



**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)

<b>Course Number:</b>	BI216L
<b>Course Title:</b>	Cellular and Organismal Biology II Lab
<b>Department Name:</b>	Natural Sciences and Mathematics
<b>Term:</b>	Spring 2022
<b>Course Credits:</b>	1
<b>Class Meeting Days:</b>	Wednesday
<b>Class Meeting Hours:</b>	14:30 pm – 17:20 pm
<b>Class Location:</b>	Henry Hall room Lab 3
<b>Instructor Name:</b>	Michael Weichhaus
<b>Email:</b>	<a href="mailto:michael.weichhaus@chaminade.edu">michael.weichhaus@chaminade.edu</a>
<b>Phone:</b>	808.440.4286
<b>Office Location:</b>	Wesselkamper Science Center room 107
<b>Office Hours:</b>	Monday, Wednesday, Friday 08:00am-10:00am or Zoom office hours (schedule on <a href="#">canvas calendar</a> )

## University Course Catalog Description

Laboratory section accompanying BI 216. *Prerequisites: BI 215L. Concurrent registration in BI 216 required. Cross-listed with BC 216L.*

### Course Overview

This course accompanies the BI216 Cellular and Organismal Biology lecture. It aims to introduce the student to independent laboratory work skills, with particular emphasis on introducing and applying the scientific method and hypothesis-driven research. The student will be able to understand and follow a scientific protocol and communicate scientific methodology in writing and orally.

### 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 'Ōlelo No'eau (Hawaiian proverbs) and Marianist core beliefs:

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; pela iho la ka nohana 'ohana ('Ōlelo 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 ('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

## Learning Outcomes

### Program Learning Outcomes for the Biology Program.

Upon completion the program in Biology, a graduating student will demonstrate the following competencies:

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

### Alignment of Course Learning Outcomes

Course Learning Outcomes	Program Learning Outcomes	Marianist Values
Describe and apply the Scientific Method to observable phenomenon including being able to recognize and synthesize proper scientific questions and hypotheses	1; 2; 3; 7	2; 4
Analyze and graph scientific data	2; 3; 7	2
Perform experimental methodology of PCR, gel electrophoresis, DNA extraction, DNA sequencing, and bioinformatics.	1; 2; 3; 4; 7	2; 4
Report scientific methodologies in writing	1; 2; 3; 4; 7	2; 4

### Alignment of Natural Sciences Courses with Marianist and Hawaiian values of the University.

The Natural Sciences Division provides an *integral, quality education*: sophisticated integrative course content taught by experienced, dedicated, and well-educated instructors.

- *We educate in family spirit* – every classroom is an *Ohana* and you can expect to be respected yet challenged in an environment that is supportive, inclusively by instructors who take the time to personally get to know and care for you.
- *We educate for service, justice and peace*, since many of the most pressing global issues (climate change, health inequity, poverty, justice) are those which science and technology investigate, establish ethical parameters for, and offer solutions to.
- *We educate for adaptation and change*. In science and technology, the only constant is change. Data, techniques, technologies, questions, interpretations and ethical landscapes are constantly evolving, and we teach students to thrive on this dynamic uncertainty.

The study of science and technology can be formative, exploring human creativity and potential in the development of technologies and scientific solutions, the opportunity to engage in the stewardship of the natural world, and the opportunity to promote social justice. We provide opportunities to engage with the problems that face Hawai'i and the Pacific region through the Natural Sciences curriculum, in particular, those centered around severe challenges in health, poverty, environmental resilience, and erosion of traditional culture. The Marianist Educational Values relate to Native Hawaiian ideas of *mana*, *na'auao*, *ohana*, *aloha* and *aina*. We intend for our Natural Sciences programs to be culturally-sustaining, rooted in our Hawaiian place, and centered on core values of *Maiau*, be neat, prepared, careful in all we do; *Makawalu*, demonstrate foresight and planning; *`Ai*, sustain mind and body; *Pa`a Na`au*, learn deeply.

### Course Prerequisites

*Prerequisites: BI 215L. Concurrent registration in BI 216 required. Cross-listed with BC 216L.*

### Required Learning Materials

There is no required text for this lab. All necessary protocols and reading will be provided to you either as handouts or will be posted on canvas.

### Technical Assistance for Canvas Users:

- Search for help on specific topics at [help.instructure.com](http://help.instructure.com)
- [Chat live with Canvas Support 24/7/365](#)
- Contact the Chaminade IT Helpdesk for technical issues: [helpdesk@chaminade.edu](mailto:helpdesk@chaminade.edu), or call (808) 735-4855

### Tutoring and Writing 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 (<https://chaminade.edu/advising/kokua-ike/>) for the latest times, list of drop-in hours, and

information on scheduling an appointment. Free online tutoring is also available via Smarthinking. Smarthinking can be accessed 24/7 from your Canvas account. Simply click Account – Notifications – Smarthinking. For more information, please contact Kōkua `Ike at [tutoring@chaminade.edu](mailto:tutoring@chaminade.edu) or 808-739-8305.

## Assessment

Lab notebook	10 percent
Presentation	20 percent
Homework	20 percent
Quizzes	10 percent
Attendance	10 percent
Group Participation	5 percent
Final exam	<u>25 percent</u>
	100 percent

## 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 90-100%	Outstanding scholarship and an unusual degree of intellectual initiative
B 80-89%	Superior work done in a consistent and intellectual manner
C 70-79%	Average grade indicating a competent grasp of subject matter
D 60-69%	Inferior work of the lowest passing grade, not satisfactory for fulfillment of prerequisite course work.
F <60%	Failed to grasp the minimum subject matter; no credit given

## Course Policies

### Late Work Policy

There are no make-ups for exams, unless a physician's note documents your absence during exams. Lecture presentations CANNOT be made-up. Essays turned in late will be assessed a penalty: a half-letter grade if it is upto 24h late, or a full-letter grade for 24h-7 days late. Essays will not be accepted if overdue by more than seven days.

### Grades of "Incomplete"

Students and instructors may negotiate an incomplete grade when there are specific justifying circumstances. An Incomplete Contract (available from the Divisional Secretary and the Portal) must be completed. When submitting a grade, the "I" will be accompanied by the alternative grade that will automatically be assigned after 90 days. These include IB, IC, ID, and IF. If only an "I" is submitted the default grade is F. The completion of the work, evaluation, and reporting of the final grade is due within 90 days after the end of the semester or term. This limit is unlikely to be extended.

## **Instructor and Student Communication**

Questions for this course can be emailed to the instructor. Online, in-person and phone conferences can be arranged. Response time will take up to 3 days. The instructor is available during office hours and will be able to meet with students on a first come first serve basis.

## **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.

## **ADA Policy**

Pursuant to 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 the basis of disability and are eligible for reasonable accommodations or modifications in the academic environment to enable them to 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 in the Student Support Services Building, Room 101, by phone at (808) 735-4845 or email: [counselingcenter@chamianade.edu](mailto:counselingcenter@chamianade.edu) for further information. Web: [studentaffairs.chaminade.edu/counseling-center/counseling-services](http://studentaffairs.chaminade.edu/counseling-center/counseling-services)

## **Title IX Compliance**

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. If you or someone you know has been harassed or assaulted, you can find the appropriate resources by visiting Campus Ministry, the Dean of Students Office, the Counseling Center, or the Office for Compliance and Personnel Services.

## **Attendance Policy**

I am not enforcing the institution's attendance policy, however any effect of non-attendance on your grade will not be mitigated.

The following attendance policy is from the [Academic Catalog](#).

Students are expected to attend all courses for which they are registered. Students should notify their instructors when illness or other extenuating circumstances prevent 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 ADA 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**

Any community must have a set of rules and standards of conduct 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 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.

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.

Detailed policies on Academic Conduct can be found in the Student [Handbook](#) and University [catalogue](#). The success of the Honor Code is made possible only with the acceptance and cooperation of every student. Each student is expected to maintain the principles of the Code. By submitting an assignment to this course, you acknowledge agreeing to these academic conduct principles and knowledge of the consequences of their violation.

Violations of Academic Honesty: Violations of the principle include, but are not limited to:

- Cheating: Intentionally using or attempting to use unauthorized materials, information, notes, study aids, or other devices in any academic exercise.
- Fabrication and Falsification: Intentional and unauthorized alteration or invention of any information or citation in an academic exercise. Falsification is a matter of inventing or counterfeiting information for use in any academic exercise.
- Multiple Submissions: The submission of substantial portions of the same academic work for credit (including oral reports) more than once without authorization.
- Abuse of Academic Materials: Intentionally or knowingly destroying, stealing, or making inaccessible library or other academic resource materials.
- Complicity in Academic Dishonesty: Intentionally or knowingly helping or attempting to help another to commit an act of academic dishonesty.
- Plagiarism: Intentionally or knowingly presenting the work of another as one's own (i.e., without proper acknowledgment of the source) Examples include, but are not limited to:
  - Copying or borrowing liberally from someone else's work without his/her knowledge or permission; or with his/her knowledge or permission and turning it in as your own work.
  - Copying off someone else's exam or paper.
  - Allowing someone to turn in your work as his or her own. DO NOT provide your work to someone else for reference.
  - Not providing adequate references for cited work.
  - Copying and pasting large quotes or passages without properly citing them.

## Schedule

Week	Lab topic
1	Scientific Method Review Introductions; Lab safety
2	Journal Article Review Lab techniques; Introduction to microbiomes
3	Intro to Earth Microbiome Project, importance of 16S DNA/rRNA, rhizosphere microbiome
4	Soil collection
5	DNA extraction and spectrophotometer
6	Polymerase Chain reaction
7	Agarose Gel Electrophoresis



8	PCR round 2
9	Agarose Gel Electrophoresis
10	Sequencing Reaction
11	Synopsis of labs to date Bacterial Identification lab
12	Data Analysis
13	Data Analysis Presentation Preparation
14	Analysis Presentation
15	<b>Final Exam</b>

Every effort has been made to ensure that the material in this syllabus is accurate and complete. However, occasionally changes must be made to the printed schedule. Thus, the instructor reserves the right to make any changes in the contents of this syllabus that he deems necessary or desirable. These changes, if any, will be announced as soon as the need for them becomes apparent.