

MARIAN UNIVERSITY

Indianapolis

Bio 214 Microbiology 4 Credits

Semester and Year:

Online Instructor:

Email: Contact via Canvas email

Required Textbook(s):

Access Card: Includes the Virtual Lab and E-book

Talaro, K. P., & Chess, B. Connect and LearnSmart Labs Access Card for Foundations in Microbiology. New York: McGraw-Hill, 2017. Talaro, Kathleen Park. (Includes e-book - Foundations in Microbiology, 11e New York: McGraw-Hill, 2017.)

ISBN 9781260451320

Students are required to purchase the items listed above prior to the start of the course. Look into all of your options - new, used, rental or e-books. If you choose a rental option, be sure to understand the policies and the due dates for the returns. While you have the option to obtain your course materials from any source, ordering from the MU Book Store can be a convenient option. Please note that you can also charge bookstore purchases to your student account or use your MU financial aid if applicable. Visit the Marian bookstore.

Textbook Resources Website:

Accessing McGraw-Hill Connect Labs

1. Click McGraw-Hill Connect (left navigation) of our course
2. Click Begin
3. Click Register
4. Insert your email address
5. Insert your registration code or purchase the access directly here for \$122.50 USD

Additional Resources:

The Mother Teresa Hacklemeier Memorial Library at Marian University provides various databases <http://www.marian.edu/library/Pages/default.aspx>

Course Description

A study of bacteria, viruses, and other microorganisms; their morphology, development, and function; techniques of isolation, cultivation, and identification; with emphasis on structure, metabolism, role in disease, and immune responses to infection. Three lecture hours per week and three lab hours per

week. This course satisfies general education curriculum standards for the development of scientific knowledge.

Student Learning Objectives

Upon successful completion of this course, students will be able to:

1. Be able to list diverse forms of microbial life on the planet earth and key fundamental discoveries in microbiology that shaped our lives. Differentiate prokaryotic and eukaryotic organisms including non-cellular virus particles based on their unique characteristics and living conditions in nature.
2. Outline the currently used procedures applied to safely-handle microbiological samples in a hospital or clinical environment or during transport to an analytical laboratory.
3. Explain the appropriate physical, chemicals (e.g. alcohol, antimicrobials) and radiation procedures for the removal or suppression of growth of microbes in various materials including human tissue.
4. Describe standard procedures for microbial control that include but not limited to disinfection of living tissue by applying aseptic technique, or procedures for sterilizing surgical tools, and more broadly, pasteurization or quality control of products in health facilities and food or biotechnology industry.
5. Discuss various stages in the progression of disease caused by bacteria. Discuss bacteria-specific virulence factors required for entry, colonization or biofilm formation, and spread of infection by shedding as part of human waste.
6. Explain human-microbe interaction with an overview of the human immune system and how it defends against bacteria and viruses by various levels of innate and acquired immunity (vaccination).
7. Identify the importance of human resident microflora and its recently discovered links to human health. Discuss few examples of prevailing conditions which may allow opportunistic human pathogens to cause disease.
8. Outline some examples of human pathogens of global importance and their mode of infection. Methods useful for their isolation and identification, monitoring or source tracking of infectious diseases or epidemiology, and impact on public health and global economy will be discussed.

Teaching Strategies

Audios, discussion, assigned readings, web-based activities, and assignments

Assignments & Assessment Methods:

Performance assessment:	Total Points
4 lecture exams	400 points
4 lecture quizzes	100 points
7 homework assignments	175 points
5 discussion board	125 points
Viral Presentation	50 points
Lab Reports	120 points
Total	970 points

Methods of Evaluation

The student is expected to demonstrate competence through class participation, written exams, homework assignments, laboratory exercises, and written and oral presentations.

Grading Scale

The grading scale for this course is:

Letter Grade	Percentage
A	94-100%
A-	90-93.9%
B+	87-89.9%
B	83-86.9%
B-	80-82.9%
C+	77-79.9%
C	73-76.9%
C-	70-72.9%
D+	65-69.9%
D	60-64.9%
F	<60%

Course Policies:

Late Policy & Due Date Extensions: Acceptance of work submitted past the due date or requests of due date extensions, including exams, may be considered in the event of unforeseen, documented hardships, such as medical emergencies, documentable technical issues, death of a loved one, etc. However, simply forgetting, time zone differences, going on vacation, or not performing a well as intended are not acceptable excuses.

Exam Retakes: Exams retakes are different than requesting and being granted an extension on an exam. There are no exam retakes allowed in this course. Once you open an exam, you're stating that you have prepared adequately for the exam and you're accepting the results of the exam.

Extra Credit: There is no extra credit in this course.

Student Handbook

Please refer to the MAP Student Resources and Student Support Resources modules for information regarding academic and school of policies including Services for Students with Disabilities.

****Any changes to this syllabus will be communicated to the students.**