



School of Natural Sciences and Mathematics

Department of Biology

## BI-216 Cellular and Organismal Biology II

Henry Hall 225 TR 11:30A-12:50P

Credits: 3      Section: 01      Term: Spring 2025

### Instructor Information



<b>Instructor:</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>	Mo 9:30A-11:00A; Wed 9:30A-11:00A; 1:30P-2:30P Fri 9:30A-10:00A
<b>Sign-up for Office Hours:</b>	sign-up <a href="#">here</a> for office hours (required)

### Communication

Instructions and updates will be given verbally during lectures and may also be distributed using the “announcement” feature in canvas. Questions for this course can be emailed to the instructor. Response to email can be expected within 24h but may take longer during weekends or holidays. Online and in person meetings are available during office hours and can be scheduled using this [link](#) to my calendar. Calendar Sign-up is required for scheduling purposes.

### School & Department Information

#### School of Natural Sciences and Mathematics

Office Location: Wesselkamper Science Center, room 115

Phone: (808) 440-4204

If you have questions regarding the Department of Biology, reach out to your instructor or the School of Natural Sciences and Mathematics.

## Course Description & Materials

### Catalog Course 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.*

### Time Allocation

*How This Course (3 credits) Meets the Credit Hour Policy*

- Seat time
  - 35h (70min TTh for 15 weeks)
- Time spent on key assessments, including study time:
  - Mid-term exams: 20h (2x10h)
  - Final exam: 15h
  - Essays: 20h (4x5h)
  - Mastering Biology Quizzes: 15h (15x1h)
  - Presentation: 20h
- Additional time each week (e.g., reading, studying, homework)
  - Reading: 12.5h (50min per week)
  - Discussions, and case studies: 12.5h (50min per week)
- Total: 150h

### Required Materials

Mastering Biology with Pearson eText for Becker's World of the Cell

ISBN-13: 9780135891322

Use these [instructions](#) to gain access to the material from canvas

Canvas (<https://chaminade.instructure.com/courses/37671>)

## Learning Outcomes

### Program Learning Outcomes (PLOs)

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

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

### Course Learning Outcomes (CLOs)

Upon completion of Clinical Nutrition, the student will be able to:

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.

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

Cellular and Organismal Biology II reflects the Marianist Educational Values of providing an integral, quality education and educating for adaptation and change. By offering a well-structured curriculum with diverse instructional materials—ranging from foundational readings

to advanced multimedia content and interactive discussions—it ensures students gain a comprehensive understanding of cell biology. The integration of hands-on activities, peer-led sessions, and adaptive technologies like interactive worksheets and online discussions prepares students to adapt to scientific advancements and technological developments, equipping them to navigate a rapidly evolving world. The course's design emphasizes critical thinking, collaboration, and active engagement, fostering a robust academic experience that aligns with Marianist values of holistic and forward-thinking education.

### 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

### Alignment of Course Learning Outcomes

	CLO 1	CLO 2	CLO 3	CLO 4	CLO 5
<b>Marianist Values</b>	2	2	5	22	2
<b>PLOs</b>	4	4	4	5	4
<b>Native Hawaiian Values</b>	2	2	5	2	2

### Course Activities

Cellular and Organismal Biology II includes the following activities:

1. **Readings and Multimedia Resources:** Assigned textbook chapters, PowerPoint slides, and instructional videos covering cellular and molecular biology concepts.
2. **Discussions:** Online and peer-led discussions to encourage critical thinking and collaborative learning.
3. **Assignments:** Chapter-based assignments, article summaries, and content presentations for reinforcement of concepts.
4. **Interactive Tools:** Use of Kahoot activities, interactive worksheets, and in-class exercises to foster engagement.
5. **Exams and Assessments:** Periodic exams, including those requiring specialized tools like Respondus LockDown Browser, and study guides to evaluate understanding.
6. **Additional Resources:** Supplemental materials like handouts, study sessions, and music videos for concept reinforcement.

## Course Policies

### Attendance

Students are expected to attend regularly 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 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.

### Late Work

**Quizzes:** Mastering Biology Quizzes have a one-week grace period to complete for full credit.

**Exams:** If you miss an exam due to illness, please provide a note from your doctor. If you are away for university-related activities, let me know in advance. Unfortunately, there are no make-ups for exams in other circumstances.

**Lecture Presentations:** Please note that missed lecture presentations cannot be made up. Since you are able to pick the time and date for your presentation, please do so with the knowledge that this cannot be changed at a later date.

### Essays:

- If you submit an essay up to 24 hours late, your grade will be lowered by half a letter grade (e.g., from a B to a B-).
- If your essay is late by more than 24 hours but less than 7 days, it will be lowered by a full letter grade (e.g., from a B to a C).
- Essays more than 7 days late will not be accepted.

**Important:** Life can be unpredictable. If you're facing unexpected challenges that might prevent you from meeting deadlines, please contact me as soon as possible. I'm here to support you, and we can discuss possible accommodations or solutions together.

### Changes to the Syllabus

While the provisions of this syllabus are as accurate and complete as possible, your instructor reserves the right to change any provision herein at any time. Every effort will be made to keep you advised of such changes, and information about such changes will be available from your instructor.

### 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.

### Final Grades

Final grades are submitted to [Self-Service](#):

Summaries	10 percent
1 <sup>st</sup> Lecture Exam	15 percent
2 <sup>nd</sup> 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

### **A: Outstanding Scholarship and an Unusual Degree of Intellectual Initiative**

Reflects a mastery of the course material and an exceptional ability to synthesize and apply knowledge creatively. Demonstrates critical thinking, originality, and precision in argument and interpretation. Work at this level goes beyond mere accuracy and skillfulness, exhibiting intellectual curiosity and insight.

### **B: Superior Work Done in a Consistent and Intellectual Manner**

Represents strong understanding and application of course concepts, theories, and principles. Work is consistently thorough and well-organized, demonstrating analytical abilities and clear communication. Although not as inventive or insightful as an 'A' grade, 'B' level work shows commitment, engagement, and clear mastery of complex ideas.

### **C: Average Grade Indicating a Competent Grasp of Subject Matter**

Denotes a satisfactory comprehension of the material with the ability to apply key concepts but may lack depth in understanding or application. Work at this level meets the basic course requirements and demonstrates a reasonable effort, but may lack creativity, precision, or engagement with more complex ideas.

### **D: Inferior Work of the Lowest Passing Grade, Not Satisfactory for Fulfillment of Prerequisite Course Work**

Reflects limited understanding of the course material and minimal engagement with the key concepts. Work is often incomplete, superficial, or lacks cohesion. While it may meet the minimum criteria for passing, it falls short of the standards required for progression in sequential or related courses.

### **F: Failed to Grasp the Minimum Subject Matter; No Credit Given**

Signifies a lack of basic comprehension of the course content and an inability to apply or articulate fundamental concepts. Work at this level is characterized by significant inaccuracies, misconceptions, or omissions, and does not meet the minimum requirements for passing the course. Students receiving an 'F' must re-take the course or an equivalent to obtain credit.

## 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, 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.

### 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 Kōkua Ike via email at [ada@chaminade.edu](mailto:ada@chaminade.edu) each semester if changes or notifications are needed.

### **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.

## Readings & Due Dates

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.