



Chaminade
University
OF HONOLULU

Course Syllabus

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

3140 Waialae Avenue - Honolulu, HI 96816

www.chaminade.edu

Course Number:	BI216
Course Title:	Cellular and Organismal Biology II
Department Name:	Natural Sciences and Mathematics
Term:	Spring 2023
Course Credits:	3
Class Meeting Days:	Monday, Wednesday, Friday
Class Meeting Hours:	10:30am – 11:20pm
Class Location:	Sue Wesselkamper Science Ctr, 120
Instructor Name:	Michael Weichhaus
Email:	michael.weichhaus@chaminade.edu
Phone:	808.440.4286
Office Location:	Sue Wesselkamper Science Center, 107
Office Hours:	Monday, Wednesday 12pm - 2pm Thursday 1pm - 3pm Please email for meetings through Zoom
GroupMe Class chatroom:	sign-up link or scan QR code



University Course Catalog Description

Introduction to the cell and molecular biology of prokaryotic and eukaryotic organisms, with particular reference to the relationships between structure and functions. Cell cycle and mitosis. Organization of cells, roles of cell signaling and extracellular environment in establishing structures in animals and plants. Prerequisite for Biology Majors: BI215/215L, BI 210L must be taken either prior or concurrently with BI 216. Cross-listed with BC 216.

Course Overview

This course prepares the student for further education in advanced biology courses or related fields by demonstrating the fundamental principles of cellular biology. It introduces the student to the cell as the basic unit of life and details its essential functions, while distinguishing between prokaryotic and eukaryotic cell types. The student will further have an opportunity to develop skills in critical thinking and reading scientific literature.

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 entry requirements, career pathways and progression for the major post-graduate fields of research, education and the health professions

Course Learning Outcomes (CLO)

Upon completion of this course in Cell Biology the student will achieve the following

1. Identify the cell as the basic unit of life and describe the structure and function of prokaryotic and eukaryotic cellular components and organelles.
2. Explain transmembrane and cellular transport mechanisms.
3. Compare and contrast bioenergetic pathways in energy conversion in plant and animal cells.
4. List and describe each phase of the cell cycle and how it is regulated.
5. Identify the main biological macromolecules and describe their function in cellular processes.

Alignment of Learning Outcomes

	CLO 1	CLO 2	CLO 3	CLO 4	CLO 5
Marianist Values	2	2	2, 5	2, 4, 5	2
Program Learning Outcomes	4	4	1, 2, 3, 7	6, 7	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 *Ma'iau*, 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

Concurrent/Previous enrollment in BI100 recommended. Concurrent/Previous enrollment in BI210L and BI216L required.

Required Learning Materials

Hardin, J., "Becker's World of the cell", Ninth Edition (2016), Pearson Education Inc

Technical Assistance for Canvas Users:

- Search for help on specific topics at help.instructure.com
- [Chat live with Canvas Support 24/7/365](#)
- Contact the Chaminade IT Helpdesk for technical issues: 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 or 808-739-8305.

Assessment

Summaries	10 percent
1 st Lecture Exam	15 percent
2 nd Lecture Exam	15 percent
Mastering Assignments	15 percent
Presentation Discussion	5 percent
Presentation	20 percent
Final exam	<u>20 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 up to 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

The preferred way of communication is through the GroupMe app. Questions that pertain to the course in general should be posted to the class chat, so that others benefit from the answer. Only questions that pertain to an individual matter or contain private information should be addressed to me. Alternatively, I am available by email. Zoom or in-person office hours are available as indicated above. I am aiming to respond to GroupMe questions within a few hours, and up to 24h for emails unless requests are made outside working hours.

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@chaminade.edu for further information. Web: 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 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 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 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.

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 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.

Cell Biology Research Article Summaries

1. Each student is to submit a summary of scientific articles pertinent to biology. The principal objective of the summary is to expose and engage the student in reading and understanding scientific literature. Another objective is to increase the student's ability to concisely summarize scientific information.

2. The research articles to be summarized will be provided by the instructor **TWO** weeks before the summary due date below. Students are expected to submit individually written summaries. Group work, interaction with the instructor and seeking help online is desired.
3. There will be four summaries due during the semester. The summaries will count as a total of 10% of your grade (2.5% each).
4. Summaries must be typed or word processed (use a 12 point font). University writing standards are expected. Summaries should be between **250-500 words**.
5. Submission must be by uploading your work to canvas. Submission dates are outlined in the respective canvas assignment, the time of submission is 11:59pm.
6. Late submission policy: Late submission of up to 24h will result in one letter grade reduction in your grade, submissions less than 48h late will result in two letter grades deduction. Submission more than 48h late will result in a 0 for the assignment.

Presentations

You will be assigned a portion of the lecture content to study on your own and present to the class. Your topic will be assigned based on the group you choose in [canvas](#). Since there are two sections present in this class, be sure to sign up for the section you are enrolled in. As a presenter you will take on the role of instructor for your specific topic. Extensive preparations for your assigned area are therefore paramount. Your instruction will be graded on 1) content, 2) presentation style, 3) interaction with other students based on the rubric. The grade for this presentation will count 20% toward your final grade.

Extra credit Kahoots

Prior to each exam you will have the possibility to earn extra credit toward your exam grade. There will be a study session in class with instructor-provided learning objectives passed out at the beginning of class. You will need to find answers to the problems on your own and then be quizzed. Your final score on the quiz will increase your grade on the following exam, according to this formula:

New Exam Score [%] = (100-actual exam score [%])x(kahoot score [%]/100)+actual exam score [%]

The number of these study sessions during the semester is discretionary to the instructor.

Schedule

Week	Lecture	Chapter
1	Chemistry of the cell	Chapter 2
2	The macromolecules of the cell	Chapter 3
3	Bioenergetics	Chapter 5
4	Enzymes	Chapter 6
5	Membranes	Chapter 7
6	Transport across membranes	Chapter 8
7	Glycolysis and Fermentation	Chapter 9
8	Cellular Respiration	Chapter 10
9	Photosynthesis	Chapter 11
10	Endomembrane system	Chapter 12
11	Cytoskeletal Systems	Chapter 13
12	Cellular Movement	Chapter 14
13	Cell Adhesions/Junctions and ECM	Chapter 15
14	Structural Basis of Information: DNA	Chapter 16
15	Cell Cycle	Chapter 24

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.