Course Syllabus
Chaminade University Honolulu
3140 Waialae Avenue - Honolulu, HI 96816
www.chaminade.edu

Course Number: BI-101-01-1
Course Title: General Biology
Department Name: Biology
College/School/Division Name: NSM
Term: Spring
Course Credits: 3
Class Meeting Days:
Monday/Wednesday/Friday
Class Meeting Hours: 08:30AM - 09:20PM
Class Location: TBD
Instructor: Gang-Ming Zou, MD, PhD.
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Phone: 808-440 4211
Office Location: Henry Hall 123C
Office Hours: Tuesday 11am to 12:01pm and by appointment.

University Course Catalog Description

Biology 101 is a 3-credit introductory biological science course for those students desiring to fulfill credits leading to a non-science bachelor's degree. Concurrent registration in Biology 101 Lab (1 credit) is required. There are no science pre-requisites for this course.

Course Overview

This is an accelerated introductory course to general biology with major emphasis on cellular biology. We will be looking at the cell as the basic unit of life and the biochemical processes that occur within the cell in order to ensure its survival. We will also investigate basic genetics and the fundamental concepts of evolution.

Marianist Values

This class represents one component of your education at Chaminade University of Honolulu. An education in the

Marianist Tradition in 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 ʻOlelo No'eau (Hawaiian proverbs) and Marianist core beliefs:

1. Educate for Formation in Faith (Mana) E ola au i ke akua (ʻŌlelo Noʻeau 364) May I live by God
2. Provide an Integral, Quality Education (Na'auao) Lawe i ka maʻalea a kūʻonoʻono (ʻŌlelo Noʻeau 1957) Acquire skill and make it deep
3. Educate in Family Spirit (ʻOhana) ʻIke aku, ʻike mai, kōkua aku kōkua mai; pela iho la ka nohana ʻohana (ʻŌlelo Noʻeau 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 noʻeau (ʻŌlelo Noʻeau 1430) Education is the standing torch of wisdom
5. Educate for Adaptation and Change (Aina) ʻAʻohe pau ka ʻike i ka hālau hoʻokahi (ʻŌlelo Noʻeau 203) All knowledge is not taught in the same school

Student Learning Objectives (i. e. Learning Outcome)-

Students will be able to:

1. describe the nature of science as it specifically applies to the discipline of biology. Students will use the scientific method of inquiry. They will be evaluated by lecture and laboratory examinations.
2. explain the process of evolution and the impact that Charles Darwin and other evolutionists had on the explanation of the process. Students will be evaluated by lecture examinations.
3. demonstrate the knowledge of the chemical basis of living organisms and how chemistry defines a large part of the study of biology. Students will be evaluated by lecture examinations.
4. define the characteristics of water, the medium on which all life on earth depends. Students will be evaluated by lecture examinations.
5. be familiar with the nature of organic biocompounds (carbohydrates, proteins etc…) and their importance as building blocks of living systems. Students will be evaluated by lecture examinations.
6. identify the chemical and physical structure and diversity of living organisms and how they interact with the environment. Students will be evaluated by lecture examinations.
7. list the characteristics of living organisms. Students will be evaluated by lecture examinations and student projects.
8. explain the composition and function of biological membranes. Students will be evaluated by lecture and laboratory examinations.
9. define passive transport- diffusion, osmosis, and facilitated diffusion and relate the changing conditions inside and outside of cells to these definitions. Students will be evaluated by lecture and laboratory examinations.
10. define active transport and relate the changing conditions inside and outside of cells to the need for AT. Students will be evaluated by lecture examinations.

11. explain the nature of free energy and the application of free energy to living systems, mainly in the metabolism of cells. Students will be evaluated by lecture examinations.
12. explain and describe the nature of enzymes and their critical importance to living systems. Students will be evaluated by lecture and laboratory examinations.
13. follow the cell's metabolic pathways and their energetic products in both phototrophic and chemotrophic organisms. Students will be evaluated by lecture examinations.
14. explain the need for cellular reproduction and the different types carried out by selected organisms. Students will be evaluated by lecture and laboratory examinations.
15. explain the nature of informational molecules (DNA and RNA) and the expression of this information through the process of gene expression. Students will be evaluated by lecture and lab examinations.
16. compare Mendelian and non-mendelian inheritance and describe the way living organisms pass characteristics from one generation to the next. Students will be evaluated by lecture examinations and student papers.
17. understand the importance of the light microscope to the practice of biology. Students will be evaluated in the laboratory regarding the proper use of the microscope during a laboratory practical. Students' laboratory participation may also be evaluated in the form of a student laboratory project.
18. properly use the microscope to examine the difference between selected prokaryotic and eukaryotic organisms. Students will be evaluated by laboratory observation and laboratory exams.
19. make a wet-mount of selected biological material and properly use the microscope to view the material. Students will be evaluated by laboratory observation and laboratory exams.
20. understand the importance of recording laboratory data in the form of a notebook or a laboratory report. Student notebooks or laboratory reports will be evaluated by their instructors as part of their final grade.
21. construct two different types of graphs (histogram and Cartesian), in various lab exercises, using a commercial graphing program. They review each graph for general trends that appear upon the analysis of the biological data. Students will be evaluated by lab examinations and or lab reports.
22. work as a member of a laboratory group and learn how to collect data or information as part of this group. Students will be evaluated during the laboratory period and the participation will be recorded as a component of their final grade. The evaluation may be in the form of a laboratory presentation in addition to the class participation.

Learning Outcomes

At the completion of this course, students will be able to:

1. Demonstrate knowledge of the fundamental concepts and theories that are the basis of the fields of chemistry, biochemistry, cell biology, metabolism and cellular regulation.

2. Utilize various qualitative and quantitative problem-solving and critical thinking techniques to perform experimental procedures and analyze experimental data related to the fields listed above.

3. Demonstrate proper use of the standard tools of the biological scientist.

4. Use the scientific method of inquiry through the acquisition of scientific knowledge.

Course Prerequisite

Prerequisites: priority will be given to students accepted in the CUH Nursing Major.

Required Learning Materials

This lecture course will use the material required for the class BI101., you will need to purchase the access to McGraw-Hill "Connect" for the text: **Understanding Biology. 3rd Edition.** ISBN10: 1260240908; ISBN13: 9781260240900. Copyright: 2021

Additional material will be supplied as needed using Canvas.

Course Website:

https://chaminade.instructure.com/courses/15988

Technical Assistance for Canvas Users:

- Search for help on specific topics or get tips in Canvas Students
- Live chat with Canvas Support for students
- Canvas Support Hotline for students: +1-833-209-6111
- Watch this video to get you started
- Online tutorials: click on "Students" role to access tutorials
- 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 TutorMe. Tutor Me can be accessed 24/7 from your Canvas account. Simply click Account – Notifications – TutorMe. For more information, please contact Kōkua 'Ike at tutoring@chaminade.edu or 808-739-8305.

Assessment

	% Of Grade	Due Date
Assignments/Quizzes	30	Weekly
Midterm	30	02/28/2022 (tentative date)
Final	30	04/25/2022
Attendance/discussions	10	Ongoing evaluation
Total	***100***	

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 Outstanding scholarship and an unusual degree of intellectual initiative
B Superior work done in a consistent and intellectual manner

C Average grade indicating a competent grasp of subject matter
D Inferior work of the lowest passing grade, not satisfactory for fulfillment of prerequisite course work
F Failed to grasp the minimum subject matter; no credit given

Course Policies

Late Work Policy

Assignments must be submitted by the due date. In case of issues, contact the instructor as soon as possible.

Grades of "Incomplete"

As per catalog policy, under exceptional circumstances the instructor can grant an incomplete grade. The work will have to be completed within 90 days.

Instructor and Student Communication

Please use your Chaminade email or canvas to communicate with the instructor via email outside the class. Response time will be within four business days. In-person and Zoom conferences can be arranged.

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.

Disability Access

If you need individual accommodations to meet course outcomes because of a documented disability, please speak with me to discuss your needs as soon as possible so that we can ensure your full participation in class and fair assessment of your work. Students with special needs who meet criteria for the Americans with Disabilities Act (ADA) provisions must provide written documentation of the need for accommodations from Kōkua ʻIke: Center for Student Learning by the end of week three of the class, in order for instructors to plan accordingly. If a student would like to determine if they meet the criteria for accommodations, they should contact the Kōkua ʻIke Coordinator at (808) 739-8305 for further information (ada@chaminade.edu).

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

The following attendance policy is from the 2021-2022 Academic Catalog (p. 54-55). Faculty members should also check with their divisions for division-specific guidelines.

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 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.

Academic Conduct Policy

From the 2021-2022 Undergraduate Academic Catalog (p. 39):
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. Please refer to the Student Handbook for more details. A copy of the Student Handbook is available on the Chaminade website.

For further information, please refer to the Student Handbook: https://chaminade.edu/wp-content/uploads/2019/08/NEW-STUDENT-HANDBOOK-19-20-Final-8.20.19.pdf

Credit Hour Policy

The unit of semester credit is defined as university-level credit that is awarded for the completion of coursework. One credit hour reflects the amount of work represented in the intended learning outcomes and verified by evidence of student achievement for those learning outcomes. Each credit hour earned at Chaminade University should result in 45 hours of engagement. This equates to one hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately fifteen weeks for one semester, 10-week term, or equivalent amount of work over a different amount of time. Direct instructor engagement and out-of-class work result in total student engagement time of **45 hours for one credit**.

The minimum 45 hours of engagement per credit hour can be satisfied in fully online, internship, or other specialized courses through several means, including (a) regular online instruction or interaction with the faculty member and fellow students and (b) academic engagement through extensive reading, research, online discussion, online quizzes or exams; instruction, collaborative group work, internships, laboratory work, practice, studio work, and preparation of papers, presentations, or other forms of assessment. This policy is in accordance with federal regulations and regional accrediting agencies.

Schedule (Draft).

Week 1	01/10/2022	Chapter 1: The Science of Biology, and Syllabus introduction
	01/12/2022	Chapter 2: The Nature of Moleculars and the Properties of Water A
	01/14/2022	Chapter 2: The Nature of Moleculars and the Properties of Water B
Week 2	01/17/2022	**Martin Luther King Jr. Day**
	01/19/2022	Chapter 3: The Chemical Building Blocks of Life **Quiz 1**
	01/21/2022	Chapter 4: Cell Structure A
Week 3	01/24/2022	Chapter 4: Cell structure B
	01/26/2022	Chapter 5: Membranes A
	01/28/2022	Chapter 5: Membranes B
Week 4	01/31/2022	Chapter 6: Energy and Metabolism A
	02/02/2022	Chapter 6: Energy and Metabolism B **Quiz 2**
	02/04/2022	Chapter 7: How Cells Harvest Energy A
Week 5	02/07/2022	Chapter 7: How Cells Harvest Energy B
	02/09/2022	Chapter 8: Photosynthesis A
	02/11/2022	Chapter 8: Photosynthesis B
Week 6	02/14/2022	Chapter 9: Cell Communication A
	02/16/2022	Chapter 9: Cell Communication B
	02/18/2022	Chapter10: How Cells Divide
Week 7	02/21/2022	**President Day**
	02/23/2022	Chapter 11: Sexual Reproduction and Meiosis A
	02/25/2022	Chapter 11: Sexual Reproduction and Meiosis B, and Review for Midterm
Week 8	02/28/2022	**Midterm (Ch 1-11)**
	03/02/2022	Chapter 12: Patterns of Inheritance A
	03/04/2022	Chapter 12: Patterns of Inheritance B
Week 9	03/07/2022	*Chapter 13:* The Chromosomal Basis of Inheritance A
	03/09/2022	Chapter 13: The Chromosomal Basis of Inheritance A
	03/11/2022	Chapter 14: DNA: The Genetic Material A
Week 10	03/14/2022	Chapter 14: DNA: The Genetic Material B. **Quiz 3**
	03/16/2022	Chapter 15: Genes and How They Work A
	03/18/2022	Chapter 15: Genes and How They Work B
Week 11	03/21/2022	Chapter 16: Control of Gene Expression A
	03/23/2022	Chapter 16: Control of Gene Expression B
	03/25/2022	Chapter 17: Biotechnology A
Week 12	03/28/2022	Chapter 17: Biotechnology B **Quiz 4**
	03/30/2022	Chapter 18: Genomics A
	04/01/2022	Chapter 18: Genomics B
Week 13	04/04/2022	Chapter 19: Genes Within Populations A
	04/06/2022	Chapter 19: Genes Within Populations B **Quiz 5**
	04/08/2022	Chapter 20: The Evidence for Evolution A
Week 14	04/11/2022	Chapter 20: The Evidence for Evolution B
	04/13/2022	Chapter 21: The Origin of Species A
	04/15/2022	Chapter 21: The Origin of Species B
Week 15	04/18/2022	Review the study guide for final exam
	04/25/2022	**Final exam (Ch 11-21)**
Week 16	04/27/2022	Make up exam arrangement when necessary

The instructor may modify elements of this syllabus according to the operational needs of the class