



## Advanced Comparative and Human Anatomy Laboratory Biological Science BI321L

**Course Number:** BI321L

**Course Title:** Advanced Comparative and Human Anatomy Laboratory

**Department Name:** Biology

**College/School/Division Name:** School of Natural Sciences and Mathematics

**Class Meeting Days:** Tuesdays

**Class Meeting Hours:** 2:30 – 5:20 pm

**Class Location:** Henry Hall, Lab Room 2

**Instructor Name:** Dr. Mindy McDermott

**Email:** mindy.mcdermott@chaminade.edu

**Office Location:** Wesselkamper Office Room 103

**Office Hours:** by appointment

### Required Texts and Materials

- Fishbeck and Sebastiani, Comparative Vertebrate Anatomy, Manual of Vertebrate Dissection, Third Edition. Morton Publishing Company.
- Computer with internet access
- Regular access to Canvas
- Covered shoes
- Lab coat (can be purchased in the Campus Bookstore)

### Supplemental Texts and Materials

All other reading materials will be provided or sourced from free access on the internet.

### Credit Hour Policy

This is a one-credit course requiring at least 45 clock hours of student engagement, per the official Chaminade University Credit Hour Policy. Students enrolled in this course are expected to spend about 42.5 hours in class, 15 hours on assignments, and at least 18.5 hours studying for the midterms and final exams.

### Course Overview

Advanced survey of human gross anatomy and adaptation is used to explore comparative aspects of the developmental biology and adaptations of other vertebrate species. Concurrent registration in BI 321 lecture is required.

## Marianist and 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 'Ölelo No'eau (Hawaiian proverbs) and Marianist core beliefs.

1. Educate for Formation in Faith (Mana) E ola au i ke akua ('Ölelo 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 ('Ölelo 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. ('Ölelo 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 ('Ölelo 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 ('Ölelo No'eau 203). All knowledge is not taught in the same school.

## Alignment of Natural Sciences Courses with Marianist & Native 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 *Mai'au*, be neat, prepared, careful in all we do; *Makawalu*, demonstrate foresight and planning; *'Ai*, sustain mind and body; *Pa`a Na`au*, learn deeply.

### Student Class Content Learning Outcomes

- 1) Understand how comparative anatomy is used to view/discern evolutionary relationships
- 2) Examine different vertebrates and their interactions with both the abiotic and biotic components of their environment
- 3) Understand the structural and physiological adaptations of representative vertebrate groups to their environments
- 4) Gain an appreciation of the structure-function relationships in representative vertebrates

### Linkage to Program Learning Outcomes

PLO 4,5  
PLO 1,2,4,5,6  
PLO 1,2,4,5,6  
PLO 1-6

## Biology Program Learning Outcomes (PLO)

Upon completion of the B.S. degree program in Biology the student will demonstrate:

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. Evaluate the etiology of major human disease burden in terms of, pathophysiological mechanisms, epidemiology within populations and possible therapeutic approaches
7. Integrate an awareness of bioethical issues to positively influence the application of science to service, justice and peace in the solution of societal problems.

## Strategies for Success

1. Read your laboratory assignments before the lab
2. Attend all labs and study sessions
3. Actively engage in all activities. Don't divide up the work and copy
4. Devote a block of time each day to your A&P course
  - You should be spending 1-2 hours at home for every hour in the lab
5. Set up a study schedule and stick to it
6. Do not procrastinate
  - Spend time studying models, charts, dissections etc. during each lab. Don't wait until just before the practical
7. Develop the skill of memorization, and practice it regularly
8. Approach the information in different ways and find ways that have special significance to you
  - The more ways you learn something, the more often you access it, and the more importance you assign it the easier it becomes to remember
9. Have your classmates help motivate you and form study groups
10. As soon as you experience difficulty with the course, seek assistance

## Grading Policies

### Grading Procedure

Grades will reflect an overall understanding of topics covered by practical work in the laboratory. Attendance, completion of assigned readings, and attentiveness in the laboratory will ensure satisfactory performance in the class. Demonstrating a thorough understanding of course material and intelligent engagement in class discussions constitutes high achievement in the course. We will have in-class work to do to facilitate class discussion, which may range from group activities, reviews of current literature, media, articles, and class discussions. Group activities may consist of brief oral reports or short written reports. For written coursework, you will be graded on your ability not only to answer the question, but also in how effectively you can defend your answer/position using your knowledge of the subject & applying what you learned through the use of appropriate facts and examples.

| <u>Specific Assignment</u> | <u>% Of Grade</u> | <u>Due Date</u>            |
|----------------------------|-------------------|----------------------------|
| Attendance                 | 10%               | Each week -semester long   |
| Participation              | 20%               | Each week semester long    |
| Lab Book                   | 10%               | Checks throughout semester |
| Semester exams             | 60%               | Two during semester        |

## 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, tests, reports and examinations. They are interpreted as follows:

- A (90% & above) Outstanding scholarship and an unusual degree of intellectual initiative
- B (80–89%) Superior work done in a consistent and intellectual manner
- C (70–79%) Average grade indicating a competent grasp of subject matter
- D (60–69%) Inferior work of the lowest passing grade, not satisfactory for fulfillment of course
- F (59% & below) Failed to grasp the minimum subject matter; no credit given

## 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 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](mailto:tutoring@chaminade.edu) or 808-739-8305.

## Course Policies

### Late Work Policy

Assignments are expected on the due date. If you are unable to make the due date, a conversation must be had with me PRIOR to the due date for an extension. Unexcused late work will receive a reduced grade.

### 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.

### Instructor and Student Communication

Questions for this course can be emailed to the instructor at [[mindy.mcdermott@chaminade.edu](mailto:mindy.mcdermott@chaminade.edu)]. Online, in-person, and phone conferences can be arranged. Response time will take place as soon as possible, usually within one day.

### 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.

### ADA Policy

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@chaminade.edu](mailto:counselingcenter@chaminade.edu) for further information. Web: [studentaffairs.chaminade.edu/counseling-center/counseling-services](http://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**

Students are expected to regularly attend 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, 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**

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.

## **A Note on Artificial Intelligence (AI)**

Any work written, developed, created, or inspired by AI is considered plagiarism and will not be tolerated. While the ever-changing (and exciting!) new developments with AI will find their place in our workforces and personal lives, in the realm of education and learning, this kind of technology does not belong. This is because the use of AI robs us all of the opportunity to learn from our experiences and from each other, to play with our creative freedoms, to problem-solve, and to contribute our ideas in authentic ways. In a nutshell, college is a place for learning, and this course is specifically a space for learning how to improve our writing. AI simply cannot do that learning for us.

| Week | Class Date | Topic  | Assignments  |
|------|------------|--|--|
| 1    | 8/22       | Phylogeny – Vertebrate species relationships | 1. Canvas Welcome module<br>2. Phylogeny worksheets  |
| 2    | 8/29       | Histology, tissue structure and disease      | 1. Histology Prelab<br>2. Week 2 worksheets<br>3. Working group discussion #1  |
| 3    | 9/5        | Lamprey Dissection                           | 1. Lamprey Dissection PreLab<br>2. Lamprey Dissection Worksheet<br>3. Working group discussion #2  |
| 4    | 9/12       | Integument                                   | 1. Integument Prelab<br>2. Integument worksheets for Dogfish Shark, Salamander, Cat, and Human<br>3. Working group discussion #3                       |
| 5    | 9/19       | Skeletal System                              | 1. Skeletal System Prelab<br>2. Skeletal System worksheets for Dogfish Shark, Salamander, Cat, and Human<br>3. Working group discussion #4             |
| 6    | 9/26       | Muscles                                      | 1. Muscular System Prelab<br>2. Skeletal System worksheets for Dogfish Shark, Salamander, Cat, and Human<br>3. Working group discussion #5             |
| 7    | 10/3       | Respiratory System                           | 1. Respiratory System Prelab<br>2. Respiratory System worksheets for Dogfish Shark, Salamander, Cat, and Human<br>3. Working group discussion #6       |
| 8    | 10/10      | <b>Midterm Exam</b>                          | <b>1. Study very hard!!</b><br>2. Hand in Lab book for feedback  |
| 9    | 10/17      | Cardiovascular System                        | 1. Cardiovascular System Prelab<br>2. Cardiovascular System worksheets for Dogfish Shark, Salamander, Cat, and Human<br>3. Working group discussion #7 |
| 10   | 10/24      | Digestion                                    | 1. Digestion System Prelab<br>2. Digestion System worksheets for Dogfish Shark, Salamander, Cat, and Human<br>3. Working group discussion #8           |
| 11   | 10/31      | Urogenital System                            | 1. Urogenital System Prelab<br>2. Urogenital System worksheets for Dogfish Shark, Salamander, Cat, and Human<br>3. Working group discussion #9         |
| 12   | 11/7       | Endocrine                                    | 1. Endocrine Prelab<br>2. Endocrine worksheets for Dogfish Shark, Salamander, Cat, and Human<br>3. Working group discussion #10                        |
| 13   | 11/14      | Nervous Systems                              | 1. Nervous System Prelab<br>2. Nervous System worksheets for Dogfish Shark, Salamander, Cat, and Human<br>3. Working group discussion #11              |
| 14   | 11/21      | May move around                              | Virtual Field Trip to the Zoo  |
| 15   | 11/28      | <b>Final Exam</b>                            | 1. Working group reflection paper<br>2. Hand in Lab book<br>3. <b>Study like study machines!!!!</b>  |

**\*Note: This syllabus and course schedule are living documents: they are free to change.** I will adhere as closely as possible, but there may be times in which we will spend extra time on a particular topic or add/delete a topic to the course. I strive to keep our education current and relevant to the world in which we live.