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.

STUDENT LEARNING OBJECTIVES

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.

INSTRUCTOR

- 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 Noon
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.

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

THINGS TO KEEP IN MIND

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

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

**TIPS FOR SUCCESS**

**Study habits.** Look 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 homework.

**Learning Center.** Their website is [http://valencia.unm.edu/campus-resources/the-learning-center/index.html](http://valencia.unm.edu/campus-resources/the-learning-center/index.html).

**Email netiquette.** Include an informative subject line (class and concern -- Bio 110, 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.
# COURSE OUTLINE

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Quiz</th>
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</thead>
<tbody>
<tr>
<td>History of Microbiology</td>
<td>1</td>
</tr>
<tr>
<td>Characteristics Procaryotic Cells</td>
<td>3</td>
</tr>
<tr>
<td>Prokaryotic Diversity</td>
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</tr>
<tr>
<td>Microbial Growth</td>
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<tr>
<td>Microbial Metabolism</td>
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**August 20 – September 12**

**Labor Day – No classes on Monday, September 3**

***EXAM I ----Monday, September 17***

<table>
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<tr>
<th>Chapter</th>
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<tbody>
<tr>
<td>Microbial Genetics</td>
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<td>Control of Microbes</td>
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<td>Antimicrobial Drugs</td>
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<table>
<thead>
<tr>
<th>Chapter</th>
<th>Quiz</th>
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<tbody>
<tr>
<td>Microbial Mechanisms of Pathogenicity</td>
<td>15</td>
</tr>
<tr>
<td>Disease and Epidemiology</td>
<td>16</td>
</tr>
<tr>
<td>Host Defenses</td>
<td>17 &amp; 18</td>
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<td>Diagnosing Infections</td>
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</table>

***EXAM II ----Monday, October 15***

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Quiz</th>
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<tbody>
<tr>
<td>Acellular Pathogens</td>
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***FINAL EXAM – Wednesday, December 12 9:00 a.m.***

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

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.

⇒ Will identify an unknown bacteria from a used toothbrush.

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 Tuesdays 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.

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 (10 out of 11) 50 points
Lab Reports (11) 110 points
Unknown 50 points
Midterm Exam 80 points
Final Exam 100 points
<table>
<thead>
<tr>
<th>Week</th>
<th>Day</th>
<th>Exercise</th>
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| 1    | August 22 | Lab Safety  
Exercise 1 – Fundamental Skills for the Microbiology Lab  
Sections 1-2, 1-4, and 1-5 |
| 2    | August 29 | Exercise 2 – Microbial Growth  
Sections 2-1, 2-2, and 2-8 |
| Quiz 1 |     |          |
| 3    | September 5 | Exercise 3 – Microscopy and Staining  
Sections 3-4 and 3-10 |
| 4    | September 12 | Exercise 3 – Microscopy and Staining  
Section 3-6 |
| Quiz 2 |     |          |
| 5    | September 19 | Exercise 3 – Microscopy and Staining  
Sections 3-7, 3-8, 3-9, and 3-11 |
| 6    | September 26 | Exercise 4 – Selective Media  
Sections 4-3 and 4-4 |
| Quiz 3 |     |          |
| 7    | October 3 | Review for Midterm  
Midterm Exam |
| 8    | October 10 | Midterm Exam |
| 9    | October 17 | Exercise 5 – Differential Tests  
Sections 5-2, 5-8, and 5-9 |
| Quiz 4 |     |          |
| 10   | October 24 | Exercise 5 – Differential Tests  
Sections 5-12, 5-15, and 5-18 |
| 11   | October 31 | Exercise 5 – Differential Tests  
Sections 5-4, 5-10, 5-11, 5-21, and 5-22 |
| Quiz 5 |     |          |
| 12   | November 7 | Exercise 6 – Quantitative Techniques  
Section 6-2  
Exercise 7 – Medical Microbiology Introduction  
Section 7-2 |
| 13   | November 14 | Exercise 7 – Medical Microbiology Introduction  
Section 7-3 |
| Quiz 6 |     |          |
| 14   | November 21 | Exercise 9 – Identification of Unknown  
Sections 9-1 and 9-2 |
| 15   | November 28 | Review for Final Exam |
| 16   | December 5 | Final Exam |