

**THE UNIVERSITY OF TEXAS AT EL PASO COLLEGE OF SCIENCE**

DEPARTMENT OF BIOLOGICAL SCIENCES

CRN 11354

**Course #:** BIOL 1107

**Course Title:** LABORATORY COURSE – Organismal Biology

**Term:** Fall 2023

**Meetings & Location:** T/Th 10:30-11:50AM / Biology Building 424

**Prerequisite Courses:** BIOL 1305 or BIOL 1306/1108 (can be taken concurrently)

**Instructor:** Ms. Vivian Torres and Dr. Charlotte M. Vines

**Office Location:** Biosciences 4.126 (Torres) and Biosciences 4.124 (Vines)

**Contact Info:** Dr. Vines (915) 747-8127; cvines@utep.edu; Ms. Torres; vctorres3@miners.utep.edu

**Office Hours:** Dr. Vines M: 9am-10a, or by Appointment, Office 4.124

**Textbook(s), Materials Required:** Lab handouts (Qiaexpressionist), Lab notebook, Calculator

**Course Objectives, Activities and Assignments:**

In this course, we will learn how to design, read a scientific paper to experiments, generate, purify, analyze and use protein antagonists. Grades will be based on your performance in the laboratory. Your performance will be evaluated based on the completeness of your notebook, attendance, quizzes and participation during the class. You will be expected to generate an electronic notebook in PDF format. Each notebook must contain a **table of contents** (pages 1 and 2 of the notebooks- please leave these blank and fill them in as you complete your studies) and **complete experiments** (Date of study, purpose of study, hypothesis being tested, approach to test the hypothesis/experiments, results (include scanned data), discussion of what you will do with the results). You will be graded on neatness, and completeness of the entries. **You**

**are expected to purchase and wear a laboratory coat, and eye protection to each class.** In addition, you are expected to wear closed-toe shoes, and legs must be fully covered with pants (**no holes in your pants please!**). Dresses, shorts, open toed shoes and skirts will not be allowed. If you are not dressed appropriately you will not be allowed to participate that day in lab and your absence will unexcused. **No exceptions!**

### **Assessment of Course Objectives:**

Student grades will be based on the weekly online lab quizzes (20%), notebooks (45%), attendance (20%) and final presentation (15%). A 10-minute quiz will be administered at the beginning of random classes; attendance is mandatory to earn a grade. For each lab missed, 10% of will be deducted from the attendance grade. **In addition, notebooks must be turned in on Blackboard. 10% will be deducted for each day the notebook is late.** At the end of the semester each student will give a 20-minute (15-minute presentation/5-minutes for questions) PowerPoint presentation on the work that they have completed during the semester.

### **Course Schedule (Subject to change): See Table**

**Make-up Policy:** There will be **NO MAKEUP QUIZZES, once the quiz is over the quiz will no longer be accessible on Blackboard.** If you miss a quiz you will receive the score of **ZERO.**

**Grade Disputes: UNDER EXTENUATING CIRCUMSTANCES, AT THE DISCRETION OF Ms. TORRES STUDENTS WILL BE ALLOWED TO MAKE UP A QUIZ. THIS QUIZ MUST BE MADE UP, DURING OFFICE HOURS, WITHIN ONE WEEK OF THE MISSED QUIZ. Students who fail to take a quiz without prior approval from Ms. Torres will earn a score of zero for the quiz.**

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**Attendance Policy:** 20% of your grade will be derived from attendance.

**Civility Statement:** During the quizzes, all cell phones should be turned off during class. Students with disruptive behavior will be asked to leave the class. If you are tardy and miss the quizzes there will be no makeup quiz.

**Letters grade for this class will be assigned as follows. Grades WILL NOT be rounded:**

- A 100 - 90%
- B 80 - <90%
- C 70 - <80%
- D 60 - <70%
- F 0 - < 60%

**Academic Integrity:** The UTEP academic integrity policy will be strictly enforced at all times. Any student failing to adhere to the policy will be reported to the Office for Academic Integrity. **Students are expected to be above reproach in all scholastic activities.** Students who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and dismissal from the university. "Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, and the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another student, any act designed to give unfair advantage to a student or the attempt to commit such acts." Regent's Rules and Regulations, Part One, Chapter VI, Section 3.2, Subdivision 3.22. Since scholastic dishonesty harms the individual, all students, and the integrity of the University, policies on scholastic dishonesty will be strictly enforced. Any work that you submit must have been written entirely by you. Work you submit that was not written solely by you is considered cheating and will result in earning a zero for the assignment. You are expected to work on the exams on your own using only your textbook. Any indication of using outside sources including, but not limited to ChatGPT you will be contacted by University authorities. Please do not contact me if you are contacted by the University, since to be fair to all students, any suspicious behavior must be reported, at which point the issue is no longer in my hands. From the UTEP Dean of Student Affairs (<http://studentaffairs.utep.edu/Default.aspx?tabid=4386>) "It is an official policy of university that all suspected cases or acts of alleged scholastic dishonesty must be referred to the Dean of Students for investigation and appropriate disposition. Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes, but is not limited to cheating, plagiarism, collusion, and the submission

### **Examples of “cheating” include:**

- Copying from the homework, in-class work or exam paper of another student, engaging in written, oral, or any other means of communication with another student during an exam or homework assignment, or giving aid to or seeking aid from another student during a test.
- Possession and/or use during an exam or home test of materials which are not authorized by the person giving the test, such as class notes, books, or specifically designed “crib notes”.
- Using, obtaining, or attempting to obtain by any means the whole or any part of non- administered test, test key, homework solution, or computer program; using a test that has been administered in prior classes or semesters but which will be used again either in whole or in part without permission of the instructor; or accessing a test bank without instructor permission.
- Collaborating with or seeking aid from another student for an assignment without authority.
- Substituting for another person, or permitting another person to substitute for one's self, to take a test.
- Falsifying research data, laboratory reports, and/or other records or academic work offered for credit.
- Using ChatGPT to write your notebook.

**“Plagiarism”** means the appropriation, buying, receiving as a gift, or obtaining by any means another's work and the unacknowledged submission or incorporation of it in one's own academic work offered for credit, or using work in a paper or assignment for which the student had received credit in another course without direct permission of all involved instructors. NOTE: This includes cutting-and-pasting and photocopying from on-line and other material.

**“Collusion”** means the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another

person to commit a violation of any provision of the rules on scholastic dishonesty.

**Disability Statement:**

If a student has or suspects she/he has a disability and needs an accommodation, he/she should contact the Disabled Student Services Office (DSSO) at 747-5148, dss@utep.edu, cass@utep.edu or go to Room 106 Union East Building. For additional information please visit the CASS website at [www.sa.utep.edu/cass](http://www.sa.utep.edu/cass). The student is responsible for presenting to the instructor any DSS accommodation letters and instructions.

**Military Statement:**

If you are in the military, with the potential of being called up for military service and/or training during the course of the semester, you are encouraged to contact Dr. Vines as soon as possible

Fall 2022 Dates	Subject to change	Due Dates
<b>Week 1</b> <b>08/30 and 09/01</b>	<ul style="list-style-type: none"> <li>Syllabus and Rules</li> <li>Information on BB</li> <li>Basic Laboratory Safety</li> <li>Introduction to scientific concepts of our class</li> <li>How to work with a pipette</li> </ul>	
<b>Week 2</b> <b>09/06 and 09/08</b>	<ul style="list-style-type: none"> <li>Transformation vs. Transfection</li> <li>DH5a vs. BL21 DE3 pSUMO-8.83</li> </ul>	
<b>Week 3</b> <b>09/13 and 09/15</b>	Protein expression system Exp293 suspension cells <ul style="list-style-type: none"> <li>Isolation of DNA from Bacteria Culture (Miniprep)</li> </ul>	
<b>Week 4</b> <b>09/20 and 09/22</b>	Restriction digestion analysis and DNA agarose gel electrophoresis	

	<ul style="list-style-type: none"> <li>• Plasmid digestion and agarose DNA gels</li> <li>• Passage suspension cells</li> </ul>	
<b>Week 5</b> <b>09/27 and 09/29</b>	Transfection with Exp293 suspension cells <ul style="list-style-type: none"> <li>• Calculate amount of DNA for transfection</li> </ul>	Lab Notebook due
<b>Week 6</b> <b>10/4 and 10/6</b>	Collect cells and Purification Ni-NTA Chromatography	
<b>Week 7</b> <b>10/11 and 10/13</b>	SDS-PAGE <ul style="list-style-type: none"> <li>• Make buffers and gels for SDS-PAGE</li> <li>• SDS-PAGE</li> </ul>	
<b>Week 8</b> <b>10/18 and 10/24</b>	Coomassie / Western Blot <ul style="list-style-type: none"> <li>• What is a Western Blot</li> </ul>	
<b>Week 9</b> <b>10/25 and 10/27</b>	Analysis of Results <ul style="list-style-type: none"> <li>• Troubleshooting</li> </ul>	Lab Notebook Due
<b>Week 10</b> <b>11/1 and 11/3</b>	<ul style="list-style-type: none"> <li>• Start WB</li> <li>• Make buffers</li> </ul>	
<b>Week 11</b> <b>11/8 and 11/10</b>	<ul style="list-style-type: none"> <li>• Complete WB</li> <li>• Protein Refolding</li> <li>• Discussion of HPLC</li> </ul>	
<b>Week 12</b> <b>11/15 and 11/17</b>	<ul style="list-style-type: none"> <li>• ULP-1 digestion</li> <li>• Cation exchange chromatography</li> </ul>	
<b>Week 13</b> <b>11/22</b>	Repeat any experiment you need to redo	Lab Notebook Due
<b>Week 14</b> <b>11/29 and 12/1</b>	Research presentations (you must be present both days or	

	you will earn a '0' for your presentation and attendance)	
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