

**Microbiology for Health Science Students**  
**Biology 239-501**  
**Fall 2015**  
**Syllabus**

**Meeting time and Place:**

**Lecture:** Health Sciences Building, Room 101  
Monday & Wednesday 9:00-10:15 AM  
**Lab:** Health Science Building, Room 110  
Wednesday 10:30-1:15 PM

**Lecture Instructor:** Dr. Miriam J. Chávez  
**Office:** Room 100B, Health Science Building  
**Office Hours:** Monday & Wednesday 8:00-9:00 a.m.  
Tuesday & Thursday 10:30a.m. to Noon  
**Phone:** 925-8613  
**E-mail:** [mjchavez@unm.edu](mailto:mjchavez@unm.edu)

**Prerequisites:**

Biology 123 and 124L and Chemistry 111L or 121L with a grade of C or better.

**Course Description:**

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.

**Student Learning Objectives:**

At the completion of this course:

1. Students will be familiar with microorganisms involved in infectious diseases
2. Students will be able to explain how infectious diseases can be treated and prevented.

**Required Learning Resources:**

**1. Text:** Foundations in Microbiology (Basic Edition) by Talaro, 9<sup>th</sup> edition, 2015, McGrawHill Publisher. You must have the access code for McGraw Hill Connect.

[http://connect.mheducation.com/class/m-chavez-smartstart-course\\_2](http://connect.mheducation.com/class/m-chavez-smartstart-course_2)

**2. 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 & changes to the syllabus posted on the webpage.***

**3. LearnSmart:** There is a LearnSmart assignment for every chapter covered. There will be ten homework assignments that must be completed on the McGraw Hill Connect webpage.

[http://connect.mheducation.com/class/m-chavez-smartstart-course\\_2](http://connect.mheducation.com/class/m-chavez-smartstart-course_2)

You will earn five points for completing the LearnSmart (LS) assignment and five points for each homework. You must complete all 10 homeworks and 10 of the LS assignments. If you do all of the chapters covered, you will earn extra credit. To earn full credit, you must do assignments and homework by the due date.

### Course Policies:

- **Attendance.** Attendance is necessary for you to participate in class as well as to fully understand the material presented. You are responsible for “signing-in” to document your attendance. This means getting to class on time, remaining for the **entire** class period, & actively participating. 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 present in class.
- **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 September 4, it will not appear on their transcript. After September 4 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.

### Special Needs:

Qualified students with disabilities needing appropriate academic adjustments should contact the instructor by the end of the 1<sup>st</sup> week of the semester to ensure that your needs are met in a timely manner.

### 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.

## 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
Written Reports	30 points
Connect LS and Hmk.	100 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 -- COURSE OUTLINE

	Chapter	Quiz
August 17 – September 9		
Main Themes of Microbiology .....	1	Aug. 31
Tools of the Laboratory .....	3	
Survey of Procaryotic Cells .....	4	
Microbial Nutrition, Ecology & Growth .....	7	

### \*\*\*EXAM I ----Monday, September 14\*\*\*

September 16 – October 7		
Introduction to Microbial Metabolism .....	8	Sept. 28
Microbial Genetics & Genetic Engineering .....	9 & 10	
Physical & Chemical Control of Microbes .....	11	
The Elements of Chemotherapy .....	12	

### \*\*\*EXAM II ----Monday, October 12\*\*\*

October 14 – November 11		
Microbe-Human Interactions .....	13	Oct. 26
Host Defenses .....	14 & 15	
Diagnosing Infections .....	17	

### \*\*\*EXAM III ---- Monday, November 16\*\*\*

November 18 – December 2		
Introduction to Viruses .....	6	Nov. 23
HIV Disease		

### \*\*\*FINAL EXAM – Wednesday, December 9 at 9:00 AM\*\*\*

\*I reserve the right to make needed and appropriate adjustments in this syllabus.

## Laboratory Portion

### Lab Description:

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.

### Required Text:

Microbiology: Laboratory Theory and Application by Leboffe and Pierce, 2012, 2<sup>nd</sup> edition, Morton Publishing.

### Student Learning Objectives:

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

- demonstrate basic microbiological techniques,
- describe microbes similar to those encountered in the clinical setting,
- demonstrate safety precautions in the laboratory,
- interpret results of microbiological tests,
- use their knowledge and critical thinking techniques to identify an unknown bacterium.

### Lab Policies:

- Attendance is necessary for you to participate in lab as well as to fully understand the material presented. This means getting to class on time and completing the exercises covered. Unless otherwise advised, after three 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 lab.
- Must read lab assigned prior to coming to the lab. There will be a 5 point pre-quiz that must be taken before Wednesday lab. This quiz is available through Blackboard Learn.
- There will be NO food or drink in the lab room.
- 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.

### Unknown Identification:

One of the major goals of this laboratory is for each student to identify an unknown organism using the skills, techniques and knowledge gathered throughout the semester. Therefore you will need to keep a laboratory notebook where you will record all of your results in an organized manner.

### Grading policy:

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

Quizzes (5 out of 6)	50 points
Pre-Quizzes (10 out of 11)	50 points
Lab Reports (10)	100 points
Unknown	50 points
Midterm Exam	80 points
Final Exam	100 points

## Laboratory Outline

Week	Day	Exercise
1	August 19	Lab Safety Exercise 1 – Fundamental Skills for the Microbiology Lab <b>Sections 1-1, 1-4, and 1-5</b>
2 Quiz 1	August 26	Exercise 2 – Microbial Growth <b>Sections 2-1, 2-2, and 2-8</b>
3	September 2	Exercise 3 – Microscopy and Staining <b>Sections 3-4 and 3-10</b>
4 Quiz 2	September 9	Exercise 3 – Microscopy and Staining <b>Section 3-6</b>
5	September 16	Exercise 3 – Microscopy and Staining <b>Sections 3-7, 3-8, 3-9, and 3-11</b>
6 Quiz 3	September 23	Exercise 4 – Selective Media <b>Sections 4-3 and 4-4</b>
7	September 30	Review for Midterm
8	October 7	<b>Midterm Exam</b>
9	October 14	Exercise 5 – Differential Tests <b>Sections 5-2, 5-8, and 5-9</b>
10	October 21	Exercise 5 – Differential Tests <b>Sections 5-12, 5-15, and 5-18</b>
11 Quiz 4	October 28	Exercise 5 – Differential Tests <b>Sections 5-4, 5-10, 5-11, 5-21, and 5-22</b>
12	November 4	Exercise 6 – Quantitative Techniques <b>Section 6-2</b> Exercise 7 – Medical Microbiology Introduction <b>Section 7-2</b>
13 Quiz 5	November 11	Exercise 9 – Identification of Unknown <b>Sections 9-1 and 9-2</b>
14	November 18	Exercise 9 – Identification of Unknown
15 Quiz 6	November 25	Review for Final Exam
16	December 2	<b>Final Exam</b>

**Please Ask Questions Anytime You Are Unsure of Anything!!! This Lab is not the place to be unsure.**