Course Syllabus

Edit

WELCOME to the Fall 2020 Semester of Biology 210L Biotechniques Lab

Once you have finished reading through the following information please make sure to go and view the **WELCOME** Module. This should be done BEFORE our first meeting.

Course & Instructor Contact Information:

Instructor: Kahoali`i Keahi

Class Meetings: Monday in Henry Lab 2, 2:30pm - 5:20pm

Office Hours: Henry Hall 6, by appointment

E-mail: **kahoalii.keahi-wood@chaminade.edu (mailto:jolene.cogbill@chaminade.edu)**

The best way to contact me is by email, in which I will respond to all student emails by the end of the day. If I do not respond within 24 hours, please send me a follow up email. Response times on weekends may take longer so please plan accordingly. I will get back to you as soon as possible. Mahalo!

Required Text:

No required text for this lab. All necessary protocols and reading will be provided to you either as handouts or will be posted on Canvas.

Course Description:

Introduction to biological techniques. Techniques used in the fields of molecular and cellular biology are covered including DNA, RNA and protein purification and manipulation. One three hour period per week.

General Course Objectives:

- To understand basic laboratory safety.

- To learn how to keep a proper laboratory notebook.
- To learn how to operate basic laboratory equipment.
- To be comfortable utilizing basic mathematical calculations necessary

Please click on the link to view the full syllabus which includes specific student learning objectives, student expectations, assessment and grading criteria, university policies and the semester course outline:

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 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

Biology Program Learning Outcomes

1. An understanding of the scientific method and the ability to design and test a hypothesis.
2. The ability to visualize, statistically evaluate, validate and interpret scientific data, and to communicate science effectively both orally and in writing.
3. The ability to acquire and comprehend information from published scientific literature and to employ computational resources in the resolution of biological problems.
4. An understanding of the chemical and physical principles that unite all life forms, and of biological organization at the molecular, cellular, tissue, organ, organism and system levels.
5. The ability to 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. An understanding of the etiology of major human disease burdens in terms of pathophysiological mechanisms, epidemiology within populations and possible therapeutic approaches.
7. An understanding of the entry requirements, career pathways and progression for the major post-graduate fields of research, education and health professions.

Alignment of Learning Outcomes

	CLO 1	CLO 2	CLO 3	CLO 4	CLO 5	CLO 6
Marianist Values	2, 5	2, 5	2, 5	2, 5	2, 5	2, 5

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. **Safety lab etiquette:** Demonstrate the capacity to work safely in a laboratory setting and have awareness of common regulatory guidelines for laboratory work. Additionally, students will consistently and proactively behave within accepted norms of lab etiquette.							x
2. **Record keeping:** Understand the principles of good scientific record keeping; demonstrate the keeping of laboratory notebooks and experimental record, and organization of data for accessibility and later understanding and reproducibility		x					x
3. Mathematics: Perform basic mathematical calculations including scientific notation and algebraic conversions essential to the preparation of solutions and quantitation of molecules including standard curve analysis and regression analysis.	x						x
4. Precise and reproducible manipulations: Be familiar with basic laboratory equipment operation and theory of its operation as well as be able to demonstrate mechanical and technical operations		x					x

central to science laboratories; including properly and accurately operating basic biology lab instrumentation such as glassware, pipettes, incubators, balances, centrifuges, pH meters, spectrophotometers, and thermocyclers.							
5. Precise and reproducible measurements: Demonstrate understanding of the importance and methods for calibration, repetition of laboratory manipulations, understanding of systematic error.		x					x
6. Databases: Familiarity with electronic sources of information pertaining to the above			x				x

Course Prerequisites: None

Course Website: https://chaminade.instructure.com/courses/13891

Technical Assistance for Canvas Users:

- Search for help on specific topics at **instructure.com** (http://help.instructure.com/)
- **Chat live with Canvas Support 24/7/365** (https://secure.livechatinc.com/licence/2695732/open_chat.cgi?groups=46)
- Watch this **video to get you started** (https://vimeo.com/72777900) with online guides and tutorials
- Contact the Chaminade IT Helpdesk for technical issues: **helpdesk@chaminade.edu** (mailto: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/** **(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** **(mailto:tutoring@chaminade.edu)** or 808-739-8305.

Assessment

1. **The grade of the course will be determined in the following manner:**

- Competency Checks 30%
- Quizzes 20%
- Homework 20%
- Notebook 10%
- Participation 10%
- Attendance 10%

- Laboratory notebook:
  - We will use electronic notebooks this semester. Additional information is available on Canvas. Information found **here**.
  - Notebooks will be checked for a grade and randomly throughout the semester.
- Competency Checks & Quizzes
  - Quizzes will be given at the beginning of class & will cover information from the previous week's lab.
  - Quiz grades will be posted on canvas immediately after completion.
  - Competency checks will be performed at the end of each module.
  - Competency check grades will be posted before the next lab.

2. **Grading Scale:**

A= 90%-100%: Outstanding scholarship and an unusual degree of intellectual initiative.

B= 80%: Superior work done in a consistent intellectual manner.

C= 70%: Average grade indicating a competent grasp of subject matter.

D= 60%: Inferior work of the lowest passing grade, not satisfactory for fulfillment of prerequisite course work.

F=below 60%: Failed grasp of the minimum subject matter; no credit given.

3. **Extra credit opportunities may be available during the course of the semester.**

Course Policies

Late Work Policy

- Presence in class is mandatory & necessary in order for a student to fully grasp concepts. 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. 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.
- If you miss a class it is **YOUR** responsibility to ask the instructor or your classmates for the information that you missed and to pick up any handouts that may have been distributed.
- Any missed work that is turned in late and graded may receive up to a one grade deduction. So if the assignment was graded as A work, due to being late it may be decreased to a B.
- Any missed work that is turned in late without any prior discussion with the instructor will not be accepted and will be given a score of 0.

Grades of "Incomplete"

Students and instructors may negotiate an incomplete grade when there are specific justifying circumstances. 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 may not be extended.

Writing Policy

This course does not have written assignments.

Instructor and Student Communication

Questions for this course can be emailed to the instructor at **chelsea.saitoreis@chaminade.edu (mailto:Chelsea.saitoreis@chaminade.edu)** . Office hours are listed above. Please email me ahead of time if you plan to stop by to ensure that I am not meeting with another student. Students are also encouraged to set up meetings with me if my listed office hour times do not fit within current course schedule.

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. Please also refer to **online etiquette rules.**

ADA Policy

Statement from the **New Student Handbook (https://chaminade.edu/wp-content/uploads/2019/08/NEW-STUDENT-HANDBOOK-19-20-Final-8.20.19.pdf)**

Pursuant to federal and state laws, including the Americans with Disabilities Act of 1990 as amended by the ADA

Amendments Act of 2008 and Section 504 of the Rehabilitation Act of 1973, all qualified students with disabilities are protected from discrimination on the basis of disability and are eligible for reasonable accommodations or modifications in the academic environment to enable them to equal access to academic programs, services, or activities. If a student would like to determine if they meet the criteria for accommodations, they should contact the Counseling Center in the Student Support Services Building, Room 101, by phone at (808) 735-

4845 or email: counselingcenter@chamiande.edu for further information. Web: **studentaffairs.chaminade.edu/counseling-center/counseling-services (https://portal.chaminade.edu/faculty/CTL/Shared%20Documents/studentaffairs.chaminade.edu/counseling-center/counseling-services)**

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

Due to the current situation with hybrid classes. Attendance will be graded based on participation and completion of laboratory material before each deadline.

The following attendance policy is from the 2018-2019 Academic Catalog (p. 57-58). Instructor attendance policy outlined above under “evaluation of student performance”.

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.

Academic Conduct Policy

From the 2018-2019 Undergraduate Academic Catalog (p. 42):

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 (https://chaminade.edu/wp-content/uploads/2019/08/NEW-STUDENT-HANDBOOK-19-20-Final-8.20.19.pdf)**

Course Schedule

Every effort has been made to insure that the material in this syllabus is accurate and complete. The instructor reserves the right to make any changes in the contents of this syllabus that she deems necessary.

Week	Dates	Lab Topic	Assignments
1	Feb. 1	Welcome, Syllabus, Lab Safety and, Chemicals	Prep for next week quiz
2	Feb. 8	No Class	Lab safety Quiz Prep for next week quiz
3	Feb. 15	Upena and Koko	Prep for next week quiz Upena making discussion
4	Feb. 22	Precision & Accuracy	Precision & accuracy quiz Prep for next week quiz
5	March 1	Precision & Accuracy: Balances	Balances Quiz Prep for next week quiz
6	March 8	Precision & Accuracy: Pipettes	Pipettes Quiz

			Prep for next week quiz
7	March 15	Precision & Accuracy: Microscopes	Microscopes Quiz Prep for next week quiz
8	March 22	Introduction to Solutions & Dilutions with La`au	Math worksheet (due next week) Prep for next week quiz
9	March 29	Solutions & Dilutions: Molarity, Concentrations, Dilution Factors	Molarity, Conc. & Dil quiz Prep for next week quiz
10	April 5	Solutions & Dilutions: Buffers & pH	Buffers and pH Quiz Prep for next week quiz
11	April 12	Solutions & Dilutions: Serial Dilutions	Serial Dilutions Quiz Prep for next week quiz

12	April 19	Technical Application(s): DNA & RNA	DNA & PCR Quiz
13	April 26	Technical Application(s): Gel Electrophoresis	
14	May 3	Introduction to Data Visualization	