Microbiology for Health Science Students
Biology 239-501
Spring 2018
Syllabus

Meeting time and Place:

Lecture: Health Sciences Building, Room 101
Monday & Wednesday 9:00 – 10:15 a.m.

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 – Thursday 8:00 - 9:00 a.m.
Monday & Thursday 10:30 to Noon

Phone: 925-8613

E-mail: 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.

Course Student Learning Objectives:

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

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

Required Learning Resources:

1. **Text:**

   Foundations in Microbiology by Talaro, 9th edition, 2015, McGrawHill Publisher. The bookstore has a special edition of this book - Microbiology for Health Sciences and Non-Majors Course, Biology 239, University of New Mexico Valencia Campus, ISBN: 9781307044058

   Microbiology: Laboratory Theory and Application by Leboffe and Pierce, 2016, 3rd edition, Morton Publishing.

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.***

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.
- **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 September 8, it will not appear on their transcript. After September 8 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.

Tips for Success in Class:

- **Study habits.** Look and read the chapter outline before coming to lecture. Learn the vocabulary. It may take more than one reading to understand the chapter.
- **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 homework.

- **Learning Center.** The learning center has tutors ready to help Biology 123 students. Call the learning center at 925-8907 for available hours. They prefer to make appointments, but if they are not busy you may be able to drop in and find an available tutor. Appointments typically last one hour. Their website is http://valencia.unm.edu/campus-resources/the-learning-center/index.html.
- **Email netiquette.** Include an informative subject line (class and concern -- Bio 123, quiz 3); include a salutation and closing (sign your name); do not use IM or TXT spelling, but 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.

Special Needs:

Qualified students with disabilities needing appropriate academic adjustments should contact the instructor by the end of the 1st 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.

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). For more information on the campus policy regarding sexual misconduct, see: https://policy.unm.edu/university-policies/2000/2740.html.

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	60 points
Exam Reviews	75 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
January 17 – February 7		
Intro to Microbiology	None	
Survey of Procaryotic Cells	1	
Microbial Nutrition, Ecology & Growth	2	Jan. 29
Introduction to Microbial Metabolism	3	

*****EXAM I ----Monday, February 12*****

February 14 – March 7		
Microbial Genetics	4	
Physical & Chemical Control of Microbes	5	Feb. 26
The Elements of Chemotherapy	6	

Spring Break – No classes the week of March 12

*****EXAM II ----Monday, March 19*****

March 21 – April 18		
Microbe-Human Interactions	7	
Host Defenses	8 & 9	Apr. 2
Diagnosing Infections	10	Apr. 16

*****EXAM III ---- Monday, April 23*****

April 25– May 2		
Introduction to Viruses	11	
HIV Disease		

*****FINAL EXAM – Monday, May 7 at 9:00 a.m.*****

*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.

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 Wednesdays 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 (11)	110 points
Unknown	50 points
Midterm Exam	80 points
Final Exam	100 points

Laboratory Outline

Week	Day	Exercise
1	January 17	Lab Safety Exercise 1 – Fundamental Skills for the Microbiology Lab **Sections 1-2, 1-4, and 1-5**
2 **Quiz 1**	January 24	Exercise 2 – Microbial Growth **Sections 2-1, 2-2, and 2-8**
3	January 31	Exercise 3 – Microscopy and Staining **Sections 3-4 and 3-10**
4 **Quiz 2**	February 7	Exercise 3 – Microscopy and Staining **Section 3-6**
5	February 14	Exercise 3 – Microscopy and Staining **Sections 3-7, 3-8, 3-9, and 3-11**
6 **Quiz 3**	February 21	Exercise 4 – Selective Media **Sections 4-3 and 4-4**
7	February 28	Review for Midterm
8	March 7	**Midterm Exam**
9	March 14	***Spring Break – No Lab***
10	March 21	Exercise 5 – Differential Tests **Sections 5-2, 5-8, and 5-9**
11 **Quiz 4**	March 28	Exercise 5 – Differential Tests **Sections 5-12, 5-15, and 5-18**
12	April 4	Exercise 5 – Differential Tests **Sections 5-4, 5-10, 5-11, 5-21, and 5-22**
13 **Quiz 5**	April 11	Exercise 6 – Quantitative Techniques **Section 6-2** Exercise 7 – Medical Microbiology Introduction **Section 7-2**
14	April 18	Exercise 7 – Medical Microbiology Introduction **Section 7-3**
15 **Quiz 6**	April 25	Exercise 9 – Identification of Unknown **Sections 9-1 and 9-2** Review for Final Exam
16	May 2	**Final Exam**

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