



**Chaminade**  
**University**  
OF HONOLULU

## Course Syllabus

[Chaminade University Honolulu](http://www.chaminade.edu)

3140 Waialae Avenue - Honolulu, HI 96816

[www.chaminade.edu](http://www.chaminade.edu)

**Course Number:** BI-162-01-1

**Course Title:** General Microbiology

**Department Name:** Biology

**College/School/Division Name:** NSM

**Term:** Spring 2025

**Course Credits:** 3

**Class Meeting Days:** T-TH

**Class Meeting Hours:** 11:30 AM - 12:50 AM

**Class Location:** Clarence T.C. Ching Hall, 254

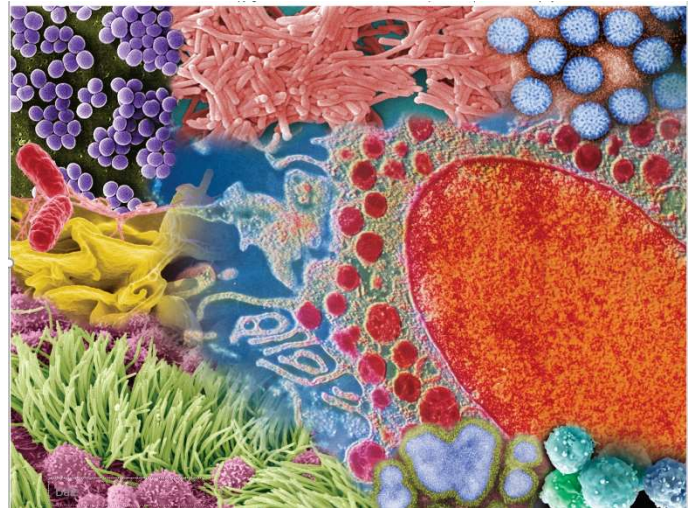
**Instructor:** Frederique Kandel, PhD.

**Email:** [frederique.kandel@chaminade.edu](mailto:frederique.kandel@chaminade.edu)

**Phone:** 808.739.8376

**Office Location:** Henry Hall 7

**Office Hours:** Wed 1:30 pm to 2:20pm and by appointment.



### University Course Catalog Description

An introduction to microbiology, with special emphasis on human health. Topics covered include basic metabolism and microbial growth, sterilization and disinfection, host-microorganism interactions, the immune response, and a survey of pathogenic microorganisms and their mode of action. Concurrent registration in BI 162L required.

### Course Overview

The COVID-19 pandemic has reinforced the narrative that microbes are simply enemies to combat. Although this certainly remains true for numerous pathogens, we now understand that humans live in symbiosis with a microbiome also capable of contributing positively to our health. Technical advances are currently revealing the presence of a staggering number of previously unknown microorganisms present in our environment. In addition, we have the capability of using microorganisms to produce drugs, human hormones or to remediate pollution. A greater understanding of our complex relationship with the microbial world is now emerging. This class will introduce microbiology in this context, while also placing an emphasis on clinical approach relevant to future health professionals. As nursing students, the material studied in BI-162 is directly relevant to your professional goals. The laboratory taken concomitantly with the lecture will offer opportunities for hands-on projects and experiments to reinforce your understanding and provide training in aseptic techniques.

## **Marianist Values**

This class represents one component of your education at Chaminade University of Honolulu. An education in the Marianist Tradition is marked by five principles and you should take every opportunity possible to reflect upon the role of these characteristics in your education and development:

1. Education for formation in faith
2. Provide an integral, quality education
3. Educate in family spirit
4. Educate for service, justice and peace
5. Educate for adaptation and change

## **Native Hawaiian Values**

Education is an integral value in both Marianist and Native Hawaiian culture. Both recognize the transformative effect of a well-rounded, value-centered education on society, particularly in seeking justice for the marginalized, the forgotten, and the oppressed, always with an eye toward God (Ke Akua). This is reflected in the 'Olelo No'eau (Hawaiian proverbs) and Marianist core beliefs:

1. Educate for Formation in Faith (Mana) E ola au i ke akua ('Olelo No'eau 364) May I live by God
2. Provide an Integral, Quality Education (Na'auao) Lawe i ka ma'alea a kū'ono'ono ('Olelo No'eau 1957) Acquire skill and make it deep
3. Educate in Family Spirit ('Ohana) 'Ike aku, 'ike mai, kōkua aku kōkua mai; pela iho la ka nohana 'ohana ('Olelo No'eau 1200) Recognize others, be recognized, help others, be helped; such is a family relationship
4. Educate for Service, Justice and Peace (Aloha) Ka lama kū o ka no'eau ('Olelo No'eau 1430) Education is the standing torch of wisdom
5. Educate for Adaptation and Change (Aina) 'A'ohe pau ka 'ike i ka hālau ho'okahi ('Olelo No'eau 203) All knowledge is not taught in the same school

## **Learning Outcomes**

### **Biology program learning outcome**

1. Apply the scientific method in the design and testing of hypotheses
2. Transform and display, statistically evaluate, validate, and interpret scientific data and communicate the results of such analyses effectively both orally and in writing.
- 3.. Acquire and comprehend information from published scientific literature, databases and bioinformatics software to extract and interpret biological data
4. Recognize the chemical and physical principles that underlie all life forms, and the biological organization at the molecular, cellular, tissue, organ, organism, and system levels that emerge from these principles
5. 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. Integrate an awareness of bioethical issues to positively influence the application of science to service, justice and peace in the solution of societal problems

## BI 162 learning outcomes

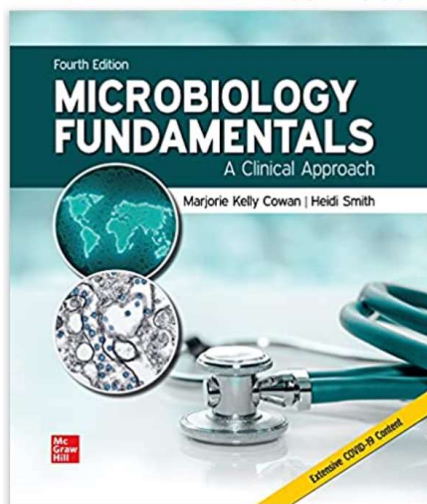
<i>Upon Completion of this course, students will be able to:</i>		Program outcome	Marianist and Hawaiian values
1	List and explain the steps of the scientific method	1	2,3,4,5
2	Compare and contrast prokaryotes, eukaryotic microbes and viruses.	4	2,3,4,5
3	Classify microorganisms according to current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

### Course Prerequisites

Prerequisites: priority will be given to students accepted in the CUH Nursing Major.

## Required Learning Materials

The material required for the class BI16 and the corresponding laboratory BI162L is an access to McGraw-Hill "Connect" with the text *Microbiology Fundamentals: A Clinical Approach*, 4th Edition. The most economical option is to buy the **ACCESS CARD** to connect (ISBN10: 126078603X | ISBN13: 9781260786033) includes the e-book from our bookstore, or to get a direct access from McGraw Hill link in Canvas, or directly from McGraw Hill at [McGraw Hill Higher Education \(mheducation.com\)](http://McGraw Hill Higher Education (mheducation.com)) (ISBN10: 1260786048 | ISBN13: 9781260786040)  
Additional material will be supplied as needed using canvas.



Course Website:

<https://chaminade.instructure.com/courses/37622>

Technical Assistance for Canvas Users:

- Search for help on specific topics or get tips in [Canvas Students](#)
- [Live chat with Canvas Support for students](#)
- Canvas Support Hotline for students: +1-833-209-6111
- Watch this [video to get you started](#)
- [Online tutorials](#): click on "Students" role to access tutorials
- Contact the Chaminade IT Helpdesk for technical issues: [helpdesk@chaminade.edu](mailto:helpdesk@chaminade.edu) or call (808) 735-4855

## Kōkua 'Ike: Tutoring & Learning Services

Chaminade is proud to offer free, one-on-one tutoring and writing assistance to all students. Tutoring and writing help is available on campus at Kōkua 'Ike: Center for Student Learning in a variety of subjects (including, but are not limited to biology, chemistry, math, nursing, English, etc.) from trained Peer and Professional Tutors. Please check [Kōkua 'Ike's](#) website for the latest times, list of drop-in hours, and information on scheduling an appointment. Free online tutoring is also available via TutorMe. Tutor Me can be accessed 24/7 from your Canvas account. Simply click on Account > TutorMe. For more information, please contact Kōkua 'Ike at [tutoring@chaminade.edu](mailto:tutoring@chaminade.edu) or 808-739-8305.

## Assessment

	% of grade	Due Date
Assignments	20	Homework after each chapter. Announced in canvas
Exam 1	23	2/6/2025
Exam 2	23	3/25/2025
Final exam (comprehensive)	25	TBA
Attendance/participation	9	Ongoing evaluation

## Grading Scale

Letter grades are given in all courses except those conducted on a credit/no credit basis. Grades are calculated from the student's daily work, class participation, quizzes, tests, term papers, reports and the final examination. They are interpreted as follows:

- A Outstanding scholarship and an unusual degree of intellectual initiative
- B Superior work done in a consistent and intellectual manner
- C Average grade indicating a competent grasp of subject matter
- D Inferior work of the lowest passing grade, not satisfactory for fulfillment of prerequisite course work
- F Failed to grasp the minimum subject matter; no credit given

## Course Policies

### Late Work Policy

Assignments must be submitted by the due date. In case of issues, contact the instructor as soon as possible.

### Grades of "Incomplete"

As per catalog policy, under exceptional circumstances the instructor can grant an incomplete grade. The work will have to be completed within 90 days.

### Instructor and Student Communication

Please use your Chaminade email or canvas to communicate with the instructor via email outside the class. Response time will be within four business days. In-person and Zoom conferences can be arranged.

### Cell phones, tablets, and laptops

Out of consideration for your classmates, please set your cell phone to silent mode during class. Students are encouraged to bring laptops or tablets to class as the instructor will assign online activities and readings that will require the use of a laptop or tablet. Laptops and tablets should not be misused, such as checking distracting websites. Use your best judgment and respect your classmates and instructor.

## **Attendance Policy**

The following attendance policy is from the 2019-2020 Academic Catalog (p. 54-55). Faculty members should also check with their divisions for division-specific guidelines.

Students are expected to attend regularly all courses for which they are registered. Student 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, calling the instructor's campus extension, or by leaving a message with the instructor's division office. 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.

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.

Students with disabilities who have obtained accommodations from the Chaminade University of Honolulu Tutor Coordinator may be considered for an exception when the accommodation does not materially alter the attainment of the learning outcomes.

Federal regulations require continued attendance for continuing payment of financial aid. When illness or personal reasons necessitate continued absence, the student should communicate first with the instructor to review the options. Anyone who stops attending a course without official withdrawal may receive a failing grade or be withdrawn by the instructor at the instructor's discretion.

## **Academic Conduct Policy**

### **Student Conduct Policy**

From the 2019-2020 Undergraduate Academic Catalog (p. 39): Campus life is a unique situation requiring the full cooperation of each individual. For many, Chaminade is not only a school, but a home and a place of work as well. That makes it a community environment in which the actions of one students may directly affect other students. Therefore, each person must exercise a high degree of responsibility. Any community must have standards of conduct and rules by which it operates. At Chaminade, these standards are outlined so as to reflect both the Catholic, Marianist values of the institution and to honor and respect students as responsible adults. All alleged violations of the community standards are handled through an established student conduct process, outlined in the Student Handbook, and operated within the guidelines set to honor both students' rights and campus values.

Students should conduct themselves in a manner that reflects the ideals of the University. This includes knowing and respecting the intent of rules, regulations, and/or policies presented in the Student Handbook, and realizing that students are subject to the University's jurisdiction from the time of their admission until their enrollment has been formally terminated. Please refer to the Student Handbook for more details. A copy of the Student Handbook is available on the Chaminade website under Student Life.

For further information, [please refer to the Chaminade Catalogue](#).

## **Academic Honesty**

Academic honesty is an essential aspect of all learning, scholarship, and research. It is one of the values regarded most highly by academic communities throughout the world. Violations of the principle of academic honesty are extremely serious and will not be tolerated.

Students are responsible for promoting academic honesty at Chaminade by not participating in any act of dishonesty and by reporting any incidence of academic dishonesty to an instructor or to a University official. Academic dishonesty may include theft of records or examinations, alteration of grades, and plagiarism, in addition to more obvious dishonesty.

Questions of academic dishonesty in a particular class are first reviewed by the instructor, who must make a report with recommendations to the Dean of the Academic Division. Punishment for academic dishonesty will be determined by the instructor and the Dean of Academic Division and may include an "F" grade for the work in question, an "F" grade for the course, suspension, or dismissal from the University.

For the most up to date information, please refer to the [Academic Honesty Policy](#) on the Chaminade University Catalog website.

## **Credit Hour Policy**

The unit of semester credit is defined as university-level credit that is awarded for the completion of coursework. One credit hour reflects the amount of work represented in the intended learning outcomes and verified by evidence of student achievement for those learning outcomes. Each credit hour earned at Chaminade University should result in a minimum of 45 hours of engagement, regardless of varying credits, duration, modality, or degree level. This equates to one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately fifteen weeks for one semester. Terms that have alternative lengths, such as 10 week terms, should have an equivalent amount of faculty instruction and out-of-class student work to meet each credit hour. Direct instructor engagement and out-of-class work result in total student engagement time of 45 hours for one credit. The number of engagement hours may be higher, as needed to meet specific learning outcomes.

### **Specific Credit Situations**

The minimum 45 hours of engagement per credit hour can be satisfied in fully online, internship, or other specialized courses through several means, including (a) regular online instruction or interaction with the faculty member and fellow students and (b) academic engagement through extensive reading, research, online discussion, online quizzes or exams; instruction, collaborative group work, internships, laboratory work, practica, studio work, and preparation of papers, presentations, or other forms of assessment. This policy is in accordance with federal regulations and regional accrediting agencies.

This is a three-credit hour course requiring 135 clock hours of student engagement, per the official CUH Credit Hour Policy. Students enrolled in this course are expected to spend:

- 36 hours in class (This includes 2 hours of final exam on campus),
- 49 hours reading the textbook, class notes, assigned articles and preparing summary of the covered material.
- 30 hours completing connect homework and other assignments.
- 6 hours reviewing for exam 1,
- 6 hours reviewing for exam 2,
- 8 hours reviewing for the final exam.

## **Title IX and Nondiscrimination Statement**

Chaminade University of Honolulu is committed to providing a learning, working and living environment that promotes the dignity of all people, inclusivity and mutual respect and is free of all forms of sex discrimination and gender-based violence, including sexual assault, sexual harassment, gender-based harassment, domestic violence, dating violence, and stalking. As a member of the University faculty, I am required to immediately report any incident of sex discrimination or gender-based violence to the campus Title IX Coordinator.

## **Nondiscrimination Policy & Notice of Nondiscrimination**

Chaminade University of Honolulu does not discriminate on the basis of sex and prohibits sex discrimination in any education program or activity that it operates, as required by Title IX and its regulations, including in admission and employment. Inquiries about Title IX may be referred to the University's Title IX Coordinator, the U.S. Department of Education's Office for Civil Rights, or both and contact information may be found at the [Chaminade University Title IX Office Contact Information and Confidential Resources website](#). On-campus Confidential Resources may also be found here at [CAMPUS CONFIDENTIAL RESOURCES](#).

The University's Nondiscrimination Policy and Grievance Procedures can be located on the University webpage at: <https://chaminade.edu/compliance/title-ix-nondiscrimination-policies-procedures/>.

To report information about conduct that may constitute sex discrimination or make a complaint of sex discrimination under Title IX, please refer to the [Campus Incident Report form](#). Chaminade University of Honolulu prohibits sex discrimination in any education program or activity that it operates. The NOTICE of NONDISCRIMINATION can be found here: [Notice of Nondiscrimination](#).

## **CUH Alert Emergency Notification**

To get the latest emergency communication from Chaminade University, students' cell numbers will be connected to Chaminade's emergency notification text system. When you log in to the Chaminade portal, you will be asked to provide some emergency contact information. If you provide a cellphone number, you will receive a text from our emergency notification system asking you to confirm your number. You must respond to that message to complete your registration and get emergency notifications on your phone.



## Assessment for Student Work

With the goal of continuing to improve the quality of educational services offered to students, Chaminade University conducts assessments of student achievement of course, program, and institutional learning outcomes. Student work is used anonymously as the basis of these assessments, and the work you do in this course may be used in these assessment efforts.

## Student with Disabilities Statement

Chaminade University of Honolulu offers accommodations for all actively enrolled students with disabilities in compliance with Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) of 1990, and the ADA Amendments Act (2008).

Students are responsible for contacting Kokua Ike: Center for Student Learning to schedule an appointment. Verification of their disability will be requested through appropriate documentation and once received it will take up to approximately 2–3 weeks to review them. Appropriate paperwork will be completed by the student before notification will be sent out to their instructors. Accommodation paperwork will not be automatically sent out to instructors each semester, as the student is responsible to notify Kokua Ike via email at [ada@chaminade.edu](mailto:ada@chaminade.edu) each semester if changes or notifications are needed.

## Schedule (tentative).

		Subject	Chapter
Tuesday	1/7/2025	Introduction to course	1
Thursday	1/9/2025	Introduction to Microbes and Their Building Blocks.	1
Tuesday	1/14/2025	Tools/Methods for the Culturing and observation of Microorganisms	2
Thursday	1/16/2025	Tools/Methods for the Culturing and observation of Microorganisms	2
Tuesday	1/21/2025	Bacteria and Archaea	3
Thursday	1/23/2025	Bacteria and Archaea	3
Tuesday	1/28/2025	Eukaryotes	4
Thursday	1/30/2025	Eukaryotes	4
Tuesday	2/4/2025	Viruses and Prions	5
Thursday	2/6/2025	<b>Exam 1 (tentative date)</b>	
Tuesday	2/11/2025	Viruses and Prions	5
Thursday	2/13/2025	Microbial Nutrition and Growth	6
Tuesday	2/18/2025	Microbial Metabolism	7
Thursday	2/20/2025	Microbial Metabolism	7
Tuesday	2/25/2025	Microbial Metabolism	7
Thursday	2/27/2025	Microbial Genetics and Genetic Engineering	8
Tuesday	3/4/2025	Microbial Genetics and Genetic Engineering	8
Thursday	3/6/2025	Physical and Chemical Control of Microbes	9
Tuesday	3/11/2025	Physical and Chemical Control of Microbes	9
Thursday	3/13/2025	Antimicrobial Treatment	10

Tuesday	3/18/2025	Spring break no class	
Thursday	3/20/2025	Spring break no class	
Tuesday	3/25/2025	<b>Exam 2 (tentative date)</b>	
Thursday	3/27/2025	Antimicrobial Treatment	10
Tuesday	4/1/2025	Antimicrobial Treatment	10
Thursday	4/3/2025	Interactions between microbes and humans	11
Tuesday	4/8/2025	Interactions between microbes and humans	11
Thursday	4/10/2025	Interactions between microbes and humans	11
Tuesday	4/15/2025	Overview of immunity	12 to 14
Thursday	4/17/2025	Overview of immunity	12 to 14
Tuesday	4/22/2025	diagnosing infections	15
Thursday	4/24/2025	diagnosing infections	15

**Final exam date: TBA. We will follow the University general Final exam schedule.**

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