

**BIOL 1106**  
**Biology for Science Majors I Lab**  
**Spring 2026**



**LAMAR INSTITUTE  
OF TECHNOLOGY**

**INSTRUCTOR CONTACT INFORMATION**

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Office Hours: See Starfish for available office hours  
[Click Here for Starfish](#)

**Credit:** 1 semester credit hour (1-hour lab) can be taken face-to-face or fully online.

**Prerequisite/Co-requisite:**

TSI Complete Required Prerequisite  
Biology 1306 Corequisite

**Course Description**

The diversity and classification of life will be studied, including animals, plants, protists, fungi, and prokaryotes. Special emphasis will be given to anatomy, physiology, ecology, and evolution of plants and animals.

**Upon completion of this course, the student will be able to:**

1. Apply appropriate safety and ethical standards.
2. Appropriately utilize laboratory equipment, such as microscopes, dissection tools, general lab ware, and virtual simulations.
3. Work collaboratively to perform experiments.
4. Demonstrate the steps involved in the scientific method.
5. Communicate results of scientific investigations, analyze data and formulate conclusions.
6. Use critical thinking and scientific problem-solving skills, including, but not limited to, inferring, integrating, synthesizing, and summarizing, to make decisions, recommendations and predictions.
7. Describe modern evolutionary synthesis, natural selection, population genetics, micro and macroevolution, and speciation.
8. Describe phylogenetic relationships and classification schemes.
9. Identify the major phyla of life, including the basis for classification, structural and physiological adaptations, evolutionary history, and ecological significance.

10. Discuss the structure and function of microorganisms, and how they interact with human and nonhuman hosts in beneficial, neutral, or detrimental ways.
11. Describe basic animal physiology and homeostasis as maintained by organ systems.
12. Compare different sexual and asexual life cycles noting their adaptive advantages.
13. Illustrate the relationship between major geologic change, extinctions, and evolutionary trends.
14. Explain the link between natural selection and reproductive success, how natural selection can affect allele frequencies, and the role of sexual selection in trait inheritance.
15. Use the Hardy-Weinberg equation to identify allele frequencies.
16. Compare and contrast how mutation, genetic drift, non-random mating, and gene flow contribute to evolution.
17. Describe how behavior can improve survival and improve reproductive success.
18. Understanding of the concepts and principles that act upon populations, communities, and ecosystems.
19. Discuss the biotic and abiotic factors that affect ecosystems.
20. Detail different species interactions.
21. Explain the factors influencing the structure of communities.
22. Understand energy fluxes in an ecosystem.

### Core Objectives

1. **Critical Thinking Skills:** To include creative thinking, innovation, inquiry, analysis, evaluation and synthesis of information
2. **Communication Skills:** To include effective development, interpretation, and expression of ideas through written, oral, and visual communication
3. **Empirical & Quantitative Skills:** To include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
4. **Teamwork:** To include the ability to connect choices, actions, and consequences to ethical decision-making
5. **Personal Responsibility:** To include the ability to connect choices, actions, and consequences to ethical decision-making

### TEXTBOOK AND MATERIALS:

REQUIRED Textbook - **OpenStax** Biology 2e – <https://openstax.org/details/books/biology-2e?Book%20details>

### Policies

1. You must log into Blackboard and access this course a minimum of **3 times per week**.
2. Cheating of any type will not be tolerated. *This includes copying and pasting information.*
3. **If you wish to drop this course, you must drop it administratively. If you stop logging-in to the course and do not complete the course drop process, then you will receive an “F” grade for the course.**

4. Internet usage- students are to use proper netiquette when participating in course emails, assignment submissions, and online discussions

### **Drop Policy**

If you wish to drop a course, you are responsible for initiating and completing the drop process by the specified drop date as listed on the [Academic Calendar](#). If you stop coming to class and fail to drop the course, you will earn an "F" in the course.

### **Student Expected Time Requirement**

For every hour in class (or unit of credit), students should expect to spend at least two to three hours per week studying and completing assignments. For a 3-credit-hour class, students should prepare to allocate approximately six to nine hours per week outside of class in a 16- week session OR approximately twelve to eighteen hours in an 8-week session. Online/Hybrid students should expect to spend at least as much time in this course as in the traditional, face-to-face class.

### **Course Evaluation**

Final grades will be calculated according to the following criteria:

1. Discussion/Assignments	25%
2. Quizzes	25%
3. Final Exam	30%
4. Mandatory Group Project	20%
<hr/> <b>100%</b>	

### **GRADING SCALE**

90-100	= A
80-89	= B
70-79	= C
60-69	= D
0 – 59	= F

### **Academic Dishonesty**

Students found to be committing academic dishonesty (cheating, plagiarism, or collusion) may receive disciplinary action. Students need to familiarize themselves with the institution's Academic Dishonesty Policy available in the Student Catalog & Handbook at

<http://catalog.lit.edu/content.php?catoid=3&navoid=80#academic-dishonesty>.

### **Technical Requirements (for courses using Blackboard)**

The latest technical requirements, including hardware, compatible browsers, operating systems, etc. can be online at <https://lit.edu/online-learning/online-learning-minimum-computer-requirements>. A functional broadband internet

connection, such as DSL, cable, or WiFi is necessary to maximize the use of online technology and resources.

## **Disabilities Statement**

LIT utilizes an early alert system called Starfish. Throughout the semester, you may receive emails from Starfish regarding your course grades, attendance, or academic performance. Faculty members record student attendance, raise flags and kudos to express concern or give praise, and you can make an appointment with faculty and staff all through the Starfish home page. You can also login to Blackboard or MyLIT and click on the Starfish link to view academic alerts and detailed information. It is the responsibility of the student to pay attention to these emails and information in Starfish and consider taking the recommended actions. Starfish is used to help you be a successful student at LIT.

<https://lit.edu/student-success/starfish>

## **Student Code of Conduct**

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at [www.lit.edu](http://www.lit.edu). Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document.

## **STARFISH**

LIT utilizes an early alert system called Starfish. Throughout the semester, you may receive emails from Starfish regarding your course grades, attendance, or academic performance. Faculty members record student attendance, raise flags and kudos to express concern or give praise, and you can make an appointment with faculty and staff all through the Starfish home page. You can also login to Blackboard or MyLIT and click on the Starfish link to view academic alerts and detailed information. It is the responsibility of the student to pay attention to these emails and information in Starfish and consider taking the recommended actions. Starfish is used to help you be a successful student at LIT.

## **Course Requirements**

1. A Midterm and Final are required with two attempts given per assessment.  
The final score will be an **average of all attempts**.
2. Students will complete virtual lab assignments for each chapter.
3. Students will complete a group project.
4. Quizzes will be given. Each quiz can be taken twice, with an **average of all attempts** being used for the final score.
5. Late assignments will be accepted with a deduction as a late penalty.  
Students will receive a zero for assignments not completed.

# Weekly Checklist - ONLINE BIOL 1106 (LAB)

## SPRING 2026

Week:	Weekly Assignments:	Due Date:
<u>Week 1</u>  <u>Jan 20<sup>th</sup> - 23<sup>rd</sup></u>  <b>Introduction</b> <b>Study of Life</b> <b>Chemistry of Life</b> <b>Biological Molecules</b>	<ul style="list-style-type: none"> <li>• Discussion Board: Introduction</li> <li>• <b>Syllabus Quiz/Syllabus Acknowledgement</b></li> <li>• <b>Respondus Lockdown BrowserPractice Quiz</b></li>   <li>• Register for McGraw-Hill Virtual Labs – Click on “McGraw Hill Virtual Labs” folder in ‘Module 1 folder’ to get started</li> <li>• <b>Complete the Introductory Materials:</b> <ol style="list-style-type: none"> <li>1. Virtual Labs Tutorial</li> <li>2. Lab Safety – Hand Washing</li> <li>3. Lab Safety – Personal Safety</li> <li>4. Quiz: Lab Safety</li> </ol> </li> <li>• <b>Join a group for Group Project: Gene Therapy Due 02.22.26</b></li> </ul>	<ul style="list-style-type: none"> <li>• 01.25.26</li> <li>• 01.25.26</li> </ul>
	<ul style="list-style-type: none"> <li>• <b>Complete Module 1 “Chemical Foundations of Life” Labs:</b> <ol style="list-style-type: none"> <li>1. Test for Sugars, Starch, Fat, Protein</li> <li>2. Emulsification of Lipids</li> <li>3. Assignment: Biochemistry</li> <li>4. Quiz: Chemical Foundations of Life</li> </ol> </li> <li>• <b>Work on Group Project: Gene Therapy Due 02.22.26</b></li> </ul>	<ul style="list-style-type: none"> <li>• 01.25.26</li> </ul>
<u>Week 2</u>  <u>Jan 26<sup>th</sup> – Jan 30<sup>th</sup></u>  <b>Cell Structure &amp; Function</b> <b>Structure &amp; Function of Plasma Membranes</b>	<ul style="list-style-type: none"> <li>• <b>Complete Module 2 “Cell Structure &amp; Function” Labs:</b> <ol style="list-style-type: none"> <li>1. Cell Structure – Examining Plant &amp; Animal Cells</li> <li>2. Assignment: Cells</li> </ol> </li> <li>• <b>Work on Group Project: Gene Therapy Due 02.22.26</b></li> </ul>	<ul style="list-style-type: none"> <li>• 02.01.26</li> </ul>
	<ul style="list-style-type: none"> <li>• <b>Complete Module 2 “Cell Structure” Labs:</b> <ol style="list-style-type: none"> <li>1. Diffusion</li> <li>2. Osmosis</li> <li>3. Passive &amp; Active Transport</li> <li>4. Quiz: Cell Structure &amp; Function</li> </ol> </li> <li>• <b>Work on Group Project: Gene Therapy Due 02.22.26</b></li> </ul>	<ul style="list-style-type: none"> <li>• 02.01.26</li> </ul>
<u>Week 3</u>  <u>Feb 2<sup>nd</sup> – Feb 6<sup>th</sup></u>  <b>Metabolism</b> <b>Cell Respiration</b>	<ul style="list-style-type: none"> <li>• <b>Complete Module 2 “Cell Energy” Lab:</b> <ol style="list-style-type: none"> <li>1. Enzyme Function</li> </ol> </li> <li>• <b>Work on Group Project: Gene Therapy Due 02.22.26</b></li> </ul>	<ul style="list-style-type: none"> <li>• 02.08.26</li> </ul>

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	<ul style="list-style-type: none"> <li>• Complete Module 2 “Cell Energy” Labs:           <ol style="list-style-type: none"> <li>1. Cell Respiration</li> <li>2. Cell Respiration – Yeast Fermentation</li> </ol> </li> <li>• Work on Group Project: Gene Therapy Due 02.22.26</li> </ul>	<ul style="list-style-type: none"> <li>• 02.08.26</li> </ul>
<u>Week 4</u>  <b>Feb 9<sup>th</sup> – Feb 13<sup>th</sup></b>  <b>Photosynthesis</b> <b>Midterm Exam</b>	<ul style="list-style-type: none"> <li>• Complete Module 2 “Cell Energy” Labs:           <ol style="list-style-type: none"> <li>1. Photosynthetic Pigments</li> <li>2. Photosynthesis – Carbon Dioxide Uptake</li> <li>3. Assignment: Cell Energetics</li> <li>4. Quiz Cell Energy</li> </ol> </li> <li>• Work on Group Project: Gene Therapy Due 02.22.26</li> </ul>	<ul style="list-style-type: none"> <li>• 02.15.26</li> </ul>
	<ul style="list-style-type: none"> <li>• <b>Midterm Exam</b> Opens 02.11.26@ 7:30 am and Closes 02.13.26@ 11:59 pm (Chapters 1 - 8)</li> <li>• Work on Group Project: Gene Therapy Due 02.22.26</li> </ul>	<ul style="list-style-type: none"> <li>• Midterm due 02.13.26</li> </ul>

<u>Week 5</u>  <b>Feb 16<sup>th</sup> – Feb 20<sup>th</sup></b>  <b>Cell Communication</b> <b>Cell Reproduction</b> <b>Meiosis &amp; Sexual Reproduction</b>	<ul style="list-style-type: none"> <li>• Complete Module 2 “Cell Reproduction” Labs:           <ol style="list-style-type: none"> <li>1. Cell Division – Mitosis</li> <li>2. Assignment: Cell Division</li> <li>3. Quiz: Cell Division</li> </ol> </li> <li>• <b>DUE SOON</b> ➔ Work on Group Project: Gene Therapy Due 02.22.26</li> </ul>	<ul style="list-style-type: none"> <li>• 02.22.26</li> </ul>
	<ul style="list-style-type: none"> <li>• Complete Module 3 “Heredity” Labs:           <ol style="list-style-type: none"> <li>1. Meiosis</li> <li>2. Chromosomal Inheritance</li> <li>3. Genetic Inheritance</li> </ol> </li> <li>• <b>DUE:</b> Group Project: Gene Therapy Due 02.22.26</li> </ul>	<ul style="list-style-type: none"> <li>• 02.22.26</li> </ul>
<u>Week 6</u>  <b>Feb 23<sup>rd</sup> – Feb 27<sup>th</sup></b>  <b>Mendel &amp; Heredity</b> <b>Modern Inheritance</b> <b>DNA Structure &amp; Function</b> <b>DNA Replication</b>	<ul style="list-style-type: none"> <li>• Complete Module 3 “Heredity” Labs:           <ol style="list-style-type: none"> <li>1. Monohybrid Cross</li> <li>2. Dihybrid Cross</li> <li>3. X-Linked Fruit Fly Cross</li> <li>4. Assignment: Heredity</li> <li>5. Quiz: Cell Reproduction &amp; Heredity</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>• 03.01.26</li> </ul>
	<ul style="list-style-type: none"> <li>• Complete Module 3 “Molecular Genetics” Labs           <ol style="list-style-type: none"> <li>1. DNA/RNA Structure</li> <li>2. DNA Isolation</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>• 03.01.26</li> </ul>

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## SPRING 2026

<u>Week 7</u> <b>Mar 2<sup>nd</sup> – Mar 6<sup>st</sup></b> <b>Genes &amp; Proteins</b> <b>Gene Expression</b> <b>Biotechnology &amp; Genomics</b> <b>Final Exam</b>	<ul style="list-style-type: none"> <li>• <b>Complete Module 3 “Molecular Genetics” Labs:</b> <ol style="list-style-type: none"> <li>1. Transcription, Translation &amp; Mutations</li> <li>2. Genetics – DNA Profiling</li> <li>3. Gel Electrophoresis</li> </ol> </li> <li>• <b>Complete Module 3 “Molecular Genetics” Labs:</b> <ol style="list-style-type: none"> <li>1. Polymerase Chain Reaction (PCR)</li> <li>2. Rapid Diagnostic Testing</li> <li>3. Assignment: Molecular Genetics</li> </ol> <p>Quiz: Molecular Genetics</p> </li> </ul>	<ul style="list-style-type: none"> <li>• 03.08.26</li> </ul>
<u>SPRING BREAK</u> <b>Mar 9<sup>th</sup> – Mar 13<sup>th</sup></b>	<ul style="list-style-type: none"> <li>• Work on Missing Assignments</li> <li>• Sleep, rest, relax</li> <li>• Enjoy time with family and friends</li> <li>• Netflix, etc.</li> <li>• Exercise</li> <li>• Read a good book</li> <li>• Do something nice for someone</li> </ul>	
<u>Week 8</u> <b>Mar 16<sup>th</sup> – 20<sup>th</sup></b>	<ul style="list-style-type: none"> <li>• <b>FINAL EXAM</b> Opens 03.16.26 and Closes 03.18.26 (Chapters 9 – 17)</li> <li>• Congratulations!! You made it!! Celebrate ☺</li> </ul>	<ul style="list-style-type: none"> <li>• 03.18.26</li> </ul>