

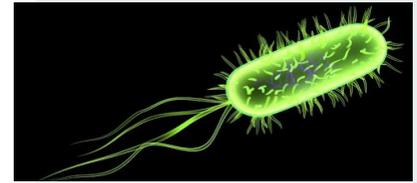


Spring 2019



Lecture—Mon & Wed 9– 10:15 a.m.  
HSB Room 101  
Lab — Wed 10:30–1:15 p.m.  
HSB Room 110

# Biology 239 Syllabus



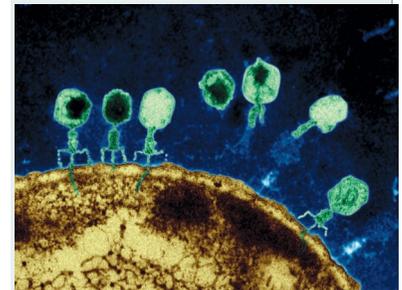
## COURSE INFORMATION

Introduction to microbiology with emphasis on principles of infection and immunity. It is a four credit hour biology class. There is a lecture component that meets twice a week and a lab component that meets once a week.

### MIRIAM'S COURSE DESCRIPTION

I love teaching Biology, but especially this class – Microbiology – the study of small life. When I was going to college, I knew that I liked biology – but not sure what path I was going to take. I took a class in Microbiology and I was hooked – I could not wait to learn more about these amazing small organisms and how they interact/infect us. In this class, we will learn primarily about bacteria – we will start with their unique structure, how they obtain energy, and their genetics. The rest of the semester we will discuss and learn about how to protect ourselves from them by controlling and minimizing their effects. We will cover our immune system – what a hard working system to keep us from getting sick. At the end of the semester we will have time to discuss viruses – so tiny, different and now always well understood.

Come take this wonderful journey into the world of microbiology as you continue with your educational goals. The microbes are all around us and we interact with them all the time, yet amazingly we are not sick all the time.



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## Instructor's Information

### Miriam Chávez, Ph.D.

**Office:** Rm 100B, Health Science Building

**Phone:** 925-8613

**E-mail:** mjchavez@unm.edu

**Office Hours:** Mon—Thurs 8:00—9:00 a.m.  
Tues & Thurs 10:30 to 11:30 a.m.

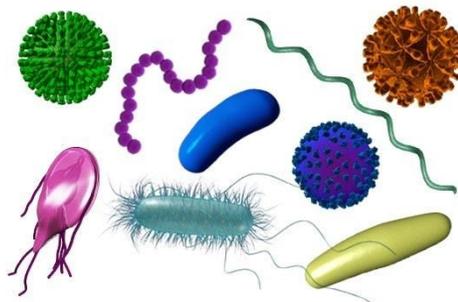


*I have been teaching for 28 years at UNM—Valencia. I am originally from Bolivia and currently live in Los Lunas.*

## STUDENT LEARNING OUTCOMES

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

- ◆ Compare and contrast the characteristics of various microbes with regards to infections, treatment and control.
- ◆ Apply the scientific method by stating a question; determining appropriate test; performing test; collecting and analyzing, and presenting data.
- ◆ Correctly perform microbiologic lab skills.
- ◆ Summarize basic bacterial genetic principles and analyze consequences of mutation.
- ◆ Evaluate and apply the proper methods of microbial control necessary in sample scenarios or case studies.
- ◆ Articulate and diagram the role of the immune system in maintaining homeostasis and challenging infections.



## REQUIRED LEARNING RESOURCES



### Textbook:

**Microbiology.** This book is available in web view and PDF for free from Openstax.org. You can also get the digital version from Amazon for free or a printed copy at a low cost.

**Course Webpage:** <https://learn.unm.edu/>. The webpage contains resources you need to succeed in the course. Login using your UNM user name and password. *You are responsible for all announcements, assignments, quizzes, tests and/or any changes to the syllabus will be posted on the webpage.*

**Technology & Computer:** In this course, you will need the following technology and computer requirements:

- Dependable computer
- Reliable internet connection
- Reliable web browser



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*“If you can dream it, you can do it” — Walt Disney*

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## TIPS FOR SUCCESS

### If you are feeling lost or overwhelmed ...

**PowerPoint Slides.** Use the PowerPoint slides for each chapter to guide your reading the chapter. The Learning objectives should be used to make sure that you understand the material for each chapter.

**Study habits.** Look at figures and read the chapter. It may take more than one reading to understand the material presented. Learn the vocabulary.



**Office hours.** I am available to help you succeed in the class; stop by my office and I can clarify information or help you with assignments.

**Study groups.** Get together with classmates and form study groups. If you need a place to meet, you can try the STEM Center or contact me to meet in the lab.

**Email netiquette.** Include an informative subject line (class and concern -- Bio 239, quiz 3); include a salutation and closing (sign your name); do not use IM or TXT spelling, instead use standard English.

**SAGE.** SAGE (Student Alerts and Grouped Events) is the new Early Alert referral program I will use to send out emailed alerts to both students and staff regarding student progress. This enables streamlined communication between faculty, students and staff to help students succeed at Valencia. Students may receive SAGE referrals on tutoring needs, grades, attendance issues, missing assignments, etc., as well as kudos for a job well done.

## COURSE POLICIES

I will always be early to class so we can begin on time (and you can ask questions before we begin). I expect that you will contribute to a respectful atmosphere for learning.

**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. If you are missing more than 15 min. of class, it will count as an absence. Unless otherwise advised, after four absences you can be dropped from the class. The student will be held responsible for all material and information regardless of whether the student was in class.



**Late Assignments.** Late assignments will only be accepted up to a week after the due date. There will be a 50% reduction of the grade.

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

**Quizzes.** Make-up quizzes will be given to students with a valid excuse.

**Withdrawal.** If a student drops the course before February 1, it will not appear on their transcript. After February 1 a “W” will be issued.

**Cell phones.** As a courtesy to the class, please turn off or silence any mobile phones or electronic devices. Please do not text message during class.

**Disruptive behavior.** Please avoid any disruptive behaviors in the classroom. This includes going in and out of the class, texting, talking.

**Plagiarism.** Only submit work that is yours. Always cite any work used using APA format.

## THINGS TO KEEP IN MIND

### Accommodations:

If you have a documented disability and you need a reasonable accommodation made for you in this course, please consult with me immediately at the outset of the course so we can design a solution that will help you be successful in the class.

### Academic Dishonesty:

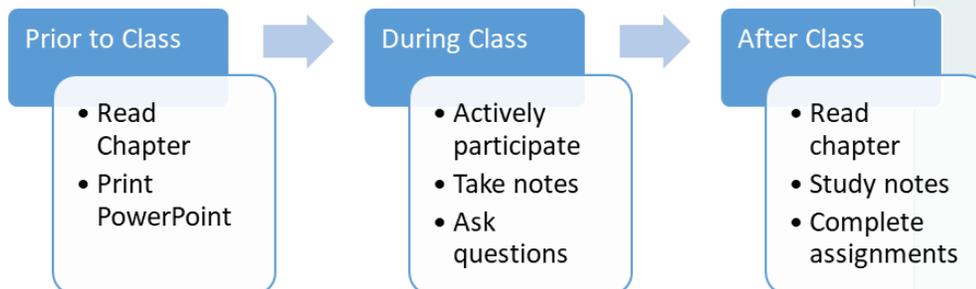
Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. The University reserves the right to take disciplinary action, up to and including dismissal, against any student who is found guilty of academic dishonesty or otherwise fails to meet the standards. 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 is not limited to, dishonesty in quizzes, tests, or assignments; 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.

### Equal Opportunity and Non-discrimination:

In an effort to meet obligations under Title IX, UNM faculty, Teaching Assistants, and Graduate Assistants are considered “responsible employees” by the Department of Education (see page 15 - <http://www2.ed.gov/about/offices/list/ocr/docs/qa-201404-title-ix.pdf>). This designation requires that any report of gender discrimination which includes sexual harassment, sexual misconduct and sexual violence made to a faculty member, TA, or GA must be reported to the Title IX Coordinator at the Office of Equal Opportunity ([oeo.unm.edu](http://oeo.unm.edu)). For more information on the campus policy regarding sexual misconduct, see: <https://policy.unm.edu/university-policies/2000/2740.html>.

*Honesty is the best  
policy — Benjamin*

*Develop good study habits. Don't wait until the last minute.*

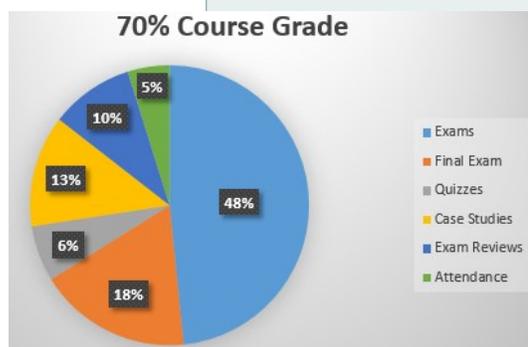


## GRADING CRITERIA—

### For Assigning Final Course Grade:

Lecture will count for 70% of the course grade, as follows:

Exams (3)	300 points
Final Exam	110 points
Quizzes (4)	40 points
Case studies	80 points
Exam Reviews	60 points
Attendance	30 points



Lab will count for 30% of the course grade.

The grade earned will be based on the following percentage:

100 or higher – A+	77-79 – C+
94-99 – A	73-76 – C
90-93 – A-	70-72 – C-
87-89 – B+	60-69 – D
83-86 – B	below 60 – F
80-82 – B-	



# LECTURE OUTLINE

	<b>Chapter</b>	<b>Quiz</b>
January 14—February 6		
History of Microbiology .....	1	
Characteristics Prokaryotic Cells .....	3	Jan. 28
Prokaryotic Diversity .....	4	
Microbial Growth .....	9	

***Martin Luther Day – No classes on Monday, January 21***

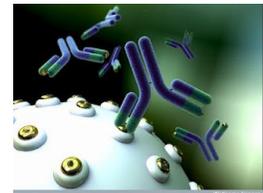
**\*\*\*EXAM I ----Monday, February 11\*\*\***



February 13 – March 6		
Microbial Metabolism .....	8	Feb. 20
Microbial Genetics .....	11	
Control of Microbes .....	13	Mar. 4
Antimicrobial Drugs .....	14	

***Spring Break – No classes the week of March 11***

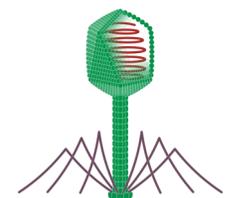
**\*\*\*EXAM II ----Monday, March 18\*\*\***



March 20 – April 10		
Microbial Mechanisms of Pathogenicity .....	15	
Disease and Epidemiology .....	16	Apr. 8
Host Defenses .....	17 & 18	

**\*\*\*EXAM III ---- Monday, April 15\*\*\***

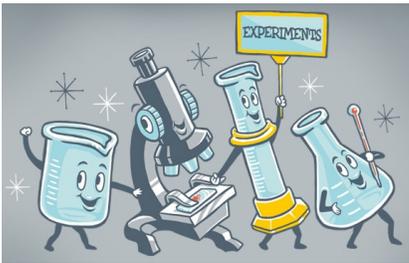
April 17 – May 1		
Diagnosing Infections .....	10	
Acellular Pathogens .....	6	



**\*\*\*FINAL EXAM – Monday, May 6 9:00 a.m.\*\*\***

# LABORATORY PORTION

This portion of the class is a hands-on activities. It focuses on basic microbiology laboratory techniques with emphasis on identification of organisms. You will be working with live bacterial cultures. Proper aseptic technique must be used at all times.



## Lab Reports

- ⇒ Due the day of midterm exam (1-4) and final exam (5-7).
- ⇒ You will have to look up and **submit** basic information before lab (pre-quiz).
- ⇒ You will have to keep track of results and take pictures to be included with report.

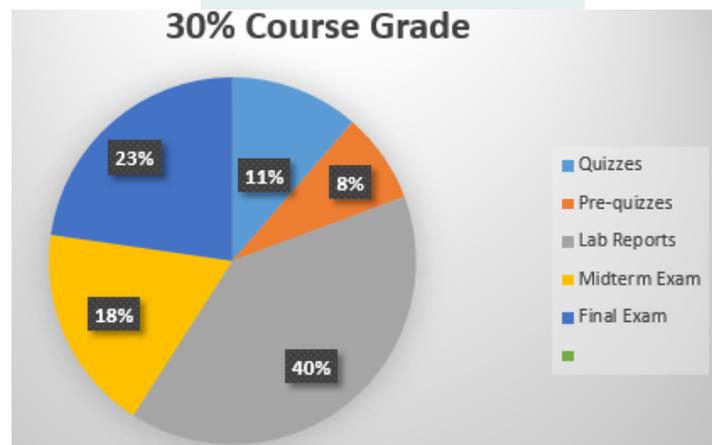
## LAB POLICIES

- \* Attendance is necessary for you to participate in lab exercises. Most of the labs are for two weeks.
- \* Must submit pre-lab information before Wednesdays lab. This will be available through Blackboard Learn.
- \* There will be **no food or drink** in the lab room. No gum chewing.
- \* You **must wear** a lab coat or apron during lab – this will be left in the lab.
- \* If you have long hair – **you must** tie it back.

## GRADING CRITERIA FOR LAB—

The lab grade will be determined as follows (counts for 30% of your overall grade):

Quizzes (5 out of 6)	50 points
Pre-Quizzes (7)	35 points
Lab Reports (7)	175 points
Midterm Exam	80 points
Final Exam	100 points



# LAB OUTLINE

Week	Day	Exercise
1	January 16	Lab Exercise 1: Lab Safety & Aseptic Technique
2	January 23	Lab Exercise 2: Microscope & Simple Stain
<b>Quiz 1</b>		
3	January 30	Lab Exercise 3: Disinfectant or Antiseptic
4	February 6	Lab Exercise 3—Continued
<b>Quiz 2</b>		Gram Stain
5	February 13	Lab Exercise 4: Body Surfaces
6	February 20	Lab Exercise 4—Continued
<b>Quiz 3</b>		Selective Media
7	February 27	Complete Lab Reports (1-4) Review for Midterm
8	March 6	<b>Midterm Exam</b>
9	March 13	<b>Spring Break—No lab!</b>
10	March 20	Lab Exercise 5: Antibiotic Susceptibility
11	March 27	Lab Exercise 6: Gram Positive Bacteria & Differential Tests
<b>Quiz 4</b>		
12	April 3	Lab Exercise 6—Continued
13	April 10	Lab Exercise 7: Urine Culture & Differential Tests
<b>Quiz 5</b>		
14	April 17	Lab Exercise 7—Continued
15	April 24	Complete Lab Reports (5-7) Review for Final Exam
<b>Quiz 6</b>		
16	May 1	<b>Final Exam</b>