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

Course Number:	BI410L
Course Title:	Advanced Human Physiology I Lab
Department Name:	Natural Sciences and Mathematics
Term:	Fall 2023
Course Credits:	1
Class Meeting Days:	Monday
Class Meeting Hours:	2:30pm - 5:20pm
Class Location:	Henry Hall Lab 3
Canvas Course:	https://chaminade.instructure.com/courses/28887

Instructor Name:	Michael Weichhaus
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Office Hours:	Mon//Wed/Fri 11:30am - 1:30pm

University Course Catalog Description

Laboratory section accompanying BI 410. Concurrent registration in BI 410 required. Prerequisites: BI 307/BI 307L. Materials intensive fee applies.

Course Overview

This course is designed to supplement the accompanying Advanced Human Physiology class, with a primary focus on the intricate processes of human metabolism, while offering hands-on exploration of broader aspects of human physiology through laboratory experience. Structured into three core segments, the course initially leads students through ten virtual laboratory exercises, designed to offer insights into various physiological functions such as muscle, cardiac, or lung physiology that may be challenging to demonstrate in a traditional lab setting. The second segment extends the learning experience by requiring students to conceptualize and develop a research project in connection with BI300, leveraging the knowledge and skills acquired throughout the course. Lastly, the course will afford students the opportunity to conduct physiological measurements on their own bodies, thereby further deepening their understanding of the human body's complex mechanisms and the concepts discussed during the course.

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 ‘Olelo 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. 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

Alignment of Course Learning Outcomes

Course Learning Outcomes	Program Learning Outcomes	Marianist Values
Interpret physiological data and draw reasonable conclusions	1; 2; 3; 6	2; 4
Formulate testable hypotheses	1	2
Design scientifically valid methods and carry out scientific experimentation	1; 2; 3; 4; 6	2; 4
Argue for scientific approaches to testing hypotheses and present conclusions in writing	1; 2; 3; 4; 6	2; 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 *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.

Course Prerequisites

BI 308/BI 308L

Required Learning Materials

PhysioEx 10.0, Pearson, Benjamin Cummings. (http://physioex.com/login.html)

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 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

PhysioEx Activities	25 percent
Lab Reports	25 percent
Project presentation	20 percent
Project Discussions	10 percent
Project Final Report	20 percent
	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 assessments indicated above. The canvas gradebook will display your current grade. They are interpreted as follows:

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.

Course Policies

Late Work Policy

- **PhysioEx Quizzes:** Students are afforded a one-week grace period for PhysioEx quizzes without penalty.
- **Lab Reports (Write-Up for 'Wet' lab activities):** Lab reports submitted up to 24 hours late will incur a 5% grade penalty, and those submitted between 24 hours and 7 days late will incur a 10% penalty.
- **Group Presentations:** No late accommodations will be made for group presentations, except in the case of illness documented by a physician.
- **Discussions:** Due to the necessity of facilitating decision-making during lab time, no late accommodations will be provided for discussions.
- **Final Project Report:** Due to the deadline coinciding with the end of the semester, a 5% grade penalty will be applied if the Final Project Report is submitted up to 24 hours late. A 10% penalty will apply if submitted between 24 and 48 hours late.

Additional Guidelines regarding timeliness:

Communication: If you anticipate needing an extension, it is your responsibility to communicate this need as soon as possible. Failure to communicate will result in the late penalties being applied.

Responsibility: Meeting deadlines is an essential skill and a professional expectation. Planning and time management are critical to your success in this course.

Exceptions: In extraordinary circumstances, additional considerations may be made at the discretion of the instructor. Please communicate your situation honestly and promptly.

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

Questions for this course can be emailed to the instructor. Online, in-person and phone conferences can be arranged. Response time will take up to 3 days. The instructor is available during office hours and will be able to meet with students on a first come first serve basis.

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 Academic Catalog.

Students are expected to attend regularly 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 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 Academic Catalog:
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.

Violations of Academic Honesty: 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.

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 a minimum of 45 hours of engagement, regardless of varying credits, duration, modality, or degree level. 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. Terms that have alternative lengths, such as 10 week terms, should have an equivalent amount of faculty instruction and out-of-class student work to meet each credit hour. Direct instructor engagement and out-of-class work result in total student engagement time of 45 hours for one credit. The number of engagement hours may be higher, as needed to meet specific learning outcomes.

Specific Credit Situations

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, practica, studio work, and preparation of papers, presentations, or other forms of assessment. This policy is in accordance with federal regulations and regional accrediting agencies.

How This Course (1 credit) Meets the Credit Hour Policy:

- Seat time:
    - 36.8h (170min x 13 weeks (2x holidays))
- Time spent on key assessments (a significant amount of these are accomplished during seat time):
    - Discussions: 5h (5 discussions x 1h)
    - Group Presentation preparations: 15h
    - Project Final Report: 15h
    - PhysioEx labs and quizzes: 26h (2h x 13 weeks)
    - In-person activities reports: 8h (4 reports x 2h)
- Total:
    - 105.8h

Schedule

Week	Physio-Ex virtual labs	Project work	Wet lab activities
1	Intro to physio-ex	Topic Discussion	Lab rules/Lab safety
2	Labor Day holiday		
3	Cell Transport Mechanisms and Permeability	Literature Review Discussion	
4	Skeletal Muscle Physiology	Hypothesis Refinement and Experimental Design	
5	Neurophysiology of Nerve Impulses	Anticipated Challenges Discussion	
6	Endocrine System Physiology	Project Impact	
7	Cardiovascular Dynamics	Group Presentation	
8	Columbus Day holiday		
9	Cardiovascular Physiology		Pig Dissection
10	Respiratory System Mechanics		Oral Glucose Tolerance Test
11	Chemical and Physical Processes of Digestion	Data Generation	Urine Acid Measurement
12	Renal System Physiology		BMR and RER measurements
13	Acid-Base Balance		
14	Blood Analysis		
15	Serological Testing	Submit final project report	

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.