

## Bio 1106: General Biology I Laboratory Course Syllabus

Discipline Prefix: BIO	Course Number: 1106	Course Title: General Biology I Laboratory (for majors) Semester: FALL 2024	
	Course Section: 012		
Lab Credit Hours: 1	Lecture Hours: 3 in 1306 <i>co-requisite</i>	Lab Hours: 3	Contact Hours: 3
Meeting Days/Time/Location: SciTech 363 Wednesday 6-8:45			

### Instructor Information

Name: Dr. Aaryn Mustoe

Office Hours: Tu 2:30-3:30 (SciTech 311 Suite) or by appt.

Email Information: amustoe@tamusa.edu

### Course Information

**Course Description:** This course provides hands-on laboratory experiences that highlight the fundamental molecular, cellular, and genetic principles characterizing living organisms. The scientific method in the discovery of these principles will be the primary focus of the hands-on activities. This course is designed for students majoring in science fields. Students majoring or minoring in Biology cannot use placement exams (e.g. CLEP) to fulfill this course requirement. Co-requisite- BIOL 1306-General Biology I- Attributes of Living Systems.

### Prerequisites and/or Co-requisites

Required co-requisite for Biology Majors: BIOL 1306 Gen Bio I Lecture

Recommended prerequisite: MATH 1314 Successful completion of College Algebra or concurrent enrollment in higher-level mathematics is recommended.

### Required Course Text and Supplementary Materials

In-Class Lab Exercises will be supplied online by instructor. Students should print out lab exercise file each week and keep them in a 3-ring binder. Pre-Lab assignments will be completed on Blackboard each week.

**Required:**

- 1) Completed lab safety agreement & quiz online by the second lab period.
- 2) Lab coats must be purchased and worn in the lab every week. If you forget your coat, you will be required to rent one for \$2 or leave the lab for the day and take a zero on that week's lab.

### Topics Covered in the Course

1. Scientific Method
2. Measurements, Metric System, and Statistics
3. Microscopy, Cells and cell cycle, Mitosis and Meiosis
4. Respiration and Photosynthesis
5. Genetics
6. Enzymes
7. Diffusion and Osmosis

### Course Learning Outcomes

1. Students will develop critical thinking skills, communication skills, and Empirical and Quantitative skills. Students will learn to work as a team.
2. Students will understand and apply the scientific method to novel questions in order to develop a strategy to answer those questions.

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3. Students will learn how to collect and analyze scientific data through hands-on activities in which they gather the data.

### Description of Assignments/Assessments

For each of the weekly lab topics (with the exception of week 1), there will be a pre-lab assignment on Blackboard and an in-lab data worksheet with questions - combined for a total of 75 possible points/lab:

#### Pre-Lab Assignment:

The pre-lab assignment will be worth 20 points and must be completed by 11:59 pm the day before your scheduled lab class. This assignment will consist of reading, writing hypotheses, and/or watching videos to introduce new concepts, definitions, and multiple choice questions about the purpose and procedures for that week's lab. You will have an unlimited number of attempts to complete the quiz assignment. Any hypotheses or procedures that need to be written will need to be ready to be graded at the beginning of your lab class.

#### Assignments:

This will be a pdf file available online each week. Students should print out the file and bring the printed file to lab class. The file will contain experimental procedures to be performed, a place to record raw data from experiments, and questions to be answered for credit. The instructor will grade for 45 points. These will be due at 11:59 pm the night before your next scheduled lab class.

#### Research Project:

This project will be completed in the last few weeks of the semester in groups. You will learn research techniques, how to write a scientific paper, and design an experiment/conduct your own research. You will be submitting several assignments that will be part of this project.

### Grade Policy

Your final grade will be assigned a letter based upon a 10- point scale.

<b>A</b>	100% - 90%	(720 - 800 points)
<b>B</b>	89% - 80%	(640 - 719 points)
<b>C</b>	79% - 70%	(560 - 639 points)
<b>D</b>	69% - 60%	(480 - 559 points)
<b>F</b>	Below 60%	(less than 480 points)

If you are more comfortable using a "points" method of keeping track of your grade, the breakdown is:

Lab Pre-exercises (20 pts per lab x 8 labs)	160 points
Weekly Assignments (45 pts per lab x 10 labs)	450 points
Rough Draft Review	60 points
Final Lab Report	100 points
Attendance (2.5 pts per lab x 12 labs)	30 points
<b>Total</b>	<b>800 possible points</b>

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## **Blackboard and Course Communication**

All grades will be posted and accessible through the course's Blackboard site. Students must log-in regularly to both the Blackboard site and to their TAMUSA email account to keep updated on information related to the class.

E-mails: Each student MUST have an active TAMUSA e-mail account. This will be the e-mail address that is used for any communication between you and your instructor. E-mail may be sent from student-to-student, or student-to-instructor using the e-mail feature in Blackboard's Communication area. Students who e-mail instructor Monday-Thursday ordinarily can expect a response within 48 hours. Students who e-mail Friday-Sunday ordinarily can expect a response by 9:00 PM on Monday.

## **Course Policies**

1. **Laboratory Attendance Policy** - Laboratory courses are unique to your education in that they will provide you with hands-on opportunities to gain the skills and critical thinking processes inherent to the study of biology. For these reasons, we have a strict attendance policy: **Attendance is mandatory**

If you miss more than 3 labs for whatever reason (excused or not) the maximum score you can earn for the laboratory section of a course is 50%.

If you miss a lab section for a university excused absence, you may attempt to make up the lab in another lab section if the following criteria are met and directions followed: a) the absence is considered a university excused absence and was determined to be one by your primary instructor b) you must contact via e-mail both your instructor and the instructor of the section you would like to attend c) you must receive written confirmation that you are able to make up the lab. If you do not receive written confirmation, you will not be allowed to make up the lab.

2. **Late Work/Make-up Policy:**

**You are required to complete the pre-lab and post-lab assignments by the assigned due dates.** Since these are available online for several days, no late assignments will be accepted. If you have to miss a lab, you may still complete the pre- and post- lab assessments by obtaining the raw experimental data from a classmate. It is your responsibility to obtain this data on your own. No extensions will be given for the due dates of the assignments for absent students.

3. **Electronic Devices Policy:**

During normal lab classes, electronic devices will be allowed to be used as long as they are not distracting to other members of the class. During exams cell phones/tablets, etc. will NOT be allowed and those devices along with all other personal belongings are to be placed at the front of the classroom or removed from desk surface before receiving and taking the exam.

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### IMPORTANT POLICIES AND RESOURCES

Academic Accommodations for Persons with Disabilities: Texas A&M University-San Antonio is committed to providing all students with reasonable access to learning opportunities and accommodations in accordance with The Americans with Disabilities Act, as amended, and Section 504 of the Rehabilitation Act. If you experience barriers to your education due to a disability or think you may have a disability, please contact Disability Support Services in the Central Academic Building, Suite 210, or at (210) 784-1335 or visit <https://www.tamusa.edu/index.html> or email us at [dss@tamusa.edu](mailto:dss@tamusa.edu). Disabilities may include, but are not limited to, attentional, learning, mental health, sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability-related needs with Disability Support Services and their instructors as soon as possible.

Academic Learning Center: The Academic Learning Center provides free course-based tutoring to all currently enrolled students at Texas A&M University-San Antonio. Students wishing to work with a tutor can make appointments through the Brainfuse online tutoring platform. Brainfuse can be accessed in the *Tools* section of Blackboard. You can contact the Academic Learning Center by emailing [tutoring@tamusa.edu](mailto:tutoring@tamusa.edu), calling (210) 784-1307, or visiting the Central Academic Building, room 202.

Counseling/Mental Health Resources: As a college student, there may be times when personal stressors interfere with your academic performance and/or negatively impact your daily functioning. If you are experiencing emotional difficulties or mental health concerns, support is available to you through the Student Counseling Center (SCC). To schedule an appointment call 210-784-1331 or visit Madla 120.

All mental health services provided by the SCC are free and confidential (as the law allows). The Student Counseling Center provides brief individual and group therapy, crisis intervention, consultation, case management, and prevention services.

Crisis support is available 24/7 by calling the SCC at 210-784-1331 (after-hours select option '2'). For more information and self-help resources, please visit [www.tamusa.edu/studentcounseling](http://www.tamusa.edu/studentcounseling)

Emergency Preparedness: JagE Alert is Texas A&M University-San Antonio's mass notification. In the event of an emergency, such as inclement weather, students, staff and faculty, who are registered, will have the option to receive a text message, email with instructions and updates. To register or update your information visit: <https://tamusa.bbcportal.com/>.

More information about Emergency Operations Plan and the Emergency Action Plan can be found here:

<https://www.tamusa.edu/about-us/campus-information/safety/university-police-department/documents/emergency-operations-plan.pdf> and <https://www.tamusa.edu/about-us/campus-information/safety/university-police-department/documents/emergency-action-plan.pdf>

Download the SafeZone App for emergencies or call (210) 784-1911. Non-Emergency (210) 784-1900

Financial Aid and Verification of Attendance: According to the following federal regulation, 34 CFR 668.21: U.S. Department of Education (DoE) Title IV regulation, a student can only receive Title IV funds based on Title IV eligibility criteria which include class attendance. If Title IV funds are disbursed to ineligible students (including students who fail to begin attendance), the institution must return these funds to the U.S. DoE within 30 days of becoming aware that the student will not or has not begun attendance. Faculty will provide the Office of Financial Aid with an electronic notification if a student has not attended the first week of class. Any student receiving federal financial aid who does not attend the first week of class will have their aid terminated and returned to the DoE. Please note that any student who stops attending at any time during the semester may also need to return a portion of their federal aid.

Writing, Language, and Digital Composing Center: The Writing, Language, and Digital Composing Center supports graduate and undergraduate students in all three colleges as well as faculty and staff. Tutors work with students to develop reading skills, prepare oral presentations, and plan, draft, and revise their written assignments. Our language

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tutors support students enrolled in Spanish courses and students composing in Spanish for any assignment. Our digital studio tutors support students working on digital projects such as eportfolios, class presentations, or other digital multimedia projects. Students can schedule appointments through JagWire under the Student Services tab. Click on “Writing, Language, and Digital Composing Center” to make your appointment. The Center offers face-to-face, synchronous online, and asynchronous digital appointments. More information about what services we offer, how to make an appointment, and how to access your appointment can be found on our website at <https://bit.ly/WLDCenter>.

Meeting Basic Needs: Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to contact the Dean of Students (DOS@tamusa.edu) for support. Furthermore, please notify the professor if you are comfortable in doing so. This will enable them to provide any resources they may possess.

Military Affairs: Veterans and active-duty military personnel are welcomed and encouraged to communicate, in advance if possible, and special circumstances (e.g., upcoming deployment, drill requirements, disability accommodations). You are also encouraged to visit the Patriots’ Casa in-person room 202, or to contact the Office of Military Affairs with any questions at military.va@tamusa.edu or (210)784-1397.

Religious Observances: Texas A&M University-San Antonio recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holidays according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to a religious observance provided they notify their instructors before the end of the second week of classes for regular session classes.

The Six-Drop Rule: Students are subject to the requirements of Senate Bill (SB) 1231 passed by the Texas Legislature in 2007. SB 1231 limits students to a maximum of six (6) non-punitive course drops (i.e., courses a student chooses to drop) during their undergraduate careers. A non-punitive drop does not affect the student’s GPA. However, course drops that exceed the maximum allowed by SB 1231 will be treated as “F” grades and will impact the student’s GPA.

Statement of Harassment and Discrimination: Texas A&M University-San Antonio is committed to the fundamental principles of academic freedom, equality of opportunity and human dignity. To fulfill its multiple missions as an institution of higher learning, A&M-San Antonio encourages a climate that values and nurtures collegiality and the uniqueness of the individual within our state, nation, and world. All decisions and actions involving students and employees should be based on applicable law and individual merit. Texas A&M University-San Antonio, in accordance with applicable federal and state law, prohibits discrimination, including harassment, on the basis of race, color, sex, religion, national origin, age, disability, genetic information, veteran status, sexual orientation, gender identity, gender expression, or pregnancy/parenting status. Individuals who believe they have experienced harassment or discrimination prohibited by this statement are encouraged to contact the appropriate offices within their respective units.

Texas A&M University-San Antonio faculty are committed to providing a safe learning environment for all students and for the university as a whole. If you have experienced any form of sex- or gender-based discrimination or harassment, including sexual assault, sexual harassment, domestic or dating violence, or stalking, know that help and support are available. A&M-San Antonio’s Title IX Coordinator can support those impacted by such conduct in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, and more. The university strongly encourages all students to report any such incidents to the Title IX Coordinator. Please be aware that all A&M-San Antonio employees (other than those designated as confidential resources such as counselors and trained victim advocates) are required to report information about such discrimination and harassment to the university. This means that if you tell a faculty member about a situation of sexual harassment or sexual violence, or other related misconduct, the faculty member must share that information with the university’s Title IX Coordinator ([titleix@tamusa.edu](mailto:titleix@tamusa.edu), 210-784-2061, CAB 439K). If you wish to speak to a confidential employee who does not have this reporting requirement, you can contact the Student Counseling Center at (210) 784-1331 or visit them in Madla 120.

Pregnant/Parenting Students: Texas A&M-San Antonio does not require a pregnant or parenting student, solely because of that status or issues related to that status, to (1) take a leave of absence or withdraw from their degree or certificate program; (2) limit the student’s studies; (3) participate in an alternative program; (4) change the student’s major, degree, or certificate program; or (5) refrain from joining or cease participating in any course, activity, or program at the University. The university will provide reasonable accommodations to pregnant students that would be provided to a student with a temporary medical condition and that are related to the health and safety of the student and the

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student's unborn child. These could include maintaining a safe distance from substances, areas, and activities known to be hazardous to pregnant individuals and their unborn child; excused absences because of illness or medical appointments; modified due dates for assignments; rescheduled tests/exams; taking a leave of absence; and being provided access to instructional materials and video recordings of lectures for excused absences, if these would be provided to any other student with an excused absence. Pregnant/parenting students are encouraged to contact the Title IX Coordinator with any questions or concerns related to their status ([titleix@tamusa.edu](mailto:titleix@tamusa.edu); 210-784-2061; CAB 439K).

Texas A&M-San Antonio has also designated the Title IX Coordinator as the liaison officer for current or incoming students who are the parent or guardian of a child younger than 18 years of age. The Title IX Coordinator can provide students with information regarding support services and other resources.

**Students' Rights and Responsibilities:** The following statement of students' rights and responsibilities is intended to reflect the philosophical base upon which University Student Rules are built. This philosophy acknowledges the existence of both rights and responsibilities, which is inherent to an individual not only as a student at Texas A&M University-San Antonio but also as a citizen of this country.

### *Students' Rights*

1. A student shall have the right to participate in a free exchange of ideas, and there shall be no University rule or administrative rule that in any way abridges the rights of freedom of speech, expression, petition and peaceful assembly as set forth in the U.S. Constitution.
2. Each student shall have the right to participate in all areas and activities of the University, free from any form of discrimination, including harassment, on the basis of race, color, national or ethnic origin, religion, sex, disability, age, sexual orientation, or veteran status in accordance with applicable federal and state laws.
3. A student has the right to personal privacy except as otherwise provided by law, and this will be observed by students and University authorities alike.
4. Each student subject to disciplinary action arising from violations of university student rules shall be assured a fundamentally fair process.

### *Students' Responsibilities*

1. A student has the responsibility to respect the rights and property of others, including other students, the faculty and administration.
2. A student has the responsibility to be fully acquainted with the published University Student Rules found in the Student Handbook, [Student Code of Conduct](#), on our website, University Catalog and to comply with them, as well as federal, state, and local laws.
3. A student has the responsibility to recognize that student actions reflect upon the individuals involved and upon the entire University community.
4. A student has the responsibility to recognize the University's obligation to provide an environment for learning.
5. A student has the responsibility to check their university email for any updates or official university notification.

We expect that students will behave in a manner that is dignified, respectful, and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

Students are expected to exhibit a high level of honesty and integrity in their pursuit of higher education. Students engaging in an act that violates the standards of academic integrity will find themselves facing academic and/or disciplinary sanctions. Academic misconduct is any act, or attempt, which gives an unfair advantage to the student. Additionally, any behavior specifically prohibited by a faculty member in the course syllabus or class discussion may be considered as academic misconduct. For more information on academic misconduct policies and procedures please

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review the [Student Code of Conduct](#).

#### Use of Generative AI Permitted Under Some Circumstances or With Explicit Permission

There are situations and contexts within this course where you may be asked to use artificial intelligence (AI) tools to explore how they can be used. Outside of those circumstances, you should not use AI tools to generate content (text, video, audio, images) that will end up in any student work (assignments, activities, discussion responses, etc.) that is part of your evaluation in this course. Any student work submitted using AI tools should clearly indicate with attribution what work is the student's work and what part is generated by the AI. In such cases, no more than 25% of the student work should be generated by AI. If any part of this is confusing or uncertain, students should reach out to their instructor for clarification before submitting work for grading. Use of AI-generated content without the instructor's permission and/or proper attribution in this course qualifies as academic dishonesty and violates Texas A&M-San Antonio's standards of academic integrity.

#### Important Dates:

August 26	First day of class
September 2	Labor Day – No classes
September 11	Census Day
October 7-18	Midterm grading period
November 11	Last day to drop with “W”
November 19	Last day to withdraw from the university
November 27	Study Day – No classes
November 28-29	Thanksgiving Holiday – No classes
December 5	Last day of scheduled weekday classes
December 6	Study Day – No classes
December 7-13	Final Exams
December 17	Commencement

*The complete academic calendar is available online:* <https://www.tamusa.edu/academics/academic-calendar/index.html>



**Course Schedule: 01L Lab**

The following course schedule may change due to the progression of the course. Students will be notified when any changes/additions are made to the schedule.

<b>Week</b>	<b><u>Lab Topic</u></b>
<b>1 – 8/26</b>	<b><u>Syllabus/Lab Safety/Pre-Test/Measurements</u></b> Lab safety Agreement Due in Class
<b>2-9/2</b>	<b><u>No Labs – Labor Day Holiday</u></b>
<b>3-9/9</b>	<b><u>Scientific Method</u></b> Measurements Assignment & Sci. Method Pre-lab Due 11:59 <b>Sunday, 9/8</b>
<b>4-9/16</b>	<b><u>Macromolecules</u></b> Scientific Method Assignment & Macromolecules Pre-lab Due: 11:59 p.m. <b>Sun. 9/15</b>
<b>5-9/23</b>	<b><u>Microscopy and Cells</u></b> Macromolecules Assignment & Microscopy Pre-lab Due: 11:59 p.m. <b>Sun. 9/22</b>
<b>6-9/30</b>	<b><u>Diffusion and Osmosis</u></b> Microscopy Assignment & Diffusion/Osmosis Pre-lab Due: 11:59 p.m. <b>Sun. 9/29</b>
<b>7-10/7</b>	<b><u>Enzymes</u></b> Diff/Osmosis Assignment & Enzymes Pre-lab Due: 11:59 p.m. <b>Sun. 10/6</b>
<b>8-10/14</b>	<b><u>Respiration &amp; Photosynthesis</u></b> Enzymes Assignment & Resp/Photosynthesis Pre-lab Due: 11:59 p.m. <b>Sun. 10/13</b>
<b>9-10/21</b>	<b><u>Research Project – Introduction &amp; How to Conduct Research Experimental Design</u></b> Resp/Photosynthesis Assignment & Research Intro Pre-lab Due: 11:59 p.m. <b>Sun. 10/20</b> Research Planning Form Due in class
<b>10-10/28</b>	<b><u>Research Project – Run Experiment</u></b> Research Articles Assignment Due: 11:59 p.m. <b>Sun. 10/27</b>
<b>11-11/4</b>	<b><u>Research Project – Results &amp; Writing Lab #1</u></b> In-Class Writing Assignment turned in during class Lab Report Rough Draft due at beginning of Writing Lab #2 class
<b>12-11/11</b>	<b><u>DNA Isolation &amp; Crime Scene Analysis</u></b> Biotechniques Pre-lab Due: 11:59 p.m. <b>Sun. 11/10</b>
<b>13 – 11/18</b>	<b><u>Research Project - Writing Lab #2</u></b> Rough Draft Review – <b><u>must have rough draft to earn points</u></b> Biotechniques Assignment & Due: 11:59 p.m. <b>Sun. 11/17</b> <b><u>Final Lab Report due 11:59 p.m. Wednesday, 11/27</u></b>
<b>14-11/25</b>	<b><u>NO LABS – THANKSGIVING BREAK</u></b>
<b>15-12/2</b>	<b><u>NO LABS – FRIDAY STUDY DAY</u></b>