINATION PROCEDURES AND GRADING POLICY:**

- The course will be delivered on a “flipped classroom” model where my pre-recorded lectures and power-point presentations would remain posted on the Blackboard, and the classroom would be face to face interactions with students involving mainly discussion of the lectures (as scheduled in the syllabus). Students can also effectively use this as office hours for any relevant questions. Students should go over the lecture before the class so that they can participate in the discussion. Keeping lecture materials online and holding activities during scheduled course time will also allow students the flexibility to participate in person or online during this unusual covid pandemic time. However, it is expected that the students will also participate in person class frequently depending on their comfort level.

- **Cogbooks Topics and Online Assignments:** Evidence based research shows that students learn more and fail less when they participate in active learning in the classroom. In order for in-class active learning activities to be successful, students must first get exposure and a minimal mastery of the content. This is sometimes called a flipped classroom. I have chosen an evidence based, adaptive learning system, **Cogbooks**, to deliver the pre-class material. There will be videos, short text passages, interactive activities, and quiz questions to do in the pre-class assignment. Data from surveys show that students engage with and enjoy Cogbooks more than a traditional textbook. The assignments are designed to increase your familiarity with new materials. The assignments will help you come prepared for the course materials and activities. The CogBooks software will walk you through the activities. Cogbook is adaptive, so if you need more help in one area it will provide additional tutorials, but if you are confident in your answers and get them correct you will skip these additional tutorials. Every student will have a unique experience based on their own strengths and challenges. This is not graded on a performance scale. You will only receive credit for the assessment if you submit them at the indicated time and you get **full** credit when you reach the threshold score. **10 Cogbooks assignments will be graded and are due once a week, Sunday, 11:59 pm. The details of the assignments and the due dates are provided on the Course Schedule.** Late submissions will NOT be accepted. You should go over all the cogbook topics listed on the content folder for your understanding of the subjects. Because some of these topics covers broad areas and may not be necessary for your syllabus, I decided not to grade them. **Lecture Topics are more narrowly focused and are selected to specifically address the course objectives.**

- Exams, and Quizzes, will be conducted online on the Blackboard initially. All students have to be present remotely with a working laptop/notebook to access online quizzes and exams. Please see the Detailed Instruction below. If the COVID situation improves, we will conduct Exams in the classroom as done traditionally.
- There will be **4 Quizzes** and other assignments, and will be counted in the final score. There will be **4 exams** during the semester and will be counted in the final score. **No test scores will be dropped.** **NO MAKE UP TEST WILL BE GIVEN** unless you make arrangements with me before the exams with justifiable reason. Failure to take two consecutive tests due to a non-justifiable cause will result in an automatic final grade of F in the course.
- Exams will be of multiple choices.

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## GRADING POLICY

## GRADE DISTRIBUTION

**A = 90-100%**      **4 Exams (100 points each)**      **400**

**B = 80-89%**      **10 CogBook Assignments (15 points each)**      **150**

**C = 70-79**      **4 Quizzes**      **80**

**Additional Points (Please see below)**      **30**

***D = 60-69%***

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**Total Points**

**650**

**F = below 60%**

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## TECHNOLOGY REQUIREMENTS

## COMMUNICATION

### Additional points:

- **Academic Integrity Policy:** UTEP's policies regarding academic integrity apply in this course. Any student who commits an act of academic dishonesty will be subject to discipline. Academic dishonesty includes, but is not limited to, cheating, plagiarism, or taking an examination for another person." (UTEP Curriculum and Classroom Policies, Undergraduate Catalog).
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- **Disability Statement:** : If you have or believe you have a disability, you may wish to contact the Center for Accommodations and Support Services (CASS) to show documentation of a disability or to register for testing and services. CASS is located in Union East 106, phone 915-747-5148, email [cass@utep.edu](mailto:cass@utep.edu). The student is responsible for presenting to the instructor any CASS accommodation letters and instructions.



# TENTATIVE COURSE SCHEDULE - Spring 2021

Date	Power-point/ Lecture Topic	Power-point Presentation / Pre-recorded Lecture	CogBook Topics
<b>FIRST QUARTER</b>			
CHEMISTRY OF LIFE			
Aug 23	TOPIC 1	Characteristics of Life/lecture	The Origin of Life, Tree of Life, Natural Selection and Evolution
Aug 25 Aug 30	TOPIC 2	Atoms, Atomic Structure and Chemical Bonding/ 2-Lectures	The Chemistry of Life: Building Blocks of Molecules The chemistry of Life: Water
Sept 1	TOPIC 3	Macromolecules I: Lipids and Carbohydrates /Lecture	The Chemistry of Life: Biological Molecules
Sept 8	TOPIC 4	Macromolecules II: Proteins and Nucleic acids/ 2- Lectures	Macromolecules and Protein Structure and Function
Sept 13 Sept 15	TOPIC 5	Energy and Energy Transformation/Lecture	Chemical Energy: Reaction Energetics and Enzymes
	TOPIC 6	Enzymes/Lecture	
		Quiz-1: September 15	
Sept 20		EXAM-1: September 20	
<b>SECOND QUARTER</b>			
MEMBRANES AND CELLS			
Sept 22	TOPIC 7	Prokaryotic vs Eukaryotic Cells/ 2-Lectures	Cell Types and the Evolution of the Cell
Sept 27	TOPIC 8	Cytoskeleton/Lecture	
Oct 4	TOPIC 9	Cell Membranes/Lecture	Cell Structure and Function
Oct 6	TOPIC 10	Membrane Transport/ 2-Lectures	
Oct 11	TOPIC 11	Cell Division: Cell cycle and Regulation/ Lectures	Cell Division
Oct 13	TOPIC 12	Mitosis and Meiosis/ 2-Lectures	
		Quiz-2: October 13	
Oct 18		EXAM-2: October 18	
<b>THIRD QUARTER</b>			
GENERATING, STORING AND USING CHEMICAL ENERGY			
Oct 20, 25	TOPIC 13	Signals and Responses / 3-Lectures	Cell to Cell Communication
Oct 27, Nov 1	TOPIC 14	Cell Metabolism: Cellular Respiration/2 Lectures	Cellular Respiration
Nov 3, Nov 8	TOPIC 15	Photosynthesis/Lecture	Photosynthesis
Nov 10		Quiz-3: November 10	
Nov 15		EXAM-3: November 15	
<b>FOURTH QUARTER</b>			
DNA STRUCTURE AND FUNCTION, REPLICATION, TRANSCRIPTION AND TRANSLATION			
Nov 15, 17	TOPIC 16	DNA and DNA Replication	DNA Structure and Replication
Nov 22	TOPIC 17	Gene Mutations	Gene Mutations
Nov 24, Nov 29	TOPIC 18	Transcription and Translation	Transcription Translation
Dec 1		Quiz-4: Dec 1	
Dec 10		EXAM-4: Dec 10	

## COGBOOK ASSIGNMENTS AND DUE DATES

COGBOOK ASSIGNMENT #	Name	Due date/Time
1	The Chemistry of Life: Building Blocks of Molecules	Sept 5, 11:59 pm
2	The Chemistry of Life: Biological Molecules	Sept 12, 11:59 pm
3	Macromolecules and Protein Structure and Function	Sept 12, 11:59 pm
4	Chemical Energy: Reaction Energetics and Enzymes	Sept 19, 11:59 pm
5	Cell Types and the Evolution of the Cell	Oct 3, 11:59 pm
6	Cell Structure and Function	Oct 10, 11:59 pm
7	Cell Division	Oct 17, 11:59 pm
8	Cell to Cell Communication	Oct 31, 11:59 pm
9	Cellular Respiration	Nov 7, 11:59 pm
10	DNA Structure and Replication	Nov 28, 11:59 pm

## DETAILS OF EXAMINATION PROCEDURES FOR THE FALL 2021 SEMESTER

There will be 4 Quizzes and 4 Exams throughout the semester. Details of the Examination Procedures including dates are shown below.

**Quizzes** will be available on the Blackboard on Wednesdays for 24h as indicated on the table and will be on the Topics as indicated. There will be 20 questions and you will have 40 min window to take the Quiz. You will be given 2 attempts for taking the Quiz and highest grade will be recorded. The total points for the Quiz-1 is 20.

**Exams** will be available on the Blackboard on Mondays as indicated on the table. Exams will be on topics as indicated on the table. In addition Lectures, there will be few questions from CogBook modules related to the Topics that we covered in that quarter. There will be 50 questions on the exams and the total points is 100. You will have 1.5h window to take the test. There will be only 1 attempt allowed for the exam.

**Please be aware that this is a tentative Syllabus and is subject to change.**

QUIZZES AND EXAMS	AVAILABLE ON THE BLACKBOARD	TOPICS	Window for Taking the Quizzes/Exam
Quiz-1	Sept 15, 8:00 am to Sept 16, 8am	First Quarter Lecture Topics	40 min/ 2 attempts
Exam-1	Sept 20, 8:00 am to Sept 21, 8:00 am	First Quarter Lecture Topics and few CogBook questions	1.5 h/1 attempt
Quiz-2	Oct 13, 8:00 am to Oct 14, 8:00 am	Second quarter Lecture Topics	40 min/2 attempts
Exam-2	Oct 18, 8:00 am to Oct 19, 8:00 am	Second quarter Lecture Topics and few cogBook questions	1.5h/1 attempt
Quiz-3	Nov 10, 8:00 am to Nov 11, 8:00 am	Third Quarter Topics	40 min/2 attempts
Exam-3	Nov 15, 8:00 am to Nov 16, 8:00 am	Third Quarter Lecture Topics and few CogBook Questions	1.5 h/1 attempts
Quiz-4	Dec 1, 8:00 am to Dec 2, 8:00 am	Fourth Quarter Topics	40 min/2 attempts
Exam-4	Dec10, 8:00 pm to Dec 11, 8:00 am	Fourth Quarter Lecture Topics and few CogBook questions	1.5h/1 attempt