

MB 302 – General Microbiology

Instructor: Dr. Kimberly Halsey Dr. Steve Giovannoni

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Office Hours: Tuesdays at 10:00 and Thurs at 1:00 or by appointment. Also available immediately after lecture MWF (for less involved questions)

Lecture: MWF 9:00-9:50 am (220 Learning Innovation Center)

Course pre-requisites: CH 331/332 and BI 21X series

Text: Prescott's *Microbiology* by Willey, Sherwood, Woolverton, 10th edition. Copies are on reserve in the library and may be checked out for 3-hour increments.

Lectures: Slides will be available via Canvas – expect to take notes in this class.

PART 1: Monday, Jan 8 through Monday, Jan. 29

Lecture subject	Associated reading (chapter: pages)
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Class Information, Introduction to Microbiology
Microscopy
Bacteria & Archaea: Introduction; Cell Envelopes
Bacteria & Archaea: Cell Walls
Bacteria & Archaea: Cell Components

Chapter 1: All
Chapter 2: All
3: 42-49, Section 3.5, **4:** 80-83
3: Section 3.4, **4:** 84
3: Section 3.6, **4:** Section 4.3

Quiz 1: Wednesday Jan. 17

Quiz 2: Friday Jan. 26

Midterm 1: Wednesday, Jan. 31

PART 2: Friday, Feb 2 through Wednesday, Feb. 21

Lecture subject	Associated reading (chapter: pages)
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Bacteria & Archaea: External Structures
Microbial Growth
Environmental factors
Nutrition
Microbial Metabolism

3: Section 3.7 and 3.8, **4:** Sections 4.4 and 4.5
7: 132-136, Sections 7.6, 7.7, 7.8, 7.9
7: Section 7.4, 7.5
3: 49-53, **11:** Section 11.1
10: All

Quiz 3: Friday Feb. 9

Quiz 4: Monday Feb. 19

Midterm 2: Friday, Feb. 23

PART 3: Mon, Feb. 26 through Friday, Mar. 16

Lecture subject	Associated reading (chapter: pages)
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Respiration & Fermentation
Phototrophy
The *Bacteria*

The *Archaea*

11: Sections 11.2-11.9
11: Section 11.11
21: All
22: All
20: 464-466, Section 20.2, 20.3, 20.4

Quiz 5: Monday Mar. 5

Quiz 6: Wednesday Mar. 14

Final Exam: Tuesday, Mar 20 12:00 – 1:50 pm – LInC 200

GRADING: Quizzes (5 of 6 x 20 points per quiz)	100 pts
Midterm I (Wed, Jan 31)	100 pts
Midterm II (Fri, Feb 23)	100 pts
<u>Final Exam (Tuesday, Mar 20)</u>	<u>150 pts</u>
TOTAL	450 pts

Quizzes:

- Quizzes will be given at the start of class on the dates provided in the calendar above. Quizzes are worth 20 points each, and the top five scores of the six quizzes will be used to calculate final grades. Quizzes will incorporate multiple choice and free response questions and will cover lectures since the previous exam or quiz.

Exams: Each midterm is worth 100 pts. The final is worth 150 pts and is **~1/3 cumulative**. Keep in mind that many terms/concepts carry through the entire course. Final grades are curved at instructor discretion. Scores are totaled at the end of the term and curved. Experience shows that scores *typically* distribute as follows, but keep in mind that this term could result in slightly different distributions.

≥ 85% A- and A

75 – 84.5% B-, B, B+

65 – 74.5% C-, C, C+

55 – 64.5% D-, D, D+

<54.5% F

Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at <http://ds.oregonstate.edu>. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

MB 302 Course Policies

- **No use of any electronic devices during exams**
- **The instructor reserves the right to assign seats, either for individual students or for the class as a whole, as deemed necessary during lecture or exams.**
- **Correspondence: Please do NOT email the professor with questions about course information that was previously discussed in class or in this syllabus**

The following information is summarized from the OSU Student Conduct Regulations:

Students are expected to be honest and ethical in their academic work. Academic dishonesty is defined as an intentional act of deception in one of the following areas:

*cheating- use/attempted use of unauthorized materials, information or study aids

*fabrication- falsification or invention of any information

*assisting- helping another commit an act of academic dishonesty

*tampering- altering or interfering with evaluation instruments and documents

*plagiarism- representing the words or ideas of another person as one's own

When evidence of academic dishonesty comes to the instructor's attention, the instructor will document the incident, permit the accused student to provide an explanation, advise the student of possible penalties, and take action. The instructor may impose any academic penalty up to and including an "F" grade in the course after consulting with his/her department chair and informing the student of the action taken.

The goal of Oregon State University is to provide students with the knowledge, skill and wisdom they need to contribute to society. Our rules are formulated to guarantee each student's freedom to learn and to protect

the fundamental rights of others. People must treat each other with dignity and respect in order for scholarship to thrive. Behaviors that are disruptive to teaching and learning will not be tolerated, and will be referred to the Student Conduct Program for disciplinary action. Behaviors that create a hostile, offensive or intimidating environment based on gender, race, ethnicity, color, religion, age, disability, marital status or sexual orientation will be referred to the Affirmative Action Office.

HOW TO SUCCEED IN THIS COURSE:

1. Attend class, be on time, and stay the entire period.
2. Be organized. Keep track of when quizzes and exams are scheduled.
3. Read assignments before class.
4. In the 5-10 minutes before class, skim the previous day's notes to put you in the proper mindset. This will also help with in-class questions.
5. Listen in class and take notes. Expect that information will be given in lecture that is **not** printed on powerpoint slides.
6. After class re-read the text to fill in any gaps in your understanding.
7. Expect a fair degree of memorization. Microbiology is a discipline with it's own language.
8. Before the exams, review/rewrite notes. Practice redrawing cycles, tables, and equations. Do not wait until the night before to cram for these exams.

STUDENT OUTCOMES FOR THE COURSE:

1. Retain specialized language relevant to microbiology.
2. Acquire an understanding of the fundamental concepts of microbiology including a detailed understanding of bacterial and archaean structures and physical characteristics and how they relate to cell capabilities.
3. Acquire a detailed understanding of metabolic diversity found in *Bacteria & Archaea*, and how these organisms derive energy, electrons, and carbon from their environment.
4. Acquire an understanding of the fundamental concepts associated with viruses including a detailed understanding of viral classification and replication.
5. Demonstrate an appreciation of the diversity of microorganisms, using specific examples.
6. Evaluate the benefits and detriments caused by microorganisms.
7. Demonstrate the ability to analyze and compare microbiological issues.