

BIOL 2305: Microbiology for Health Sciences

Fall 2022 • CRN # 64996 • Lecture & Lab Syllabus



Face to Face

Lecture: Mon. & Wed. 9:00am-10:15am

VAHS Rm. 101

Lab: Wed. 10:30am-1:15pm

VAHS Rm. 110



I love teaching Microbiology—the study of microorganisms. We will start by learning about the different types of microorganisms, bacteria, fungi, and viruses. We will focus most of the semester on bacteria—such interesting little organisms that have more helpful roles to humans than harmful. Can you imagine, we are each a planet to the bacteria on our bodies? First, we will learn about the bacterial cell components and how they grow- environmental requirements, nutrients, and metabolism. Next, we will discuss bacterial DNA- Yes, most microorganisms have it. We will observe that the process of DNA replication is universal, bacteria do have the same DNA components and proteins needed for replication. Have you ever thought about how bacterial cells dividing contribute to microbial pathogenicity? How does pathogenicity contribute to cause disease? These questions will be answered during our discussion of understanding the principles of pathogenicity, disease, and epidemiology. We will also discuss how our immune cells build and maintains a defense against microbial infections in our discussion of Innate and Adaptive Immunity. The last part of the semester we briefly study viruses, an acellular microorganism. Now, you know why I love teaching Microbiology— we learn about microorganisms that are too small to be seen with a naked eye, but can have huge impacts, more helpful than harmful, to humans and ecosystems everywhere on Earth.

Course Description

This course introduces the basic principles of microbial structure, genetics and physiology, virology, parasitology, disease, pathogenicity, epidemiology, and immunology. Only some emphasis is given to basic biological principles. The course is designed for those obtaining a career in the health sciences.

Bring the knowledge that you have and take the journey with me as you continue reaching toward your educational goals.



Hand print on a large TSA plate from my 6 1/2 year old son after playing outside.

“I hope to continue to inspire our nation’s youth to pursue careers in science, technology, engineering, and math so they, too, may reach for the stars.”

--ELLEN OCHOA The First Hispanic Woman to Go to Space.



Dr. Tammi Duncan

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Course Learning Outcomes (CLOs)

At the completion of this course, students will be able to:

Health-related Critical Thinking CLO 1: Apply critical thinking and the information learned to problems encounter in Health-related professions
Prokaryotic Cell Structure CLO 2: Have a basic understanding of cell structure for different types of bacteria.
Microbial Metabolism CLO 3: Understand the metabolic mechanisms of prokaryotes and the use of these in classification systems
Microbial Genetics and Mutations CLO 4: Understand the genetic mechanisms of prokaryotes and the nature of mutations
Acellular Pathogen CLO 5: Have basic understanding of virus structure and function
Immune system CLO 6: Be able to describe the basic functions of the immune system with respect to infectious disease processes
Microbial Pathogenicity and Epidemiology CLO 7: Understand the principles of pathogenicity, disease, and epidemiology
Antimicrobial Drugs CLO 8: Be able to explain the basics of antimicrobial and antiviral chemotherapy.
Lab skills CLO 9: Be able to apply microbiological lab skills and evaluate results to discover an unknown microbe.

The overall goal of the course is to help you become literate in these scientific concepts and be able to apply them in your life as you move forward in reaching your educational goal.

Dr. T's Contact Information

Email: tammid31@unm.edu
Office: 505.925.8726
Front office: 505.925.8600
Office: Rm 132, Arts & Sciences Building



Talk to Me Hours

- Mon. 3:00pm-4:00pm
- Tues. 10:30am-12:30pm
- Wed. 3:00-4:00pm
- Thurs. 10:30am-12:30pm
- Fri. Available by appt.

Zoom meets: Available by appt.

<https://unm.zoom.us/j/5736149969>

Password: biology

Grading Criteria

Exams: Each of the three exams is worth 100 pts and their total is 300 pts. You will be given one hour and 15 min to complete each exam. You will not be able to use your notes, textbook, or online resources. Review your homework, Reviews, OneNote class notes to prepare for your exam.

Homework (HW): Homework are question sets that are each worth 8 pts. Homework is due to UNM Canvas at 11:59pm on the due date. Bring a printed copy to class. *Failure to submit to UNM Canvas by due date will result in an automatic deduction of 4pts. Submitted HW with no name will be deducted 1 pt.*

Case studies: Three case studies, each worth 12 pts each, will help you build your critical thinking and self-assessment skills. Due to UNM Canvas by due date.

Reflections: Three Reflections on what and how you're learning and your approach/adjustments to learning the material will be issued. This is a practice of metacognition, (the process of "thinking about thinking," or reflecting on personal habits, knowledge, and approaches to learning) in order to help you adjust your learning. These Reflections are due to UNM Canvas by due date.


Reviews: There are four Reviews. The total is 40 pts. The goal of the review is to be used as one tool to help you start/prepare for your exams. Be sure to review homework and lectures notes too.

Attendance/Participation: You must be in the class on time to get the most out of this course and participate. You are responsible for "signing-in" to document your attendance in class. If you are missing more than 15 minutes of class, it will count as an absence. 0.5pt/class or 1pt/week.

Cumulative Final: The Final is worth 125pts and given at the end of the semester. You will have 1.5 hours to take this exam online using the Respondus LockDown Browser.

Lab Activities: Includes Lab Reports (7) , Pre-Lab Quizzes (9) , Midterm Exam (1), Final Exam (1), Toothbrush Unknown Lab Report (1) and Attendance and Participation (16). See page 12 for details.

In summary, every point counts. There is no extra credit. The due dates are firm. Communicate. Be on time. Study every day. Ask questions. Try your best. -Dr. T

	Points per assignment:	Total Points:	Percentage of overall Biol 2305 grade (out of 850pts):
Intro. to Homework	5 pts	5 pts	1%
Intro. to Quiz	5 pts	5 pts	1%
Homework (11)	8 pts each	88 pts	10%
Case Studies (3)	12 pts each	36 pts	4%
Reflections (3)	5 pts each	15 pts	2%
Attendance/Participation (16)	1 pt/week	16 pts	2%
Reviews (4)	10 pts each	40 pts	5%
Exams (3)	100 pts each	300 pts	35%
Cumulative Final Exam (1)	125 pts each	125pts	15%
Lecture total		630pts	
Lab Activities	(see page 11 for assignments)	220pts	26%
TOTAL		850 pts	100 %
A+ 100% or higher A 91-99% A- 90%	B+ 88-89% B 81-87% B- 80%	C+ 78-79% C 71-77% C- 70%	D+ 68-69% D 61-67% D- 60% F <60%

Required Learning Resources



canvas

1. Electronic Textbook: *Microbiology* by N. Parker, M. Schneegurt, A. Tu, B. Forster, and P. Lister, 2018, OpenStax Rice University. **REQUIRED.** Free download https://assets.openstax.org/oscms-prodcms/media/documents/Microbiology-OP_C34GvqP.pdf

2. UNM Canvas: <http://canvas.unm.edu> The webpage contains resources you need to succeed in the course. Login using your UNM username and password. ***You are responsible for all announcements, assignments, tests and/or any changes to the syllabus that will be posted on the webpage. Announcements are sent every Friday. Please check email regularly.***

3. Technology and computer: In this course, you will need a dependable computer, reliable internet connection, computer speakers, Microsoft PowerPoint and Word, and Adobe Flash Player.

This is a 4 credit-hour Face to Face course. Class meets face to face for two 75-minute session of direct instruction for sixteen weeks during the Fall 2022 semester. Students are expected to complete a *minimum* of six hours of out-of-class work (readings, homework, study, assignment completion, and class preparation) each week.

Attendance. You must be in the class on time to get the most out of this course, participate in class discussions, and to get a good grade. You are responsible for "signing-in" to document your attendance in class. If you are missing more than 15 min. of class, it will count as an absence. The student will be held responsible for all material and information regardless of whether the student was in class. Exception will be made per student basis dependent on emergency.

Make-up Exams. Make-up exams will be given to students with a documented emergency. You must notify the instructor prior to the day of the missed exam.

Homework. These will be assigned weekly to help you master the concepts presented. They are due to UNM Canvas at 11:59pm the evening before class. Be sure to include your name on each submitted homework assignment. A deduction of one point will be given if not. Be sure to answer each question before submission. A deduction of one point will be given if not.

Review. There will be four Reviews. These will help you apply the knowledge that you have gained. One will be due before each regular exam. Be sure to include your name on your Review. One point will be deducted if not.

Late assignment/homework. Late assignments/homework will only be accepted within the first week following the due date. There will be a 50% reduction in grade. I will not accept assignments after the first week.

Course Policy/Information Continue

Withdrawal. Last day to withdraw from class without a “W” on your transcript is **Sept. 9, 2022** at 5:00pm using UNM Canvas. Last day to withdraw from class with out Dean’s signature/permission on LoboWEB is **Nov. 11, 2022**. See <https://registrar.unm.edu/semester-deadline-dates/fall-2022.html> .

Cell phones. As a courtesy to the class, please silence any cell phones. Any sight of a cell phone during exams or quizzes will result in an automatic fail for that assignment. If you need a to step out during a test/quiz, please leave your phone on your table.

Disruptive behavior. Please avoid any disruptive behaviors in the classroom and online communications. For class, this includes going in and out of the class, texting, talking. For online communication and interactions follow netiquette.

Plagiarism. Only submit work that is yours. Always cite any work used using APA format. <https://libguides.unm.edu/c.php?g=326014&p=2187071> Copy and Paste from Google, your classmates, or your book is considered plagiarism. Write answers in your own words. *You will receive two warnings with the assignment given a zero. A third time you will be dropped from the course and the UNM Science & Wellness Department Chair notified.*

Netiquette. The rationale of providing **Rules of Netiquette** for students is to provide guidelines for online behavior and communication between you and your classmates. We (myself included) are all held to the following guidelines that will provide a safe and respectful online classroom space for constructive critiques, discussion, and scholarly reports between you and your classmates. These guidelines are expected to be upheld in any online communications (Email, Discussion Board Forums, Messaging, and Blogs) between all of us.

Rules of Netiquette continue.

1. Your online behavior and communication should be similar to how you would treat and speak to a person in standing in front of you.
2. Be mindful of different backgrounds, which include cultural, linguistic, political, and religious differences.
3. Be respectful of other’s views and opinions and try to remain open minded. You can have respectful disagreements. Avoid flaming, which is publicly attacking or insulting another person’s view.
4. Provide constructive and concise responses to the subject of the posts in Discussion Forums and Blogs. Stay on topic, read all comments/viewpoints in discussion before contributing to discussion, avoid slang and profanity, be prepared to correct information if your comment is misunderstood or misinterpreted, and avoid using personal identifying information.
5. Practice good grammar and spelling skills. Use 12 pt. font Times New Roman or Calibri, avoid text shortcuts, define acronyms, use correct spelling, limit use of emoticons, and use clear and concise language.
6. Avoid the use of all CAPITAL LETTERS. It suggests shouting, impoliteness, or can be aggressive. Reread you post, checking for sarcasm, slang or anger, before submitting it. Avoid sending a message out of anger or written if you are angry.
7. Call your instructor if you are in conflict with them or another student.
8. In relation to security, protect your passwords and don’t send confidential information through email. If you suspect your password has been used, change your password.
9. There are specific listings of practices for email netiquette and message board netiquette below.

Email Netiquette

- Write a concise email to @unm.edu accounts.
- Include "Biol 2305" in your subject line to me.
- Ask for permission of author before forwarding an email to classmate.
- Include a formal salutation to your recipient.



Discussion Forum and Journal Netiquette

Include "topic-your name" in subject line.

Write concise paragraph on the topic.

Paraphrase and cite your references with APA and credit classmates work if appropriate.

Read all messages in thread before replying.

Don't repeat another person's post.

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**Accommodations:** UNM-Valencia is committed to providing courses that are inclusive and accessible for all participants. As your instructor, it is my objective to facilitate an accessible classroom setting, in which students have full access and opportunity. If you are experiencing physical or academic barriers, or concerns related to mental health, physical health and/or COVID-19, please consult with me after class, via email [tammid31@unm.edu](mailto:tammid31@unm.edu) or during talk-to-me hours. I am not legally permitted to inquire about the need for accommodations. We can meet your needs by collaborating with the Director of Student Affairs, Hank Vigil, by email [vigilh@unm.edu](mailto:viglih@unm.edu) or by phone (505) 925-8581.

**Academic Dishonesty:** Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. Any student judged to have engaged in academic dishonesty in course work may receive a reduced or failing grade for the work in question and/or for the course. *Academic dishonesty includes, but not limited to, dishonesty in quizzes, tests, or assignments; Copying and pasting answers from Google; claiming credit for work not done or done by others, hindering the academic work of other students; misrepresenting academic or professional qualifications within or without the University; and nondisclosure or misrepresentation in filling out applications or other University records.*

## COVID-19. You can prevent the spread of the Coronavirus to your family, fellow students, and your community.

**COVID-19 Health and Awareness.** UNM is a mask friendly, but not a mask required, community. To be registered or employed at UNM, Students, faculty, and staff must all meet UNM's Administrative Mandate on Required COVID-19 vaccination. *If you are experiencing COVID-19 symptoms, please do not come to class. If you have a positive COVID-19 test, please stay home for five days and isolate yourself from others, per the Centers for Disease Control (CDC) guidelines.* If you do need to stay home, please communicate with me at [tammid31@unm.edu](mailto:tammid31@unm.edu); I can work with you to provide alternatives for course participation and completion. UNM faculty and staff know that these are challenging times. Please let us know that you need support so that we can connect you to the right resources and please be aware that UNM will publish information on websites and email about any changes to our public health status and community response.

**Protocol as of 1/17/2022** for vaccinated individuals testing positive (No quarantine for exposure).

1. Upload your information to the Self-Reporting of Positive Covid-19 Diagnosis ([https://lobowebapp.unm.edu/apex\\_ods/f?p=135:LOGIN\\_DESKTOP:16863389260097:::](https://lobowebapp.unm.edu/apex_ods/f?p=135:LOGIN_DESKTOP:16863389260097:::)).
2. Provide documentation (The Covid PCR Test) to me via email (you are not exempt from assignments or exams).
3. Isolate for 5 days- Day 0 is the onset of symptoms or positive viral test (The Covid PCR Test).



## Lecture Course Schedule Continue

| Week | Date          | Chapter: Topic                                                                                                     | Items Due                                    | Due Date @ 11:59pm              |
|------|---------------|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------------------|
| 1    | Aug. 22 Mon.  | Overview of Microbiology                                                                                           | Intro. Online Homework<br>Intro. Online Quiz | Fri. 8/26<br>Fri. 8/26          |
|      | Aug. 24 Wed.  | 1: Invisible World.                                                                                                | Homework 1: Ch 1 & Ch 3                      | Sun. 8/28                       |
| 2    | Aug. 29 Mon.  | 3: The Cell<br><b>Case Study 1</b>                                                                                 |                                              |                                 |
|      | Aug. 31 Wed.  | 3: The Cell                                                                                                        |                                              |                                 |
| 3    | Sept. 5 Mon.  | No Class-Labor Day                                                                                                 |                                              |                                 |
|      | Sept. 7 Wed.  | 4.1: Prokaryotic Diversity<br><br>(Sept. 9 Last day to drop class without "W" with 100% tuition refund on LoboWeb) | Homework 2: Ch 4.1 & 9                       | Tues. 9/6                       |
| 4    | Sept. 12 Mon. | 9: Microbial Growth                                                                                                | <b>Case Study 1</b>                          | <b>Fri. 9/16</b>                |
|      | Sept. 14 Wed. | 9: Microbial Growth                                                                                                |                                              |                                 |
| 5    | Sept. 19 Mon. | Review 1 (Ch. 1, 3, 4.1, 9)                                                                                        |                                              |                                 |
|      | Sept. 21 Wed. | <b>Exam 1 (Ch. 1, 3, 4.1, 9)</b>                                                                                   | Review 1                                     | Wed. 9/21                       |
| 6    | Sept. 26 Mon. | 8: Microbial Metabolism                                                                                            | Homework 3: Ch 8                             | Sun. 9/25                       |
|      | Sept. 28 Wed. | 8: Microbial Metabolism                                                                                            | <b>Reflection 1</b>                          | <b>Fri. 9/30</b>                |
| 7    | Oct. 3 Mon.   | 11: Mechanisms of Microbial Genetics Part 1                                                                        | Homework 4: Ch 11 Part 1                     | Sun. 10/2                       |
|      | Oct. 5 Wed.   | 11: Mechanisms of Microbial Genetics Part 1                                                                        |                                              |                                 |
| 8    | Oct. 10 Mon.  | 11: Mechanisms of Microbial Genetics Part 2<br><b>Case Study 2</b>                                                 | Homework 5: Ch 11 Part 2                     | Sun. 10/9                       |
|      | Oct. 12 Wed.  | 11: Mechanisms of Microbial Genetics Part 2                                                                        |                                              |                                 |
| 9    | Oct. 17 Mon.  | Review 2 ( Ch. 8, 11 Part 1 &2)                                                                                    |                                              |                                 |
|      | Oct. 19 Wed.  | <b>Exam 2 (Ch. 8, 11 Part 1&amp;2)</b>                                                                             | Review 2<br><b>Case Study 2</b>              | Wed. 10/19<br><b>Fri. 10/21</b> |

**\*I reserve the right to make necessary changes.**

## Lecture Course Schedule Continue

| Week         | Date                | Chapter: Topic                                                                                                | Items Due                                  | Due Date @ 11:59pm                   |
|--------------|---------------------|---------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------------------------------|
| 10           | Oct. 24 Mon.        | 13: Control of Microbial Growth                                                                               | Homework 6: Ch 13                          | Sun. 9/23                            |
|              | Oct. 26 Wed.        | 13: Control of Microbial Growth                                                                               |                                            |                                      |
| 11           | Oct. 31 Mon.        | 14: Antimicrobial Drugs                                                                                       | Homework 7: Ch 14                          | Sun. 10/30                           |
|              | Nov. 2 Wed.         | 14: Antimicrobial Drugs                                                                                       | <b>Reflection 2</b>                        | <b>Fri. 10/28</b>                    |
| 12           | Nov. 7 Mon.         | 15: Microbial Metabolisms of Pathogenicity                                                                    | Homework 8: Ch 15                          | Sun. 11/6                            |
|              | Nov. 9 Wed.         | 15: Microbial Metabolisms of Pathogenicity<br><b>Nov. 11 Last day to drop class without Deans Permission)</b> |                                            |                                      |
| 13           | Nov. 14 Mon.        | 16: Disease and Epidemiology                                                                                  | Homework 9: Ch 16                          | Sun. 11/13                           |
|              | Nov. 16 Wed.        | Review 3 (Ch. 13, 14, 15&16)                                                                                  |                                            |                                      |
| 14           | Nov. 21 Mon.        | <b>Exam 3 (Ch. 13, 14, 15&amp;16)</b>                                                                         | Review 3                                   | Mon. 11/21                           |
|              | Nov. 23 Wed.        | Host Defenses<br>17: Innate Nonspecific                                                                       | Homework 10: Ch 17 &18                     | Tues. 11/22                          |
| 15           | Nov. 28 Mon.        | Host Defenses<br>18: Adaptive Specific<br><b>Case Study 3</b>                                                 |                                            |                                      |
|              | Nov. 30 Wed.        | 6: Acellular Pathogens<br><br>11/28 Course Feedback open UNM Canvas                                           | Homework 11: Ch 6                          | Tues. 11/29                          |
| 16           | Dec. 5 Mon.         | 6: Acellular Pathogens                                                                                        | <b>Case Study 3</b><br><b>Reflection 3</b> | <b>Fri. 12/9</b><br><b>Fri. 12/9</b> |
|              | Dec. 7 Wed.         | Semester Final Review (Review 4)<br><br>12/2 Course Feedback close at 5pm                                     | <b>Review 4</b>                            | Wed. 12/14                           |
| <b>Final</b> | <b>Dec. 14 Wed.</b> | <b>Cumulative Final Exam Due 9:00-11:00am</b>                                                                 | <b>Final Exam</b>                          | <b>Wed. 12/14</b>                    |

**\*I reserve the right to make necessary changes.**

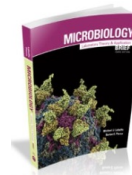


# Microbiology for Health Sciences Lab

**Meeting time:** Wed. 10:30am-1:15pm VAHS Rm. 110

**Lab Manual: *Required*** Microbiology: Laboratory Theory and Application, Brief, Third Edition, Michael J. Leboffe & B.E. Pierce, 2016. Morton Publishing. SBN-10: 1-61731-477-3 or ISBN-13: 978-1-61731-477-3

**Lab coat or lab apron is required.**



## LAB POLICIES



**1.)** Attendance is **Required**. These are **practical, hands-on activities and cannot be made up**. Students may be dropped from the class after 3 absences. Attendance will be taken via a daily sign-in sheet. Excessive tardiness (greater than 10 minutes) will be counted as an absence.

**2.)** No food, drink or chewing gum is allowed in the lab.

**3.)** You must wear a **lab coat or apron** during lab.

**4.)** Wash your hands before leaving the lab for the day.

**5.)** You must tie your hair back.

**6.)** Treat all lab equipment carefully and with respect.



## LAB GRADE CRITERIA

**Lab Reports:** For each separate lab, a lab report will be assigned. Seven total lab reports will be assigned, with each report worth 12 points.

**Pre-Lab Quizzes:** Nine quizzes will be given over the semester. These will be given at the beginning of class and will cover the lab activity that day. Each quiz will be worth 3pts.

**Exams:** Two exams will be given in lab. A midterm exam and the final cumulative exam. Each exam will be worth 34pts and will contain a combination of hands-on practical questions and lab manual questions.

**Toothbrush Unknown Lab Report:** One Toothbrush Unknown Lab Report will be completed. It is worth 25pts.

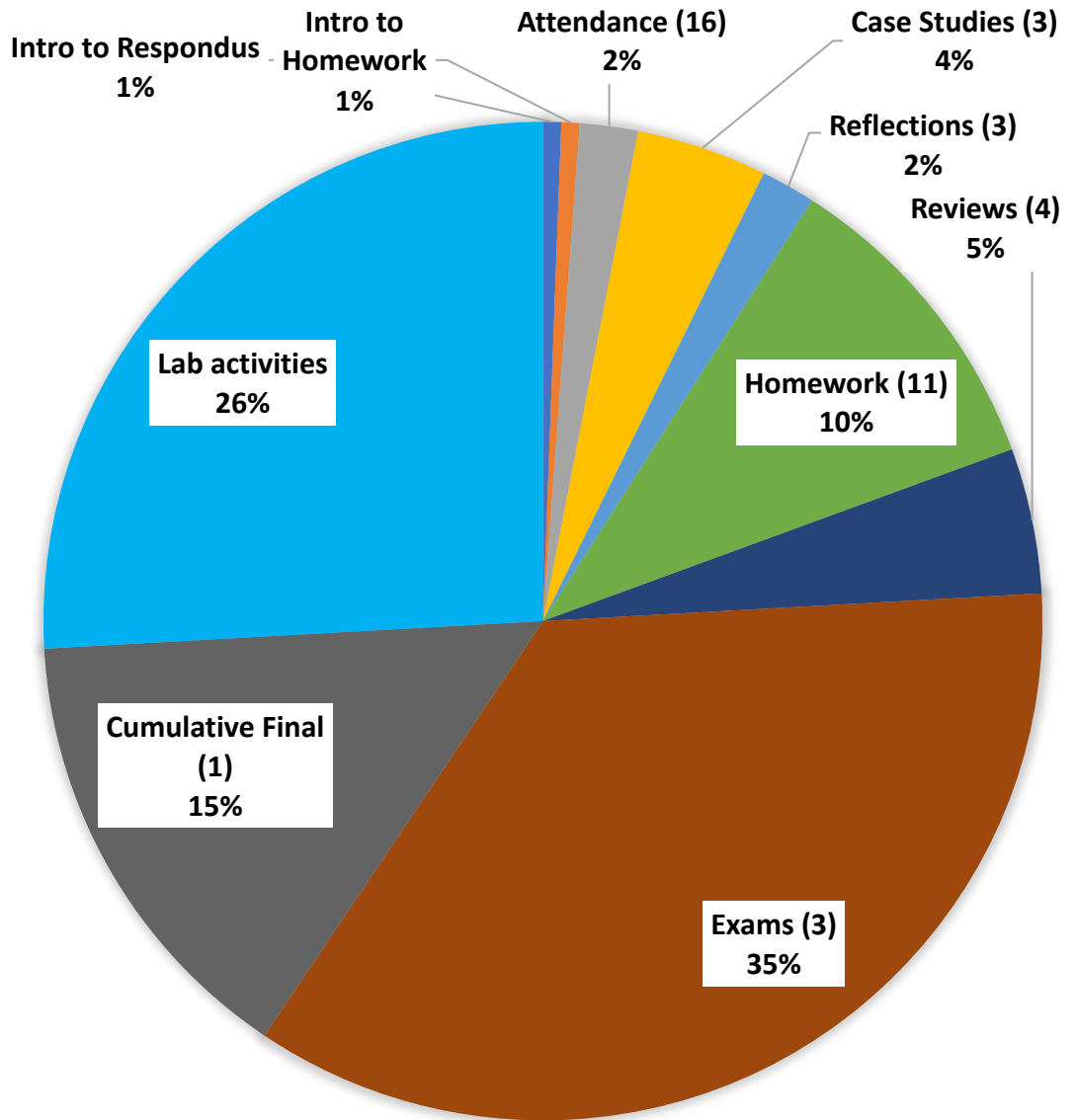
| Lab Activities                    | Points per assignment: | Total Points: | Percentage of overall Biol 2305 grade (out of 850pts): |
|-----------------------------------|------------------------|---------------|--------------------------------------------------------|
| Lab Reports (7)                   | 12 pts each            | 84pts         | ~10%                                                   |
| Pre-Lab Quizzes (9)               | 3 pts each             | 27pts         | ~3%                                                    |
| Midterm Exam (1)                  | 34 pts                 | 34 pts        | 4%                                                     |
| Final Exam (1)                    | 34 pts                 | 34 pts        | 4%                                                     |
| Unknown Lab Report (1)            | 25pts                  | 25 pts        | 3%                                                     |
| Attendance and Participation (16) | 1pt/week               | 16pts         | 2%                                                     |
| <b>TOTAL</b>                      |                        | 220 pts       | 26%                                                    |

## Lab course schedule

| Week | Wed.<br>10:30am-<br>1:15pm | Lab Activity                                                                                                                                                                                                                                                                                                                        | Assignments                           | Due Dates at<br>11:59pm or in<br>class |
|------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|----------------------------------------|
| 1    | Aug. 24                    | <b>Lab 1: Lab Safety</b><br>Read pgs. 1-8 and initial pg. 13<br><b>Exercise 1-1:</b> Glo Germ Hand Wash, <b>1-2:</b> Hand-Cleansing Agents                                                                                                                                                                                          |                                       |                                        |
| 2    | Aug. 31                    | <b>Lab 1: Aseptic Technique &amp; Quadrant Streak</b><br><b>Exercises 1-4:</b> Aseptic Transfers and Inoculation Method, <b>1-5:</b> Streak Plate Methods of Isolation                                                                                                                                                              | <b>Pre-Lab Quiz 1</b>                 | Wed. 8/31                              |
| 3    | Sept. 7                    | <b>Lab 2: Microbial Growth</b><br><b>Exercises 2-1:</b> Ubiquity of Microorganisms, <b>2-2:</b> Colony Morphology, <b>2-8:</b> Temperature on Microbial Growth                                                                                                                                                                      | <b>Pre-Lab Quiz 2</b><br>Lab Report 1 | Wed. 9/7<br>Fri. 9/16                  |
| 4    | Sept. 14                   | <b>Lab 3: Microscopy and Simple Staining</b><br><b>Exercises 3-4:</b> Simple Stains                                                                                                                                                                                                                                                 | <b>Pre-Lab Quiz 3</b><br>Lab Report 2 | Wed. 9/14<br>Fri. 9/23                 |
| 5    | Sept. 21                   | <b>Lab 3: Gram Staining</b><br><b>Exercises 3-6:</b> Gram Stain                                                                                                                                                                                                                                                                     | <b>Pre-Lab Quiz 4</b>                 | Wed. 9/21                              |
| 6    | Sept. 28                   | <b>Lab 4: Body Surfaces &amp; Acid-fast Stain</b><br><b>Review Commercial Slides &amp;</b><br><b>Exercise 3-7:</b> Acid-fast Stain                                                                                                                                                                                                  | <b>Pre-Lab Quiz 5</b><br>Lab Report 3 | Wed. 9/28<br>Fri. 9/30                 |
| 7    | Oct. 5                     | Lab Exam Review                                                                                                                                                                                                                                                                                                                     |                                       |                                        |
| 8    | Oct. 12                    | <b>Lab Midterm Practical Exam</b>                                                                                                                                                                                                                                                                                                   |                                       |                                        |
| 9    | Oct. 19                    | <b>Lab 4: Selective Media</b><br><b>Exercises 4-2:</b> Blood Agar, <b>4-3:</b> Mannitol Salt Agar, <b>4-4:</b> MacConkey Agar                                                                                                                                                                                                       | Lab Report 4                          | Fri. 10/21                             |
| 10   | Oct. 26                    | <b>Lab 5: Disk Diffusion (Kirby-Bauer) Method</b><br><b>Exercises 7-2:</b> Antimicrobial Susceptibility Test                                                                                                                                                                                                                        | <b>Pre-Lab Quiz 6</b>                 | <b>Wed. 10/26</b>                      |
| 11   | Nov. 2                     | <b>Lab 6: Differential Tests I</b><br><b>Exercises 5-4:</b> Catalase Test (Respire), <b>5-10:</b> Starch Hydrolysis (Amylase Test-Hydrolytic Enzyme), <b>5-11:</b> DNA Hydrolysis (DNase Test-Hydrolytic Enzyme), <b>5-16:</b> Bile Esculin Test                                                                                    | <b>Pre-Lab Quiz 7</b>                 | <b>Wed. 11/2</b><br>Fri. 4/1           |
| 12   | Nov. 9                     | <b>Lab Exercise 6: Differential Tests II</b><br><b>Exercises 5-2:</b> Phenol Red Fermentation Broth, <b>5-8:</b> Amino Acid Decarboxylation (Decarboxylase Test), <b>5-9:</b> Phenylalanine Deaminase Test, <b>5-15:</b> Urea Hydrolysis (Urease Test), <b>5-18:</b> SIM Medium (Sulfur Reduction, Indole Production, and Motility) | <b>Pre-Lab Quiz 8</b><br>Lab Report 5 | <b>Wed. 11/9</b><br>Fri. 11/11         |
| 13   | Nov. 16                    | <b>Lab Exercise 7: Quantitative Technique</b><br><b>Exercise 6-3:</b> Urine Culture                                                                                                                                                                                                                                                 | <b>Pre-Lab Quiz 9</b>                 | <b>Wed. 11/16</b>                      |
| 14   | Nov. 23                    | Toothbrush Unknown Lab Report                                                                                                                                                                                                                                                                                                       | Lab Report 6                          | Fri. 12/2                              |
| 15   | Nov. 30                    | Review for Final                                                                                                                                                                                                                                                                                                                    | Lab Report 7                          | Fri. 12/9                              |
| 16   | Dec. 7                     | <b>Lab Final Practical Exam</b>                                                                                                                                                                                                                                                                                                     | <b>Toothbrush Unknown Lab Report</b>  | Fri. 12/9                              |

\*I reserve the right to make necessary changes.

## Grade Breakdown Chart



**Figure 1. Grade breakdown of points in percentages.** Notice that many of your points (~74%) will be from the Lecture portion of class. To pass the course you will have to receive a 71% C or better. Try your best and contact me [tammid31@unm.edu](mailto:tammid31@unm.edu) for guidance if you need help.

## Advice from your Biol 2305 Microbiology Peers

### ○ *If you could take Biol 2305 Microbiology again, what would you do differently?*

"I'd probably set up a study schedule and practice it before I started the class so that I could develop those study habits early on."

"Probably [I would] get a tutor and prioritize better."

"I could take Microbiology 2305 again I would study and put more time into my assignments. I would also try to remind myself that it's okay to stress but to not overwhelm myself and that it will be okay. I have always tried to thrive for As, this semester taught that I don't need perfect grades as long as I am trying my best."

"If I took Microbiology 2305 again, I would probably investigate the details of every chapter more. I seem to only grasp on the broad points of a chapter and not really the details. I know that learning the details helped me understand the whole topic more."

"I would work harder to stay organized and try not to miss any assignments. Other than that, it was a great course and I really enjoyed it."

"If I could take Microbiology 2305 again, I would take more time to study before an exam or quiz. I feel like I studied but didn't study enough to where I felt 100% confident before taking the test. I would also try to focus on all material equally instead of on one topic more than the other. I made this mistake a lot in past exams and during the exam I noticed it myself. Therefore, studying everything at a certain pace would really help."

"I think I would find a study group outside my normal class."

### ○ *What advice regarding course work, preparation for exams, homework, completing lab material, or preparing for lecture would you like to share with next semester's students?*

"Make time to go over the material (even if it's just a little bit) every day so that you really try to understand what you are learning and how it can be applied to your career field."

"The advice I would give is read and study the material before coming to class. Do not wait until last minute to do homework."

"I would give other students advice to follow the learning objectives from the PowerPoints and take the time to understand them. The learning objectives are what helped me prepare for the exams. As far as lab goes, read the procedures before going to class."

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## Advice from your Biol 2305 Microbiology Peers

"Some advice I would share with next semester's students would be to always try your best and to remember that it will be okay as long as you thrive for your goal. As far as homework and exams, I would study as much as you can [and] really put effort into the class. For lab materials it was really fun for me so I feel like if students are engaged in lab it will be easy to complete lab assignments and lab reports."

"Do not stress too much even if it seems to get hard. Use all the resources such as CAPS or even the instructor's office hours/email for help. Always copy board notes and do your best on the homework. Use past work and notes to help study for tests and exams. The PowerPoints are also good sources to use for studying. What ever happens, do your best and just keep going."

"If I took Microbiology 2305 again, I would probably investigate the details of every chapter more. I seem to only grasp on the broad points of a chapter and not really the details. I know that learning the details helped me understand the whole topic more."

"Make sure to read and understand what the question are asking! That is with just about any class. I have missed so many questions because I mis-read them! Take the time to answer questions completely and don't be afraid to write longer explanations on assignments. Take really good lecture notes and study those because most of the test question come from them. Makes sure to use and review corrections for future exams."

"I would say buy the book. It's not that expensive and makes a huge difference in completing the homework and just learning in general. For some reason, its easier to learn with the physical copy."

"Pay attention in class and make sure to take good notes. Use those to study [from], they will do you wonders in this class."

"The advice that I would give future students regarding preparation for exams would be to study the material issued thoroughly and class notes. Another tip regarding completing lab materials would be to make sure to stay on top of it. I say this because if you fall behind it'll be difficult to catch up and you'll end up falling behind in other assignments. Another tip of advice regarding preparing for lecture would be to print the slides from the PowerPoint chapters. It comes in handy when studying and saves time instead of having to go back to UNM learn (Now called UNM Canvas) and look at the slides."

"Be honest with yourself, if you are not understanding something, ask questions. Take lots of notes. Read, read, read!"



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