

Course Syllabus

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Chaminade
University
OF HONOLULU

Course Number: BI 216

Course Title: Cellular and Organismal Biology II

Department Name: Biology

College/School/Division Name: Natural Sciences and Mathematics

Term: Spring 2024

Course Credits: 3

Class Meeting Days: Mon, Wed, Fri

Class Meeting Hours: 10:30am-11:20pm

Class Location: Room 201 Eiben Hall; [campus map \(pdf\)](#)

<https://chaminade.instructure.com/courses/29379/files/2218543?wrap=1> ↓

https://chaminade.instructure.com/courses/29379/files/2218543/download?download_frd=1

Professor: Michael Dohm, PhD

Email: mdohm[at]chaminade.edu

Phone: 808-739-8543

Office Location: Wesselkamper Science Center (WSC), Room 108

Office Hours: Tues 9 – 11am, 1:30 - 3pm, or by appt (please use CANVAS messaging for all correspondence with the Professor about this course)

University Course Catalog Description

Introduction to the cell biology of prokaryotic and eukaryotic organisms, with particular reference to the relationships between structure and functions, the cell cycle and mitosis, organization of

cells, and the roles of cell signaling and extracellular environment in establishing structures in animals and plants.

Course Overview

This course has been designed to:

- Prepare the students for further education in advanced biology courses, or related fields.
- Introduce the student to the cellular biology of prokaryotes and eukaryotes.
- To help the student on their road to becoming a competent and educated professional.
- To examine and analyze specific content areas, such as molecular or cellular biology, evolution, genetics, physiology, and related areas of biochemistry and biophysics.

Course Prerequisites

Concurrent registration BI 216L required. Cross-listed with BC 216

Required Learning Materials

Urry, Cain, Wasserman, Minorsky and Reece. Campbell Biology, Pearson Education, Inc. 11th or more recent edition acceptable

Hardin, J., Bertoni, G., and Lewis Kelinsmith, L. Becker's World of the Cell, Pearson Education, Inc. 9th or more recent edition acceptable

CANVAS: <https://chaminade.instructure.com/courses/29379>

(<https://chaminade.instructure.com/courses/29379>)

Suggested Learning Materials

Bartee, L., Anderson, C. (2018) General Biology I: Survey of Cellular Biology,

<https://open.umn.edu/opentextbooks/textbooks/976> 

(<https://open.umn.edu/opentextbooks/textbooks/976>)

Bergtrom, G. (2020) Cell and Molecular Biology: What We Know & How We Found Out - 5e,

<https://open.umn.edu/opentextbooks/textbooks/244> 






(<https://open.umn.edu/opentextbooks/textbooks/244>)

LeClair, R. (2021) Cell Biology, Genetics, and Biochemistry for Pre-Clinical Students,

<https://open.umn.edu/opentextbooks/textbooks/967> 

(<https://open.umn.edu/opentextbooks/textbooks/967>)

Technical Assistance for Canvas Users:

- Search for help on specific topics or get tips at [Canvas Students](https://community.canvaslms.com/groups/students/pages/home)  (<https://community.canvaslms.com/groups/students/pages/home>)
- Live chat with [Canvas Support for students](https://cases.canvaslms.com/liveagentchat?chattype=student)  (<https://cases.canvaslms.com/liveagentchat?chattype=student>)
- Canvas Support Hotline for students: +1-833-209-6111
- Watch this [video](https://community.canvaslms.com/docs/DOC-18585-getting-started-with-canvas-as-a-student)  (<https://community.canvaslms.com/docs/DOC-18585-getting-started-with-canvas-as-a-student>) to get you started
- [Online tutorials](https://community.canvaslms.com/community/answers/guides/video-guide#jive_content_id_Students)  (https://community.canvaslms.com/community/answers/guides/video-guide#jive_content_id_Students): click on “Students” role to access tutorials
- Contact the Chaminade IT Helpdesk for technical issues: helpdesk@chaminade.edu or call (808) 735-4855
- Connect to Chaminade's WI-FI: <https://metaaccess.myweblogon.com:8443/>  (<https://metaaccess.myweblogon.com:8443/>)

Assessment

Course grade assessed from successful completion of exams, quizzes, homework, readings, and participation. A total of 500 points, weighted by category.

Category	Item	How many/often?	Points per item	Weight
Exams	Unit exams	4	50	40%
	Cumulative final exam	1	70	14%
Quizzes	Chapter quizzes	10	6	12%
Homework	Worksheets	10	6	12%
Readings	Journal articles	4	16	13%
Attendance & Participation	<ul style="list-style-type: none"> • Attend class, • Participate in group and individual work, 	daily	a total of 46 points for semester	9%

Category	Item	How many/often?	Points per item	Weight
	<ul style="list-style-type: none"> Weekly (minimum) CANVAS activity 			
				100%

Grading Scale


Letter grades are given in all courses except those conducted on a credit/no credit basis. They are interpreted as follows:

Letter grade	Percentage range	Criteria *
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

* From [University Course Catalog](#) 

(<https://catalog.chaminade.edu/generalinformation/academicaffairs/undergraduate/academicinforma>

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/>  (<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.

Schedule of lectures, assignments, and exams

Click here to view [BI216 schedule](#)

(<https://chaminade.instructure.com/courses/29379/pages/bi216-schedule?wrap=1>)

Program Learning Outcomes

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

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, summarize, and synthesize 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. Evaluate the etiology of major human disease burden in terms of, pathophysiological mechanisms, epidemiology within populations and possible therapeutic approaches
7. 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 and Linkage to Program Learning Outcomes

Students who successfully complete this course will be able to:

Course Learning Outcomes	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7
1. Explain why the cell is the basic unit of life as well as identify and describe the structure and function of prokaryotic and eukaryotic cellular components and organelles.				X			

Course Learning Outcomes	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7
2. Identify and explain transmembrane and cellular transport mechanisms				X			
3. Compare and contrast plant and animal cell structures as well as how each cell type produces and harvests chemical energy.				X			
4. List and describe each phase of the cell cycle and how it is regulated.				X	X		
5. Identify the biological macromolecules of the cell, describe their structures and function and what roles each play in cellular processes such as metabolism, bioenergetics, respiration, photosynthesis, etc				X	X		

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.

Alignment of BI216 with Marianist and Hawaiian values of the University

BI216/L Cellular and Organismal Biology II lecture and lab provides an integral quality education as it is an introductory science course which provides students a foundation that will be necessary to be successful in several upper division science courses, including but not limited to BI320/L, BI321/L, BI411L and BI471/L. As each new topic is introduced throughout the semester, a point is made to link the current subject matter with those future biology courses. Additionally, it is highlighted how the subject matter may be integrated with other sciences like chemistry and physics so that students understand that this BI216 course, as well as biology in general, is not a standalone course. To be successful and utterly understand biology one needs to understand how it relates to the bigger scientific community.




This course also focuses on educating in the family spirit. This is done by emphasizing that science is not done in a vacuum. Throughout the semester there are several small group projects/presentations both within the lecture and the lab. These are designed to not only assist student in learning the subject matter but to encourage them to build relationships within the peer groups. In order to foster collaborative learning homework assignments are given such that students are instructed to answer in their own words; however students are strongly encouraged to work with their peers to find and discuss the answers to these questions.

Course and University Policy, Reminders, and Notices:

1. Class begins each time exactly at the time scheduled (check your section number) – please be on time. Chronic tardiness will be viewed as absence from class. If you miss or are tardy for class, please note that we will proceed without you and you will miss material; I cannot re-teach the class -- it is your responsibility to obtain missed lecture topics from your classmates who were in attendance.
2. Please attend the section of BI216 for which you were registered. There are several sections of BI216 taught by different instructors; Although we cover the same topics, you are

responsible for the material presented in the section in which you were registered.

3. You are expected to attend class and to come prepared: Read assigned and suggested readings before the material is to be presented in class; Do ask questions if you are unsure of material: I highly recommend that you ask in class or via the course forum.
4. Do more than the minimum required! I will suggest problems or questions from each chapter in your text or from the publisher's website for you to consider; these will not be graded, nor are they required. However, the more you do, the more practice and exposure you get to the material, the better you will do on my exams. BI216 exams are based on the same concepts and problems that the text questions address. I do not post answers to these suggested problems; however, I encourage you to discuss them with me in class or via the course forum.
5. If a student cannot attend a class in which an exam has been scheduled, the student must notify the instructor in person no later than the class prior to the scheduled exam. Notification does not include phone calls or by email.
6. Student athletes need to provide the instructor with a schedule of all travel during the semester, in addition to providing a letter from the Athletics Department prior to travel.
7. In the event of an emergency or an illness, a Doctor's note will be expected and accommodations will be made on a case-by-case basis. Lacking an authorized excuse, you may still be allowed to take the exam at a later time, but you may not earn full credit for the assignment, in fairness to those students who took the exam on time. Same day, but at later time: maximum points possible 95% one day late: maximum points possible 85% two to three days late: maximum points possible 70% More than three days, you will not be permitted to take the exam and a score of "0" will be assigned.
8. Return of graded material will generally be within 5-7 class days after you take the graded assignment.
9. Use of music devices and cell phones is prohibited during all Natural Science and Mathematics classes at Chaminade, unless specifically permitted by your instructor (see below, policy item 11). Use of cellphones and music devices in laboratories is a safety issue. In addition, use of cellphones and music devices in any class is discourteous and may lead to suspicion of academic misconduct. Students who cannot comply with this rule will be asked to leave class and may be subject to laboratory safety violation fines. Please refer any questions to the Dean of Natural Sciences and Mathematics.
10. You may not record by camera or video or audio recording device any lecture or other class activity without prior permission from the instructor.
11. I encourage you to bring and use your laptops and tablets in class. However, use of these devices is conditional -- nonacademic activity during class hours is disruptive to the class and everyone around. Mute the sound and avoid "low-battery" emergencies -- electrical outlets are generally not available for student use during class hours.

12. Chaminade University recognizes the inherent dignity of all individuals and promotes respect for all people. Sexual misconduct will NOT be tolerated at Chaminade. If you have been the victim of sexual misconduct, 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, I must report the matter to the Title IX Coordinator. Should you want to report to a confidential source you may contact the following:
 - Counseling Center (phone 808-735-4845).
 - Any priest serving as a sacramental confessor or any ordained religious leader serving in the sacred confidence role (Bro. Edward Brink, Rector; phone 808-735-4835 or Campus Ministry; 808-735-4774).
13. Chaminade University abides by all aspects of the Family Educational Rights and Privacy Act Links to an external site.(FERPA). FERPA is a Federal law that protects the privacy of student education records. Details of Chaminade's implementation of FERPA are provided in your [Chaminade University Student Handbook and Academic Planner](#) 
<https://assets.chaminade.edu/wp-content/uploads/2022/07/29101951/22-23-Student-Hanbook-Working-Revisions.pdf>.
14. Chaminade University is committed to making reasonable accommodations to assist individuals with disabilities in reaching their academic potential (Americans with Disabilities Act Links to an external site.). If you have a disability which may impact your performance, attendance, or grades in this course and require accommodations, you must first obtain written documentation of the need for accommodations from the Chaminade University Counseling Center (phone 808-735-4845) as soon as possible in order for the instructor to plan accordingly. Failure to provide written documentation will prevent your instructor from making the necessary accommodations. Please refer any questions to the Dean of Students and review the procedures at <https://chaminade.edu/student-life/counseling-services/> 
<https://chaminade.edu/student-life/counseling-services/>
15. You are also expected to have read and to abide by the “Student Rules of Conduct” (p. 25 - 29) Chaminade University’s Student Handbook and Academic Planner Links to an external site.. The handbook is available from the Bookstore or online at http://www.chaminade.edu/student_life/handbook.php 
http://www.chaminade.edu/student_life/handbook.php
16. Please note standards of academic honesty expected of you. If you are unsure what your responsibilities are, please ask and I will be happy to help you or get you contact information if I cannot help

Course Summary: