



School of Natural Sciences and Mathematics
Division of Chemistry and Biochemistry

BC / CH 360: Biochemistry I

Credits: 3 Term: Fall 2026

Section 01

M/W/F 11:30 AM – 12:20 PM

Henry Hall 104

Instructor Information

Instructor: Seongjin Kim, Ph.D.

Email seongjin.kim@chaminade.edu

Office Location: Henry Hall 123C

Office Hours: Online/In Person TBD

Communication

The best way to contact me is by email. When contacting me, please use your CUH (chaminade.edu) email account and indicate which class you are inquiring about. I will reply to emails within 24 hours during the week, and within 48 hours on weekends and holidays. Feel free to contact me at any time if you have any questions or concerns.

Course Description & Materials

Catalog Course Description

This is the first part of a year-long course where the vast knowledge of biochemistry is filtered through a rational perspective guided by general chemical and biological principles. Following a survey and review of common classes of biologically significant metabolites such as peptides, carbohydrates, lipids, nucleic acids, as well as equally important smaller molecules, the emphasis is shifted to biological thermodynamics and enzyme mechanisms. During the latter part of the course the broad spectrum of principles studies is utilized to cover individual metabolic pathways in detail.

Prerequisites: BC-324 or CH-324, BC-324L or CH-324L , EN-102, COM-101

Corequisite: BC-360L

Time Allocation

This is a three-credit hour course requiring **at least** 135 clock hours of engagement, per the official CUH Credit Hour Policy. Students enrolled in this course are expected to spend about 35 hours of in-class meetings, 35 hours completing the course assigned readings and exercises, 40 hours completing the assigned homework problems, 25 hours reviewing materials for quizzes and exams.

Required Materials

The following items should be brought to each class meeting.

- Reading materials will be referenced by the instructor. There is no book required for purchase for this course.
- Computer with online access and a Microsoft Office or its equivalent.
- Scientific Calculator.

Recommended Items

- Kennelly, P.J.; Botham, K. M.; McGuinness, O.; Rodwell, V.W.; Weil, P.A., *Harper's Illustrated Biochemistry*, 33rd ed., McGraw Hill, **2026**
- Nelson, D.L.; Cox, M.M, *Lehninger Principles of Biochemistry*, 8th ed., W.H. Freeman, **2021**
- Berg, J.M.; Gatto Jr., G.J.; Hines, J.; Tymoczko, J. L.; Stryer, L., *Biochemistry*, 10th ed., W.H. Freeman, **2023**

Canvas

- **Section 01** [Biochemistry I \(https://chaminade.instructure.com/courses/46493\)](https://chaminade.instructure.com/courses/46493)

Learning Outcomes

Program Learning Outcomes (PLOs)

Upon completion of the undergraduate program in Chemistry, students will have demonstrated the ability to:

1. Apply the scientific method as it is used in organic chemistry, inorganic chemistry, analytical chemistry, physical chemistry, and molecular sciences
2. Recognize and explain chemical theory as it applies to the physical world
3. Visualize, evaluate, validate and interpret results of chemical analyses
4. Solve problems using analytical reasoning, professional resources, professional conduct, and ethical behavior
5. Communicate chemical information effectively in oral and written formats

Course Learning Outcomes (CLOs)

Upon successful completion of this course students will be able to:

1. Explain the chemical principles underlying biological systems.
2. Describe the structures and properties of amino acids, proteins, carbohydrates, lipids, and nucleic acids.
3. Explain how protein structure determines biological function.
4. Apply enzyme kinetics to biochemical reactions.

5. Explain the thermodynamic principles governing metabolism.
6. Analyze major metabolic pathways.
7. Interpret biochemical data.
8. Solve quantitative biochemical problems.

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, and integrity of creation.
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 luma 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

Course Activities

Quizzes (20% of total grade)

Expect to have at least roughly one quiz per week of class. The quiz content will be similar to problems covered during class. Some quizzes will be announced, but some may occur at unannounced times during class.

Exams (30% of total grade)

There will be three exams given this semester. Please see the tentative course schedule for all exam dates. Note that the fourth exam will take place at a different time than the normally scheduled class meetings per the CUH final exam schedule. More information about these exams will be given in class.

Final Exam (20% of total grade)

The final exam is cumulative and will include concepts covered during the entire semester. The final exam can only be taken on its scheduled day and time.

Participation (10% of total grade)

You will receive points for participation in this class. These may include class attendance, in-class work, and/or other possible assignments.

Literature Research Project (20% of total grade)

See the separate BC/CH 360: Literature Research Project handout for detailed guidelines and requirements.

Extra Credit

There is NO extra credit for BC/CH 360.

Course Policies

Attendance

The following attendance policy is from the 2026-2027 Academic Catalog. Students are expected to attend regularly all courses for which they are registered. Student 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.

Late Work

All overdue assignment not completed or anticipated to be late must have approval from the instructor along with a valid excuse and documentation when applicable.

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. This grade is appropriate only if extraordinary conditions beyond the control of the student have led to an inability to complete course requirements. When submitting a grade, the "I" will be accompanied by the alternative grade that will automatically be assigned after 30 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 30 days after the end of the semester or term. This limit may not be extended.

Final Grades

Final grades are submitted to [Self-Service](#). Letter grades are given in all courses except those conducted on a credit/no credit basis. Grades are calculated from the student's quizzes, class participation, exams, and the final examination. Final letter grades are interpreted as follows with the tentative percentage cutoffs:

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

Cell Phones, Tablets, and Laptops

Music Devices and Cellular Phones: Unless specifically permitted by your instructor, use of music devices and cell phones is prohibited during all Natural Science and Mathematics classes, as it is discourteous and may lead to suspicion of academic misconduct. Students unable to comply will be asked to leave class.

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.

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.

Student Conduct

Campus life is a unique situation requiring the full cooperation of each individual. For many, Chaminade is not only a school, but a home and a place of work as well. That makes it a community environment in which the actions of one student may directly affect other students. Therefore, each person must exercise a high degree of responsibility. Any community must have standards of conduct and rules 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 within the campus residence halls are adjudicated by the Housing & Residence Life professional staff; alleged violations of the community standards within the greater campus community are adjudicated by the Director of Student Conduct & Title IX. The university has 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. Please refer to the Student Handbook for more details (available on the Chaminade website under Student Life).

For further information, please refer to the [Student Conduct](#) section 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 Kokua Ike via email at 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 or 808-739-8305.

Tentative Course Schedule

The following schedule is subject to change based on the operational needs of the course. Should changes occur, you will be notified by CANVAS announcement and email.

	Monday	Wednesday	Friday
August	17	19	21
	Introduction and Review Syllabus	Foundation of Biochemistry	
	24	26	28
		No Class	
	<u>Water; Buffers</u>	Fall Spiritual Convocation	
September	31	2	4
	<u>Amino Acids</u>		<u>Protein Structure</u>
	7	9	11
	No Class		
	Labor Day		Protein Function
	14	16	18
		Review	EXAM 1
	21	23	25
	<u>Enzymes</u>		
October	28	30	1
	<u>Carbohydrates</u>		<u>Nucleotides and Nucleic Acids</u>
	5	7	9
		<u>Lipids</u>	
	12	14	16
	No Class	No Class	No Class
	Fall Wellness Week	Fall Wellness Week	Fall Wellness Week
	19	21	23
		Review	EXAM 2

	26	28	30
	Biological Membranes and Transport		
November	2	4	6
	<u>Bioenergetic</u>		<u>Glycolysis</u>
	9	11	13
		No Class	
		Veteran's Day	
	16	18	20
			EXAM 3
	Citric Acid Cycle		
	23	25	27
		Project	No Class
	Project Work Day	Due by 11:59pm	Thanksgiving
December	30	2	4
			Review for Final Exam
	Oral Presentation	Oral Presentation	
Final Exam	Tuesday, December 8	8:30 AM – 10:30 AM	