Fall 2018 Syllabus

Course Code: BI-430L

I. Instructor Information

Dr. Frederique Kandel
Assistant Professor
Office: Henry 123B
Office hours: M:11:00-Noon & 2:30pm-5:30pm; W:11-Noon; and by appointment.
frederique.kandel@chaminade.edu

II. Course Information

TH 2:30PM - 5:20PM
Eiben Hall, Room 202

III. Text: ISBN-13: 978-0-13-460518-0
Microbiology: An Introduction, By Gerard J. Tortora, Berdell R. Funke, Christine L. Case, Derek Weber, 13th edition. If you have the previous edition it can be used instead but the access to Mastering Microbiology you will use for homework corresponds to the 13th edition. Alternatively you can obtain a digital edition with mastering access ISBN-13: 978-0-13-472935-0.
Supplemental material will be supplied as needed using canvas posts or hard copies.

IV. Course Title: BI-430-01-1 Microbiology.

V. Course Description: This 400 level course aims to give you the foundations in microbiology you will need regardless of your professional goal: medical profession, environmental or forensic science.
We will use lecture, group discussions, scientific papers, popular articles, student presentations, homework, and mini-quizzes to support your learning.

You are expected to spend at least three hours studying outside of class for each hour you spend in class.
The homework assignments will help you review, clarify and sometime expand on the material discussed in class.
Note: This class is paired with a laboratory course: BI 430L where you will experience hands-on applications of some of the concepts explored in class.

VI. Learning Outcomes.

Departmental learning outcomes:
1. An understanding of the scientific method and the ability to design and test a hypothesis;
2. The ability to visualize, statistically evaluate, validate and interpret scientific data, and to communicate science effectively both orally and in writing;
3. The ability to acquire and comprehend information from published scientific literature and to employ computational resources in the resolution of biological problems;
4. An understanding of the chemical and physical principles that unite all life forms, and of biological organization at the molecular, cellular, tissue, organ, organism and system levels;
5. The ability to define the components and processes of genetic and epigenetic information transmission, and their determinant effects on the adaptive and evolutionary processes that they drive;
6. An understanding of the etiology of major human disease burdens in terms of pathophysiological mechanisms, epidemiology within populations and possible therapeutic approaches
7. An understanding of the entry requirements, career pathways and progression for the major post-graduate fields of research, education and the health professions.

BI 430 class learning outcomes:

Upon Completion of this course, students will be able to:		Program outcome link.
1	List and explain the steps of the scientific method	1, 2, 3
2	Compare and contrast prokaryotes, eukaryotic microbes and viruses.	1, 2, 4, 6
3	Classify microorganisms according to current understanding of taxonomy.	1, 4, 6
4	Discuss the importance of microorganisms both in term of benefit and threat to humans and other animals' health.	1, 2, 3, 4, 5, 6
5	Explain the basic principles microbial metabolism and microbial genetics and assess the benefit and risks of genetic engineering.	1, 3, 4, 5, 6
6	Summarize the structure and function of the immune system and compare and contrast nonspecific and acquired immunity.	1, 5 , 6
7	List and explain current strategies used to diagnose infections	1, 2, 3, 4, 5, 6
8	Organize infectious diseases by affected system.	1, 3, 4, 5, 6
9	Illustrate how human health and environmental conditions interact.	1, 3, 4, 5, 6

VII. Course Elements/schedule (instructor may modify the schedule as needed).

Week	Day	Date	Chapter (s) / Key topic(s)
1	Monday	8/20/2018	Introduction to the course. 1 The Microbial World and You
1	Wednesday	8/22/2018	3: Observing Microorganisms Through a Microscope
1	Friday	8/24/2018	10: Classification of Microorganisms (Part 1: intro) and Chap 4
2	Monday	8/27/2018	4: Functional Anatomy of Prokaryotic and Eukaryotic Cells
2	Wednesday	8/29/2018	6: Microbial Growth
2	Friday	8/31/2018	6: Microbial Growth
3	**Monday**	**9/3/2018**	**Labor Day no class**
3	Wednesday	9/5/2018	7: The Control of Microbial Growth
3	Friday	9/7/2018	7: The Control of Microbial Growth
4	Monday	9/10/2018	8: Microbial Genetics
4	Wednesday	9/12/2018	8: Microbial Genetics
4	Friday	9/14/2018	9: Biotechnology and DNA Technology
5	Monday	9/17/2018	9: Biotechnology and DNA Technology
5	Wednesday	9/19/2018	10: Classification of Microorganisms (part 2)
5	Friday	9/21/2018	11: The Prokaryotes: Domains Bacteria and Archaea
6	Monday	9/24/2018	12: The Eukaryotes: Fungi, Algae, Protozoa, and Helminths
6	Wednesday	9/26/2018	13: Viruses, Viroids, and Prions
6	Friday	9/28/2018	5: Microbial Metabolism
7	Monday	10/1/2018	5: Microbial Metabolism
7	Wednesday	10/3/2018	5: Microbial Metabolism
7	**Friday**	**10/5/2018**	**MIDTERM**
8	**Monday**	**10/8/2018**	**Discoverer's Day no class**
8	Wednesday	10/10/2018	14: Principles of Disease and Epidemiology
8	Friday	10/12/2018	15: Microbial Mechanisms of Pathogenicity
9	Monday	10/15/2018	15: Microbial Mechanisms of Pathogenicity
9	Wednesday	10/17/2018	16: Innate Immunity: Nonspecific Defenses of the Host
9	Friday	10/19/2018	17: Adaptive Immunity: Specific Defenses of the Host
10	Monday	10/22/2018	18: Practical Applications of Immunology
10	Wednesday	10/24/2018	19: Disorders Associated with the Immune System
10	Friday	10/26/2018	20: Antimicrobial Drugs
11	Monday	10/29/2018	20: Antimicrobial Drugs
11	Wednesday	10/31/2018	21-26 Infectious Diseases Affecting various body Systems
11	Friday	11/2/2018	21-26 Infectious Diseases Affecting various body Systems
12	Monday	11/5/2018	21-26 Infectious Diseases Affecting various body Systems
12	Wednesday	11/7/2018	21-26 Infectious Diseases Affecting various body Systems
12	Friday	11/9/2018	21-26 Infectious Diseases Affecting various body Systems
13	Monday	11/12/2018	21-26 Infectious Diseases Affecting various body Systems
13	Wednesday	11/14/2018	21-26 Infectious Diseases Affecting various body Systems
13	Friday	11/16/2018	27: Environmental Microbiology
14	Monday	11/19/2018	27: Environmental Microbiology
14	Wednesday	11/21/2018	27: Environmental Microbiology
14	**Friday**	**11/23/2018**	**Thanksgiving no class**
15	Monday	11/26/2018	28: Applied and Industrial Microbiology (overview if time permits)
15	Wednesday	11/28/2018	28: Applied and Industrial Microbiology (overview if time permits)
15	**Friday**	**11/30/2018**	Conclusion. Last day of instruction
	Monday	**12/3/2018**	**FINAL EXAM 11am to 1pm**

VIII. Grading Scale

A	Excellent	>90%
B	Good	≥80% <90%
C	Average	≥70% <80%
D	Below Average	≥60% <70%
F	Failure	<60%

IX. Assignments and Grading

	Points	% Of Grade	Due Date
Homework	100	*20*	as Assigned
Midterm	100	*20*	10/05/2018 (tentative date)
Exam 2/Presentation	100	*20*	Date to be determined
Final (comprehensive)	100	*20*	12/03/2018
Attendance/participation	100	*20*	Continuous evaluation including mini-quizzes
Total	***500***	***100***	

XI. Additional Departmental and University Polices

1. Electronic Devices

Use of music devices and cell phones is prohibited during all Natural Science and Mathematics classes at Chaminade, unless specifically permitted by your instructor. Use of cellphones and music devices in laboratories is a safety issue. In addition, use of cellphones and music devices in any class is discourteous and may lead to suspicion of academic misconduct. Students who cannot comply with this rule will be asked to leave class and may be subject to laboratory safety violation fines. You will be asked to leave class and marked absent if you do not comply. This will negatively affect your grade. Please refer any questions to the Dean of Natural Sciences and Mathematics.

2. ADAA Statement

2.1 Pursuant to several federal and state laws, including the Americans with Disabilities Act of 1990, as amended by the ADA Amendments Act of 2008, and Section 504 of the Rehabilitation Act of 1973, all qualified students with disabilities are protected from discrimination on basis of disability and are eligible for reasonable accommodations or modifications in the academic environment to enable them to enjoy equal access to academic programs, services, or activities. If a student would like to determine if they meet the criteria for accommodations, they should contact the Counseling Center at 808-735-4845 for further information.

3. Attendance

3.1 Students are expected to attend regularly all courses for which they are registered. Students should notify their instructors when illness or other extenuating circumstances prevents them from attending class and make arrangements to complete missed assignments. Notification may be done by emailing the instructor's Chaminade email address or by leaving a message with the instructor's division office (Natural Science and Mathematics 1 (808) 440-4204). It is the instructor's prerogative to modify deadlines of course requirements accordingly. Any student who stops attending a course without officially **withdrawing** may receive a failing grade.

3.2 Unexcused absences equivalent to more than a week of classes may lead to a grade reduction for the course. Any unexcused absence of two consecutive weeks or more may result in being **withdrawn** from the course by the instructor, although the instructor is not required to **withdraw** students in that scenario. Repeated absences put students at risk of failing grades.

4. Policy on Make-Up Tests

Make-Up test will be granted **only in case of excused absence.**

5. Policy on Communication

5.1 The University provides a Chaminade email address for all students. Official Chaminade communications will be sent to the students' Chaminade email address and instructors will use only this email to communicate with students. It is the responsibility of the student to check their email frequently. Report email-related problems to the Helpdesk at 808-735-4855 or helpdesk@chaminade.edu.

6. Laboratory Safety Information

The following guidelines are established to provide instructions in maintaining safety for students, staff, and faculty while using any of the science laboratories at Chaminade University. The Division of Natural Sciences and Mathematics (NSM), along with the University Environmental Safety Office are responsible for enforcing the regulations set forth in the current Student Handbook. Queries should be addressed to: Dean of Natural Sciences and Mathematics (808) 440-4204; Environmental Safety Officer (808) 739-4811

7. Title IX Declaration

Chaminade University of Honolulu recognizes the inherent dignity of all individuals and promotes respect for all people. Sexual misconduct, physical and/or psychological abuse will NOT be tolerated at CUH. If you have been the victim of sexual misconduct, physical and/or psychological abuse, we encourage you to report this matter promptly. As a faculty member, I am interested in promoting a safe and healthy environment, and should I learn of any sexual misconduct, physical and/or psychological abuse, I must report the matter to the Title IX Coordinator. Should you want to speak to a confidential source you may contact the following:

• Chaminade Counseling Center| 808 735-4845.

• Any priest serving as a sacramental confessor or any ordained religious leader serving in the sacred confidence role.

8. Academic Honesty

Students are expected to have read and to abide by the "Student Rules of Conduct" which are available in your copy of Chaminade University's Student Handbook. Cheating in the form of plagiarism, collusion, deception and will not be tolerated and will negatively affect your grade.

9. The instructor may modify elements of this syllabus according to the operational needs of the class.