Course Syllabus
Chaminade University Honolulu
3140 Waialae Avenue - Honolulu, HI 96816

Course Number:	BI410
Course Title:	Advanced Human Physiology I
Department Name:	Biology
College/School/Division Name:	Natural Sciences and Mathematics
Term:	Fall 2022
Course Credits:	3
Class Meeting Days:	Mon/Wed/Fri
Class Meeting Hours:	10:30am - 11:20am
Class Location:	Henry Hall, 210
Canvas course link:	https://chaminade.instructure.com/courses/20567
Class communication:	https://groupme.com/join_group/88321318/RhOvWwo0
Instructor Name:	Michael Weichhaus
Email:	michael.weichhaus@chaminade.edu
Phone:	808.440.4286
Office Location:	Wesselkamper Science Center room 107
Office Hours:	Mon/Tue/Wed/Thu 11:30am - 1pm

University Course Catalog Description

Physiology of energetic and metabolic processes and endocrine control of metabolism in both healthy and disease states. Biochemistry of metabolism and the role of macro- and micronutrients in maintenance of homeostasis are examined.

Course Overview

This course has the student come to an understanding of the physiological and metabolic processes involved in processing nutrients. This ranges from gaining understanding of the organs involved in digestion, to the biochemical processes that transform nutrients to the molecules utilized by cells. Furthermore, the course demonstrates the regulation of nutrient processing and aberrations of the process in metabolic diseases. The course employs lectures, group discussions, Q&A sessions and individual learning to accomplish this goal. The student learns to integrate knowledge from different disciplines, such as anatomy, physiology and biochemistry to create a holistic understanding of human physiology. The student furthers their understanding of the scientific method. The course prepares the student for medical, dental, or other graduate school endeavors.

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
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 Noʼeau (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 (Naʼauao) 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

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, 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. 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 (CLO)

Upon completion of this course in Human Physiology the student will achieve the following

1. Distinguish between micro- and macronutrients and their role in the human organism
2. Describe the anatomical and biochemical process of nutrient processing
3. Explain the metabolism of macronutrients for energy and body composition
4. Assess the regulatory processes of nutrient homeostasis in the human body
5. Differentiate between inherent and acquired metabolic diseases and provide examples for each

Alignment of Learning Outcomes

	CLO 1	CLO 2	CLO 3	CLO 4	CLO 5
Marianist Values	2	2	2	2	2, 4
Program Learning Outcomes	4, 5	4	4	4, 6	4, 6

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/L
Concurrent/Previous enrollment in BI 410 Lab required.

Required Learning Materials

MindTap: Advanced Nutrition and Human Metabolism (ISBN: 9780357450017)
Access through canvas; Cengage Learning;

2nd version available in the library (Catalog: QP141 .G76 1995)

Course Website:

You are enrolled in the online version of this course through canvas.
Website: https://chaminade.instructure.com/courses/20567
Apple: http://apple.co/1wD5aok
Android: http://bit.ly/1ekgN4M

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 ʻIke: 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 ʻIke'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 ʻIke at tutoring@chaminade.edu or 808-739-8305.

Assessment

Assignment	**Percent of grade**
Lecture Presentation	15 percent
1st Lecture Exam	15 percent
2nd Lecture Exam	15 percent
3rd Lecture Exam	15 percent
Combined Essay grade	10 percent
MindTap quizzes	5 percent
MindTap case studies	5 percent
Final exam	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 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

There are no make-ups for exams, unless a physician's note documents your absence during exams. Lecture presentations CANNOT be made-up. Essays turned in late will be assessed a penalty: a half-letter grade if it is up to 24h late, or a full-letter grade for 24h-7 days late. Essays will not be accepted if overdue by more than seven days.

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.

Writing Policy

Instructions on writing standards, citation styles, and formatting are detailed in the writing assignment and follow the instructions of the journal of biological chemistry.

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. 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 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 37.5 hours of engagement. For example, in a one credit hour traditional face to face course, students spend 50 minutes in class per week for 15 weeks, resulting in a minimum of 12.5 instructional hours for the semester. Students are expected to engage in reading and other assignments outside of class for at least 2 additional hours per week, which equals an additional 25 hours. These two sums result in total student engagement time of 37.5 hours for the course, the total engagement time expected for each one credit course at Chaminade.

The minimum 37.5 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.

Schedule

Week	Date	Lecture	Chapter	Comments
1	8/22	Syllabus of course, Course overview, Cellular Recap	Chapter 1	
	8/24	GI tract overview	Chapter 2	
	8/26	GI tract anatomy and physiology		
2	8/29	Digestive and absorptive processes		
	8/31	Hormonal Regulation of digestion		
	9/02	Types of carbohydrates	Chapter 3	
3	9/05	Labor Day Holiday – No class		
	9/07	Carbohydrate digestion and metabolism I: Glycolysis		**Essay 1 due**
	9/09	Carbohydrate digestion and metabolism II: Tricarboxylic Acid Cycle	Chapter 3	
4	9/12	Carbohydrate digestion and metabolism III: ETC and Oxidative Phosphorylation		
	9/14	Hormonal Regulation of glucose homeostasis		
	9/16	Digestion of dietary fiber and health implications	Chapter 4	
5	9/19	**EXAM #1**		
	9/21	Types of lipids	Chapter 5	
	9/23	Lipids: Digestion and absorption		
6	9/26	Lipids: Transport and metabolism		
	9/28	Lipids: Disease risk and Ethanol		
	9/30	Protein: Amino Acid structure/Digestion and absorption	Chapter 6	
7	10/03	Amino Acid metabolism		**Essay 2 due**
	10/05	Protein: Functional role		
	10/07	Nitrogen containing non-proteins		
8	10/10	Columbus Day Holiday – No class		

	10/12	**EXAM #2**		
	10/14	Regulation of metabolism I	Chapter 7	
9	10/17	Regulation of metabolism II		
	10/19	Measuring body composition and energy regulation I	Chapter 8	
	10/21	Measuring body composition and energy regulation II		
10	10/24	Vitamin C, Thiamine	Chapter 9	**Student presentations**
	10/26	Riboflavin, Niacin,		
	10/28	Vitamin B5, Vitamin B6,		
11	10/31	Folate, Biotin	Chapter 10	
	11/02	Vitamin B12, Vitamin A	Chapter 10/11	
	11/04	Vitamin D, Vitamin E	Chapter 11	
12	11/07	Vitamin K, Calcium	Chapter 12/13	
	11/09	Magnesium, Iron		
	11/11	Veterans Day Holiday – No class		
13	11/14	Zinc, Iodine	Chapter 13/14	**Student presentations**
	11/16	Selenium, Chromium	Chapter 11	
	11/18	**EXAM #3**		
14	11/21	Water and Electrolytes	Chapter 9	
	11/23	Vitamins I	Chapter 10	**Essay 3 due**
	11/25	Thanksgiving Recess – No class		
15	11/28	Vitamins II	Chapter 12	
	11/30	Minerals I	Chapter 13	
	12/02	Minerals II	Chapter 14	

Reading assignments may not be repeated in class. You are responsible for covering the material contained in the textbook. The material covered during lecture time MAY NOT BE sufficient to cover the material examined during quizzes.

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.