

**BIOL\_2120\_5T1**  
**Microbiology for Non-Science Majors Lab**  
**Spring 2026**



**LAMAR INSTITUTE  
OF TECHNOLOGY**

**CREDIT**

1 Semester Credit Hours (0 hours lecture, 2 hours lab)

**MODE OF INSTRUCTION**

Face to Face

**PREREQUISITE/CO-REQUISITE:**

Pre-requisite Biol 2101 and 2301

Passed the Reading/Writing Sections of TSI or any other accepted test

Co-requisite Biol 2320

**COURSE DESCRIPTION**

This course covers basics of culture and identification of bacteria and microbial ecology. This course is primarily directed at pre-nursing and other pre-allied health majors and covers basics of microbiology. Emphasis is on medical microbiology, infectious diseases, and public health.

**COURSE OBJECTIVES**

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

1. Use and comply with laboratory safety rules, procedures, and universal precautions.
2. Demonstrate proficient use of a compound light microscope.
3. Describe and prepare widely used stains and wet mounts and discuss their significance in identification of microorganisms.
4. Perform basic microbiology procedures using aseptic techniques for transfer, isolation, and observation of commonly encountered, clinically significant bacteria.
5. Use different types of bacterial culture media to grow, isolate, and identify microorganisms.
6. Perform basic bacterial identification procedures using biochemical tests.
7. Estimate the number of microorganisms in a sample using methods such as direct counts, viable plate counts, or spectrophotometric measurements.
8. Demonstrate basic identification protocols based on microscopic morphology of some common fungi and parasites.

**Core Objectives**

1. **Critical Thinking Skills:** To include creative thinking, innovation, inquiry, and 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

Approved: **Initials/date**

## **INSTRUCTOR CONTACT INFORMATION**

Instructor: Melanie Daleo  
Email: [mdaleo@lit.edu](mailto:mdaleo@lit.edu)  
Office Phone: 409-247-5323  
Office Location: MPC Building, Office 216  
Office Hours: See Starfish for Available Office Hours  
[Click Here for Starfish](#)

## **REQUIRED TEXTBOOK AND MATERIALS**

**OpenStax Microbiology** <https://openstax.org/details/books/microbiology/>

**Hardcover:**

ISBN-13: 978-1-938168-14-7

**Paperback:**

ISBN-13: 978-1-50669-811-3

**Digital:**

ISBN-13: 978-1-947172-23-4

## **ATTENDANCE POLICY**

1. Lectures, classroom discussion, activities and labs promote understanding of key concepts. Please try to avoid unnecessary absences. If you are absent, you must make up the work in the allotted time frame. Students must make up exams the day you return and must make up labs within one week of absence at a day and time scheduled with the instructor.
2. Late assignments will be accepted with a deduction as a late penalty. Students will receive a zero for assignments not completed.

## **DROP POLICY**

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

**Tentative Course Schedule \*Instructor reserves the right to modify as needed**

<b>Week:</b>	<b>To Do:</b>	<b>Due Date</b>
<b>Week 1</b> <b>January 20th</b> <u>Lab Safety</u>	<input type="checkbox"/> Syllabus Quiz <input type="checkbox"/> Goose Chase: Lab Safety <input checked="" type="checkbox"/> Look over Group Project: Gram Staining <b>due 04.19.26</b>	<input type="checkbox"/> 01.25.26 <input type="checkbox"/> 01.20.26
<b>Week 2</b> <b>January 27th</b> <u>Microscopy</u>	<input type="checkbox"/> Exercise 1 Use of Microscope <input type="checkbox"/> Stations: Microscope <input type="checkbox"/> Work on Group Project: Gram Staining <i>due 04.19.26</i>	<input type="checkbox"/> 01.27.26 <input type="checkbox"/> 01.27.26
<b>Week 3</b> <b>February 3rd</b> <u>Aseptic Techniques</u>	<input type="checkbox"/> Exercise 2 Aseptic Techniques <small>**Please Note: This lab is a prerequisite for other lab activities and serves as foundational training on how to prevent contamination, which is critical for the safety of most subsequent experiments. It must be completed to participate in other activities.</small> <input type="checkbox"/> Work on Group Project: Gram Staining <i>due 04.19.26</i>	<input type="checkbox"/> 02.10.26
<b>Week 4</b> <b>February 10<sup>th</sup></b> <u>Aseptic &amp; Streak Plate</u>	<input type="checkbox"/> Exercise 3 Isolation Streak Plate <input type="checkbox"/> Work on Group Project: Gram Staining <i>due 04.19.26</i>	<input type="checkbox"/> 02.17.26
<b>Week 5</b> <b>February 17<sup>th</sup></b> <u>Microscopy:</u> <u>Algae &amp; Cyanobacteria</u>	<input type="checkbox"/> Exercise 4 Microbial Phototrophs <input type="checkbox"/> Quiz 1 covering Labs 1-3 on <b>02.20.25 (Online)</b> <input type="checkbox"/> Work on Group Project: Gram Staining <i>due 04.19.26</i>	<input type="checkbox"/> 02.24.26 <input type="checkbox"/> 02.20.25
<b>Week 6</b> <b>February 24<sup>th</sup></b> <u>Microscopy: Eukaryotes</u>	<input type="checkbox"/> Exercise 5 Protozoa <input type="checkbox"/> Exercise 6 Fungi <input type="checkbox"/> Work on Group Project: Gram Staining <i>due 04.19.26</i>	<input type="checkbox"/> 02.24.26
<b>Week 7</b> <b>March 3<sup>rd</sup></b> <u>Stain/Smear</u>	<input type="checkbox"/> Exercise 8 Simple Staining and Smear Preparation <input type="checkbox"/> Quiz 2 covering Labs 4-8 <b>open 03.06.25 (Online)</b>	<input type="checkbox"/> 03.03.26 <input type="checkbox"/> 03.06.26
<b>SPRING BREAK</b>	~Sleep, rest, relax ~Netflix, Etc. ~Read a good book	~Enjoy time with family and friends ~Exercise ~Do something nice for someone
<b>Week 8</b> <b>March 17<sup>th</sup></b> <u>Gram Stain</u>	<input type="checkbox"/> Exercise 11 Gram Stain <input type="checkbox"/> Work on Group Project: Gram Staining <i>due 04.19.26</i>	<input type="checkbox"/> 03.17.26
<b>Week 9</b> <b>March 24<sup>th</sup></b> <b>Midterm Exam</b>	<input type="checkbox"/> Midterm Exam covering labs 1 – 6 and 8 <small>(In-Class)</small> <input type="checkbox"/> Work on Group Project: Gram Staining <i>due 04.19.26</i>	<input type="checkbox"/> 03.24.26
<b>Week 10</b> <b>March 31st</b> <u>Differential &amp; Selective Media</u>	<input type="checkbox"/> Exercise 14 Blood Agar <input type="checkbox"/> Exercise 15 Mannitol Salt Agar <input type="checkbox"/> Work on Group Project: Gram Staining <i>due 04.19.26</i>	<input type="checkbox"/> 04.07.26

<b>Week 11</b> <b>April 7<sup>th</sup></b> <u>Differential &amp; Selective Media</u>	<input type="checkbox"/> Exercise 16 Eosin Methylene Blue <input type="checkbox"/> Exercise 17 MacConkey Agar <input type="checkbox"/> <b>DUE SOON →</b> Work on Group Project: Gram Staining <i>due 04.19.26</i>	<input type="checkbox"/> 04.14.26
<b>Week 12</b> <b>April 14<sup>th</sup></b> <u>Kirby-Bauer Day 1</u>	<input type="checkbox"/> Exercise 25 Antimicrobial Susceptibility Testing (Kirby-Bauer method) <input type="checkbox"/> Quiz 3 covering Labs 11, 14 - 17 open 04.17.26 (Online) <input type="checkbox"/> <b>DUE →</b> Group Project: Gram Staining <i>due 04.19.26</i>	<input type="checkbox"/> 04.21.26 <input type="checkbox"/> 04.17.26
<b>Week 13</b> <b>April 21<sup>st</sup></b> <u>Kirby-Bauer Day 2</u>	<input type="checkbox"/> Exercise 25 Antimicrobial Susceptibility Testing (Kirby-Bauer method) <input type="checkbox"/> <b>Discussion Board:</b> Gram Stain Gallery Walk	<input type="checkbox"/> 04.21.26 <input type="checkbox"/> 04.25.26
<b>Week 15</b> <b>April 28<sup>th</sup></b> <u>Infectious Diseases</u>	<input type="checkbox"/> Exercise 33 Vaccination & Herd Immunity	<input type="checkbox"/> 04.28.26
<b>Week 16</b> <b>May 8<sup>th</sup> – 10<sup>th</sup></b> <b>Final Exam</b>	<input type="checkbox"/> <b>Final Exam</b> covers Labs 11, 14, 15, 16, 17, 25, 33, and 52 <i>opens 05.08.26 and closes 05.10.26 (Online)</i>	<input type="checkbox"/> 05.10.26

## COURSE EVALUATION

Final grades will be calculated according to the following criteria:

1. Assignments (Lab Activities) \* = 25%
2. Quizzes = 25%
3. Mandatory Group Lab Project = 20%
4. Midterm and Final Exam = 30%

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**Total = 100%**

## GRADE SCALE

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

## **TECHNICAL REQUIREMENTS**

For the latest technical requirements, including hardware, compatible browsers, operating systems, etc., review the Minimum Computer and Equipment Requirements on the [LIT Online Experience page](#). A [functional broadband internet connection, such as DSL, cable, or WiFi is](#) necessary to maximize the use of online technology and resources.

## **DISABILITIES STATEMENT**

The Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. LIT provides reasonable accommodations as defined in the Rehabilitation Act of 1973, Section 504 and the Americans with Disabilities Act of 1990, to students with a diagnosed disability. The Special Populations Office is located in the Eagles' Nest Room 129 and helps foster a supportive and inclusive educational environment by maintaining partnerships with faculty and staff, as well as promoting awareness among all members of the Lamar Institute of Technology community. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409)-951-5708 or email [specialpopulations@lit.edu](mailto:specialpopulations@lit.edu). You may also visit the online resource at [Special Populations - Lamar Institute of Technology \(lit.edu\)](#).

## **STUDENT CODE OF CONDUCT STATEMENT**

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.

## **ARTIFICIAL INTELLIGENCE STATEMENT**

Lamar Institute of Technology (LIT) recognizes the recent advances in Artificial Intelligence (AI), such as ChatGPT, have changed the landscape of many career disciplines and will impact many students in and out of the classroom. To prepare students for their selected careers, LIT desires to guide students in the ethical use of these technologies and incorporate AI into classroom instruction and assignments appropriately. Appropriate use of these technologies is at the discretion of the instructor. Students are reminded that all submitted work must be their own original work unless otherwise specified. Students should contact their instructor with any questions as to the acceptable use of AI/ChatGPT in their courses.

## **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.

## ADDITIONAL COURSE POLICIES/INFORMATION

### Course Requirements

1. A Midterm and Final are required using the Respondus Lockdown Browser, with 2 attempts per assessment. The final score will be an ***average of both attempts***.
2. Students will complete in-person lab experiments.
3. Students will complete a group lab project.
4. Late assignments will be accepted, but a late penalty will be applied. Students will receive a zero for assignments not completed.
5. Cell phones should be visible and in use only during an activity designated by the instructor. Otherwise, they should be put away, and focus should be given to safely completing lab activities. *Students who continually use their cellphones for purposes other than class will lose etiquette points or be asked to leave for the day.*
6. Students are expected to follow the guidelines for testing in the 'Respondus Academic Integrity Policy'. The following violations during testing might result in a grade of zero or a reduction in points:
  - Using technology or electronic devices, including but not limited to iPads, phones, smart glasses, earbuds, and smartwatches.
  - Leaving the testing environment may result in a face being missing from or obscured in the frame.
  - Noises that might indicate external help.
  - Any other questionable activities that indicate cheating.