



## School of Art and Science

### Biology

## BI-162 General Microbiology

Ching Hall 254 | T-TH 8:30am to 9:50am | Credits:3 Section: 02-1 | Term: Fall 2026

### Instructor Information

|                 |                                                |
|-----------------|------------------------------------------------|
| Instructor      | <i>Frederique Kandel</i>                       |
| Email           | <i>Frederique.kandel@chaminade.edu</i>         |
| Phone           | <i>808.739.8376</i>                            |
| Office Location | <i>Wesselkamper 106</i>                        |
| Office Hours    | <i>Tuesdays 10:30am-Noon or by appointment</i> |

### Communication

The best way to reach me outside class is via the email above. Expect a response within two to three business days.

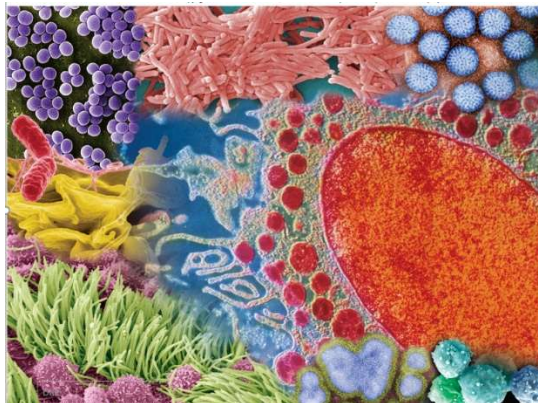
### School & Department

|            |                                                   |
|------------|---------------------------------------------------|
| School     | School of Art and Science                         |
| Location   | <b>Wesselkamper, Room 116</b>                     |
| Phone      | (808) 440-4204                                    |
| Questions? | Contact your instructor or the Biology Department |

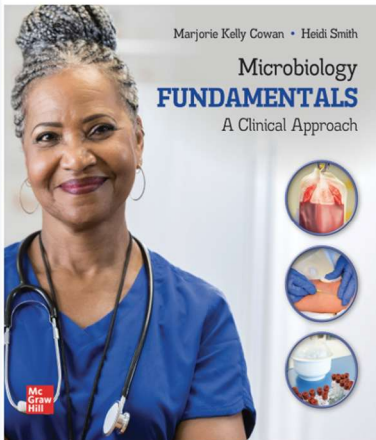
### Course Description & Materials

#### 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 Snapshot

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Modality           | Face-to-Face                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Meeting Location   | Ching Hall 254                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Meeting Days/Times | Tuesday and Thursdays 8:30am to 9:20am                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Time Allocation    | <p><b>This is a three-credit hour course requiring 135 clock hours of student engagement</b>, per the official CUH Credit Hour Policy. Students enrolled in this course are expected to spend approximately:</p> <ul style="list-style-type: none"> <li>-43 hours in class</li> <li>-49 hours reading the textbook, class notes, assigned articles and preparing summary of the covered material.</li> <li>-23 hours completing connect homework and other assignments.</li> <li>-6 hours reviewing for exam 1,</li> <li>-6 hours reviewing for exam 2,</li> <li>-8 hours reviewing for the final exam.</li> </ul>                   |
| Required Materials | <p>Microbiology Fundamentals: A Clinical Approach. 4rd Edition.<br/> <b>ISBN: 1260786048 Release: 2025</b></p>  <p>The most economical option is to buy the ACCESS CARD to connect (includes the e-book) from either our bookstore, the McGraw Hill link in Canvas, or directly from McGraw Hill at <a href="https://mheducation.com">McGraw Hill Higher Education (mheducation.com)</a></p> <p>Additional material will be supplied as needed using canvas.<br/> <b>(Note: for two weeks you can start by using free access to connect.)</b></p> |
| Canvas             | <p>Course materials, announcements, and grades are posted to Canvas (<a href="https://chaminade.instructure.com">chaminade.instructure.com</a>). The course canvas URL is:<br/> <a href="https://chaminade.instructure.com/courses/46522">https://chaminade.instructure.com/courses/46522</a></p> <p>Look under module to see the documents and assignments week by week. The most recent week will always be on top.</p>                                                                                                                                                                                                            |

## Learning Outcomes

### Program Learning Outcomes (PLOs)

Upon completion of [degree program name], the student will be able to:

1. Explain fundamental biological concepts and their interrelationships across various levels of biological organization, from molecules to ecosystems, including cell biology, genetics, evolution, physiology, and ecology.

2. Perform laboratory, field and computational techniques relevant to biological research, including accurate data collection, analysis, and interpretation.
3. Design and conduct scientific investigations using advanced methodologies, technologies, and resources, and communicate results effectively to professional and lay audiences.
4. Make ethically informed decisions in biological research and practice, considering bioethics, environmental ethics informed by indigenous and traditional knowledge and practices.
5. Analyze societal challenges related to health and the environment through the lens of biological science, recognizing how biological knowledge and associated career paths can contribute to studying, addressing and solving these challenges.

## Marianist Values

An education in the Marianist Tradition is marked by five principles. Reflect on how this course relates to one or more:

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

## Native Hawaiian Values

Education is central to both Marianist and Native Hawaiian culture — both seek transformative, value-centered learning that serves the marginalized. This is reflected in the ‘Ōlelo No‘eau (Hawaiian proverbs) below:

1. **Educate for Formation in Faith (Mana):** E ola au i ke akua (‘Ōlelo 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 (‘Ōlelo No‘eau 1957) — Acquire skill and make it deep.
3. **Educate in Family Spirit (‘Ohana):** ‘Ike aku, ‘ike mai, kōkua aku kōkua mai (‘Ōlelo No‘eau 1200) — Recognize others, be recognized, help others, be helped.
4. **Educate for Service, Justice and Peace (Aloha):** Ka lama kū o ka no‘eau (‘Ōlelo 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 (‘Ōlelo No‘eau 203) — All knowledge is not taught in the same school.

| <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                                                              | 2               | 2,3,4,5                       |
| 2                                                                | Compare and contrast prokaryotes, eukaryotic microbes and viruses.                                               | 1               | 2,3,4,5                       |
| 3                                                                | Classify microorganisms according to current understanding of taxonomy.                                          | 1               | 2,3,4,5                       |
| 4                                                                | Discuss the importance of microorganisms both in term of benefit and threat to humans and other animals’ health. | 1,5             | 2,3,4,5                       |

|   |                                                                                                                                   |         |         |
|---|-----------------------------------------------------------------------------------------------------------------------------------|---------|---------|
| 5 | Explain the basic principles microbial metabolism and microbial genetics and assess the benefit and risks of genetic engineering. | 1,4,5   | 2,3,4,5 |
| 6 | List and explain the main current strategies used to prevent, diagnose and treat infections                                       | 1, 4, 5 | 2,3,4,5 |
| 7 | Illustrate how human health and environmental conditions interact.                                                                | 1,5     | 2,3,4,5 |

## Attendance & In-Class Participation

### Attendance Policy

#### Quick Reference — Absence Thresholds:

|                                       |                                                                                           |
|---------------------------------------|-------------------------------------------------------------------------------------------|
| <b>Excused Absence</b>                | Illness with documentation, family emergency, University-sponsored activity]              |
| <b>Unexcused Absence</b>              | Any absence not pre-approved or documented                                                |
| <b>Course Failure</b>                 | More than 6 unexcused absences — student may receive a failing grade                      |
| <b>Late Arrival / Early Departure</b> | Arriving more than 15 minutes late or leaving early without permission of the instructor. |

### In-Class Participation Expectations

Active, respectful engagement is essential. Students are expected to come prepared and contribute meaningfully to discussions, activities, and collaborative work.

#### Students are expected to:

- Come prepared — complete readings and activities before each session.
- Participate actively in discussions and group work, demonstrating critical thinking.
- Engage respectfully and honor diverse perspectives.
- Use personal devices for course purposes only unless otherwise directed.
- Submit work by established deadlines to support course pacing.

## Course Activities and assessment

| Activity                   | % of Grade | Due date                                            |
|----------------------------|------------|-----------------------------------------------------|
| Assignments                | 20         | Homework after each chapter.<br>Announced in canvas |
| Exam 1                     | 23         | 9/24/2026                                           |
| Exam 2                     | 23         | 10/27/2026                                          |
| Final exam (comprehensive) | 25         | 12/07/2026 8:30am to 10:30am                        |
| Attendance/participation   | 9          | Ongoing evaluation                                  |

## Course Policies

|                        |                                                                                                                                                                  |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Late Work/make-up work | Late work or make-up will only be accepted in exceptional circumstances with documentation. Please communicate with me ASAP.                                     |
| Extra Credit           | No extra credit is available in this course.                                                                                                                     |
| Incomplete Grade       | An incomplete grade can only be awarded under exceptional circumstances (see catalog). Please communicate with me ASAP to discuss the feasibility and deadlines. |
| Syllabus Changes       | <b>The instructor reserves the right to modify this syllabus. Changes will be announced in class and posted to Canvas.</b>                                       |
|                        |                                                                                                                                                                  |

## Final Grades

Final grades are submitted to Self-Service ([selfservice.chaminade.edu](http://selfservice.chaminade.edu)):

| Grade | Range         |
|-------|---------------|
| A     | 90% and above |
| B     | 80–89%        |
| C     | 70–79%        |
| D     | 60–69%        |
| F     | 59% and below |

## Important Information

### 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, plagiarism, **and unauthorized and/or undisclosed AI usage**, in addition to more obvious dishonesty. See catalog section *Student Use of Artificial Intelligence in Academic Work* for further information.

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

### AI (Artificial Intelligence) Statement

Chaminade University recognizes the increasing role of artificial intelligence (AI) technologies in academic and professional environments. AI encompasses, but is not limited to, generative AI platforms, automated writing or content generation software, coding assistants, and similar tools. Students must ensure all submitted work genuinely reflects their knowledge and effort. Using AI to

produce or significantly complete graded assignments, exams or other academic tasks – defined as use that substitutes for or substantially replaces a student’s own analysis, reasoning or written expression – without explicit instructor approval is considered academic misconduct and will be dealt with according to the University’s Academic Honesty Policy.

If an instructor has reasonable grounds to question whether submitted work genuinely reflects a student’s own knowledge, authorship, or mastery of course material — or whether it meets the course’s expectations for AI use — the instructor may require the student to provide additional or alternative evidence of authorship and content mastery. Such evidence may include drafts, notes, revision history, source materials, process explanations, oral discussion, in class work, or completion of an alternative assessment. A student’s refusal or inability to provide such evidence may be considered, along with other available information, in evaluating whether the work meets course requirements and stated learning outcomes. Instructors will not rely solely on AI detection software or other automated tools in making grading or academic integrity determinations. Such determinations will be based on the totality of the available information and handled in accordance with applicable University policies and procedures. See the catalog section *Student Use of Artificial Intelligence in Academic Work* for further information.

## Title IX and Nondiscrimination

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. For pregnant and parenting students, I am also obligated to provide you with similar resources for support and protections available to you. My goal is to make sure that you are aware of the range of options available to you and have access to the resources and support you need.

Contact information and reporting options: [chaminade.edu/titleix/nondiscrimination/](https://chaminade.edu/titleix/nondiscrimination/). File a report via the [Campus Incident Report Form](#).

## Nondiscrimination Policy and Notice of Nondiscrimination

The university is committed to comply with all State and Federal statutes, rules, and regulations which prohibit discrimination. The university is committed to a policy of nondiscrimination on the basis of race, sex, gender identity and expression, age, religion, color, national origin (including shared ancestry and ethnic characteristics), ancestry, citizenship, disability, genetic information, marital status, breastfeeding, arrest and court record (except as permissible under State law), sexual orientation, or status as a covered veteran. Inquiries about Title IX or general Civil Rights concerns 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 [HERE](#). *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](#).

## Student with Disabilities Statement- Kōkua ‘Ike

Accessibility Services recognizes disability as a valued aspect of diversity and ensures equal access to the educational environment in accordance with Section 504 of the Rehabilitation Act; the Americans with Disabilities Act, as amended; and the principles and professional standards of the

Association on Higher Education and Disability. Access is supported through reasonable accommodations and referrals to campus and community resources. Appointments with the Accessibility Services Coordinator are available through Stellic at <https://chaminade.stellic.com> and may be held virtually or in person. Drop-in appointments are also welcome.

Students seeking support must meet with the Accessibility Services Coordinator as early as possible, even if they are unsure whether they have appropriate documentation of their disability or its impacts. The Accessibility Services Coordinator prioritizes listening to students's experiences and will discuss any documentation needs during the initial intake meeting. Students may seek support at any time.

Learn more at <https://chaminade.edu/ada-accommodations>

## Assessment of Student Work

Chaminade University may use student work anonymously to assess achievement of course, program, and institutional learning outcomes as part of ongoing quality improvement efforts.

## Campus Resources & Support Services

The following resources are available to all Chaminade students. Reach out early — these services exist to support your success.

| Resource                                             | Description                                                                                                                                                                                                                                                                                                               | Contact / Website                                                                                                                                   |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Accessibility Services (Kōkua 'Ike)</b>           | Accommodations under Section 504 and ADA. Contact early — appointments via Stellic, virtual or in person.                                                                                                                                                                                                                 | <a href="mailto:ada@chaminade.edu">ada@chaminade.edu</a><br><a href="https://chaminade.edu/ada-accommodations">chaminade.edu/ada-accommodations</a> |
| <b>Tutoring &amp; Academic Coaching (Kōkua 'Ike)</b> | Tutoring and Academic Coaching Services support students' progression toward their academic, personal, and professional goals with clarity and intention. Services include individualized support in English, math, nursing, sciences, and social sciences, as well as guidance in developing goals and study strategies. | <a href="https://chaminade.edu/tutoring-academic-coaching-services">chaminade.edu/tutoring-academic-coaching-services</a>                           |
| <b>Career Services</b>                               | Career Services supports students throughout their career journeys. Services include individualized job search strategy coaching, resume reviews, job interview coaching, and access to career-related resources and opportunities.                                                                                       | <a href="https://chaminade.edu/career-services">chaminade.edu/career-services</a>                                                                   |
| <b>Basic Needs Resources</b>                         | Support for food insecurity, housing instability, and other basic needs.                                                                                                                                                                                                                                                  | <a href="https://chaminade.edu/basic-needs/">chaminade.edu/basic-needs/</a>                                                                         |
| <b>Title IX / Nondiscrimination</b>                  | Reporting and support for sex discrimination and gender-based violence. Campus Incident Report Form available online.                                                                                                                                                                                                     | <a href="https://chaminade.edu/titleix/resources-and-support/">chaminade.edu/titleix/resources-and-support/</a>                                     |
| <b>Hazing Prevention</b>                             | Confidential support, crisis intervention, and reporting for any type of abuse including hazing.                                                                                                                                                                                                                          | <a href="https://hazingpreventionnetwork.org/athlete-helpline/">hazingpreventionnetwork.org/athlete-helpline/</a>                                   |
| <b>Campus Safety / SafeWords</b>                     | Security escort service for anyone who feels unsafe walking alone on campus at any time of day. Call security and a professional will escort you to your destination.                                                                                                                                                     | <a href="https://chaminade.edu/student-life/security/campus-safeswords-program/">chaminade.edu/student-life/security/campus-safeswords-program/</a> |

| Resource                                        | Description                                                                                                            | Contact / Website                                |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| <b>CUH Alert<br/>Emergency<br/>Notification</b> | Emergency text system. Register your cell number via the Chaminade portal and confirm the text to complete enrollment. | <a href="http://chaminade.edu">chaminade.edu</a> |

## Weekly Course Schedule

**Note: The instructor reserves the right to modify this schedule. Changes will be announced in class and posted to Canvas.**

| Day      | Date       | Topic                                                             | Chapter |
|----------|------------|-------------------------------------------------------------------|---------|
| Tuesday  | 8/18/2026  | Introduction to course                                            | 1       |
| Thursday | 8/20/2026  | Introduction to Microbes and Their Building Blocks.               | 1       |
| Tuesday  | 8/25/2026  | Tools/Methods for the Culturing and observation of Microorganisms | 2       |
| Thursday | 8/27/2026  | Tools/Methods for the Culturing and observation of Microorganisms | 2       |
| Tuesday  | 9/1/2026   | Tools/Methods for the Culturing and observation of Microorganisms | 2       |
| Thursday | 9/3/2026   | Bacteria and Archaea                                              | 3       |
| Tuesday  | 9/8/2026   | Bacteria and Archaea                                              | 3       |
| Thursday | 9/10/2026  | Eukaryotes                                                        | 4       |
| Tuesday  | 9/15/2026  | Eukaryotes                                                        | 4       |
| Thursday | 9/17/2026  | Eukaryotes                                                        | 4       |
| Tuesday  | 9/22/2026  | Viruses and Prions                                                | 5       |
| Thursday | 9/24/2026  | <b>EXAM 1</b>                                                     |         |
| Tuesday  | 9/29/2026  | Viruses and Prions                                                | 5       |
| Thursday | 10/1/2026  | Viruses and Prions                                                | 5       |
| Tuesday  | 10/6/2026  | Microbial Nutrition and Growth                                    | 6       |
| Thursday | 10/8/2026  | Microbial Nutrition and Growth                                    | 6       |
| Tuesday  | 10/13/2026 | Wellness week                                                     |         |
| Thursday | 10/15/2026 | Wellness week                                                     |         |
| Tuesday  | 10/20/2026 | Microbial Metabolism                                              | 7       |
| Thursday | 10/22/2026 | Microbial Metabolism                                              | 7       |
| Tuesday  | 10/27/2026 | <b>EXAM 2</b>                                                     |         |
| Thursday | 10/29/2026 | Microbial Genetics and Genetic Engineering                        | 8       |
| Tuesday  | 11/3/2026  | Microbial Genetics and Genetic Engineering                        | 8       |
| Thursday | 11/5/2026  | Physical and Chemical Control of Microbes                         | 9       |
| Tuesday  | 11/10/2026 | Antimicrobial Treatment                                           | 10      |
| Thursday | 11/12/2026 | Antimicrobial Treatment                                           | 10      |
| Tuesday  | 11/17/2026 | Antimicrobial Treatment                                           | 10      |
| Thursday | 11/19/2026 | Interactions between microbes and humans                          | 11      |
| Tuesday  | 11/24/2026 | Interactions between microbes and humans                          | 11      |
| Thursday | 11/26/2026 | Thanksgiving holiday no class                                     |         |
| Tuesday  | 12/1/2026  | Diagnosing infections (if time permits)                           | 15      |
| Thursday | 12/3/2026  | Review                                                            | 15      |

**Final exam 12/07/26 from 8:30am to 10:30am.**