

School of Natural Sciences and Mathematics  
Forensic Sciences Department

## FS 460L, Forensic Taphonomy Laboratory

Eiben Hall 201, Fridays 2:30P-5:20P

Credits: 1      Section: 01      Term: Spring Semester 2026

### Instructor Information



**Instructor:** Carlos A. Gutiérrez Ayala, Ph.D.

**Email:** [Carlos.gutierrez@chaminade.edu](mailto:Carlos.gutierrez@chaminade.edu)

**Phone:** (808) 739 8352

**Office Location:** 207A Eiben Hall

**Office Hours:**

Tuesdays: 1:00P – 2:00P

Wednesdays 1:00P – 3:00P

Thursdays: 1:00P – 2:00P



Schedule your meetings during Office Hours: <https://calendar.app.google/2Jfj1t1Mzs4XtLgf9>

### Communication

You can also request a meeting outside of Office Hours. To do so, send an email to [carlos.gutierrez@chaminade.edu](mailto:carlos.gutierrez@chaminade.edu). Include multiple dates and times that you are available to meet. (Will respond in 24hrs/48hrs)

### School & Department Information

#### School of Natural Sciences and Mathematics

The School of Natural Sciences and Mathematics is located in the Wesselkamper Science Building, Office 116, Phone: (808) 440 4204

If you have questions about the Forensic Sciences Department, the faculty offices are in Eiben Hall 207.

## Course Description & Materials

### Catalog Course Description

FS 460L Forensic Taphonomy Laboratory (1)

Quantitative and qualitative methods for investigating decomposition and its application in medicolegal death investigation.

*Prerequisites:* EN-102, COM-101, CH-323, CH-323L. *Co-requisite:* FS-460.

### Time Allocation

This three-credit course requires 135 clock hours of students' engagement per the official CUH Credit Hour Policy. Students enrolled in this course are anticipated to spend 37.5 hours in class, 28 hours researching and writing the five-page essay, 16 hours studying for the midterm exams, and 10.5 hours studying for and taking the final exam. There will be an additional 43 hours of work required beyond what is listed here (course reading, homework assignments, etc.), averaging 2.9 hours each week.

### Required Materials

This course requires several learning materials that will be provided electronically through Canvas and Google Drive.

#### **Readings**

- Carter, D. O., Orimoto, A., Gutierrez, C. A., Ribéreau-Gayon, A., Pecsí, E. L., Perrault, K. A., & Peterson, A. J. (2023). A synthesis of carcass decomposition studies conducted at a tropical (Aw) taphonomy facility: 2013–2022. *Forensic Science International: Synergy*, 7, 100345.
- Megyesi, M. S., Nawrocki, S. P., & Haskell, N. H. (2005). Using accumulated degree-days to estimate the postmortem interval from decomposed human remains. *Journal of forensic sciences*, 50(3), JFS2004017.
- Keough, N., Myburgh, J., & Steyn, M. (2017). Scoring of decomposition: a proposed amendment to the method when using a pig model for human studies. *Journal of forensic sciences*, 62(4), 986-993.
- Miles, K. L., Finaughty, D. A., & Gibbon, V. E. (2020). A review of experimental design in forensic taphonomy: moving towards forensic realism. *Forensic sciences research*, 5(4), 249-259.

#### **Canvas**

Canvas will be used to store class materials, submit assignments, and access your grade. Canvas will also be used for email communication, but you can also email me directly at [carlos.gutierrez@chaminade.edu](mailto:carlos.gutierrez@chaminade.edu)

### **Google Drive**

This drive will be used to house larger files, if necessary.

## Learning Outcomes

### Program Learning Outcomes (PLOs)

Forensic science is the natural science branch of the justice system. It is concerned with interpreting physical evidence. Investigations proceed by using physical evidence and testimonial evidence to reconstruct past events. Not surprisingly, forensic science comprises several disparate fields of study and the aim of this course is to combine all the scientific knowledge to reconstruct a case and give the answers needed by the justice system.

Upon completion of the B.S. in Forensic Sciences, the student will be able to:

1. Apply the scientific method in an adaptive and mindful manner.
2. Use techniques for recognition, documentation, analysis, and interpretation of physical evidence.
3. Implement quality assurance programs, incorporating ethics and professional practice, to act as stewards of justice and peace throughout the broader community.
4. Communicate disciplinary knowledge to diverse audiences.

### Course Learning Outcomes (CLOs)

This laboratory will teach you experimental and analytical techniques that are used in forensic taphonomy. It will also provide hands-on experience observing vertebrate decomposition, collecting samples and analyzing data.

Upon completion of the FS 460L Laboratory, the student will be able to:

1. Identify and measure taphonomic processes and decomposition phases.
2. Design and conduct a taphonomic study, including sample collection, data analysis and presentation of results
3. Identify the utility of taphonomic research, as well as its biases and limitations.

### 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, and integrity of creation.
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 ('Olelo 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 ('Olelo 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 ('Olelo 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 ('Olelo 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 ('Olelo No'eau 203) All knowledge is not taught in the same school

### Alignment of Course Learning Outcomes

	CLO 1	CLO 2	CLO 3	CLO 4
<b>Marianist Values</b>	x	x	x	x
<b>PLOs</b>	x	x	x	X
<b>Native Hawaiian Values</b>	x	x	x	x
<b>Gen Ed Learning Outcomes (if applicable)</b>				

### Course Activities

### *Evaluation of Student Performance*

All grades will be posted in Canvas within one week of assignment/exam submission. Attendance grades will be posted to Canvas every week. Your grade will be kept current all semester. You are encouraged to contact me at [carlos.gutierrez@chaminade.edu](mailto:carlos.gutierrez@chaminade.edu) at any time to discuss your grades. I strongly encourage you to check your grades regularly. All assignments have firm due dates, and your score will be penalized 10 points for each day late.

### ***Evaluations (Total of 580 Points)***

#### ***Attendance (130 points):***

Classes are scheduled to meet in person on Tuesdays and Thursdays, unless otherwise indicated. You will earn 10 points per class attended starting Friday, January 16<sup>th</sup>. Please be aware that the total attendance points will change if a class period is canceled due to illness, weather, or another reason.

#### ***Examinations (450 points):***

##### ***Taphonomy imaging exercise (100 points)***

This is an exercise to help familiarize yourself with the Forensic Taphonomy Image Database. You will answer a series of questions related to the images included within the database. Bring a device that allows you to view images in high quality (e.g. laptop, tablet).

##### ***Semester research Project: Experiment, Data collection, and scientific manuscript (250 points)***

For each decomposition site visit, you and your team will be assigned to collect a set of decomposition metrics. Collected data and accompanying metadata must be properly entered and organized into a Google file. Decomposition metrics/ data will include:

- Total body score (Megyesi et al. (2005), Keough et al. (2017))
- Skin data (pH, Eh, Temperature)
- Larval mass data (pH, Eh, Temperature)
- Ambient temperature and accumulated degree days (ADD)
- Ambient humidity and accumulated humidity days (ADH)

This experiment relates to the work described in the FS 460 syllabus.

##### ***Participation (100 points)***

Expressing your point of view in forensic sciences is crucial. Because of that, if you participate in classes by **asking questions** or **giving your point of view**, you will earn 100 points per semester.

***Unexcused absences from any midterm or final exam will result in 0 points.***

*If any student misses 2 consecutive labs (2 weeks), they will be administratively withdrawn from the lab.*

## Course Policies

### Extra Credit

If any student needs an extra credit assignment, they should approach the instructor at least one month before finals week (May 4<sup>th</sup> to the 8<sup>th</sup>) to discuss possible options. It won't be an extra credit assignment for unexcused absences or for other situations in which students have shown a lack of interest in the course.

### Lateness:

Students should be in class on time. If a student is late by 2-10 minutes, they will lose 5 points from their attendance. If they are more than 10 minutes late, they will lose all 10 attendance points assigned for that lecture.

### Changes to the Syllabus

While the provisions of this syllabus are as accurate and complete as possible, your instructor reserves the right to change any provision herein at any time. Every effort will be made to keep you informed of such changes, and information will be available from your instructor.

### Grades of Incomplete

This is a very unique situation for this class. The only circumstances in which some students might find themselves in this situation are if they have an extra credit assignment pending for evaluation or submission. This will be discussed between the instructor and the student.

### Final Grades

Final grades are submitted to [Self-Service](#):

<b>Activity</b>	<b>Points</b>
Taphonomy experiment imaging	100
Semester research Project	250
Participation	100
Attendance	130 (10 point per lab)
<b>Total</b>	<b>580</b>

Points	%	Letter Grade
580 – 522	100 – 90	A
521 – 417	89 – 80	B
416 – 291	79 – 70	C
290 – 174	69 – 60	D
173 – 0	59 – 0	F

## Important Information

### Academic Honesty

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.

For the most up to date information, please refer to the [Academic Honesty Policy](#) on the Chaminade University Catalog website.

### TITLE IX AND NONDISCRIMINATION STATEMENT:

Chaminade University of Honolulu is committed to providing a learning, working and living environment that promotes the dignity of all people, inclusivity and mutual respect and is free of all forms of sex discrimination and gender-based violence, including sexual assault, sexual harassment, gender-based harassment, domestic violence, dating violence, and stalking. As a member of the University faculty, I am required to immediately report any incident of sex discrimination or gender-based violence to the campus Title IX Coordinator. For pregnant and parenting students, I am also obligated to provide you with similar resources for support and protections available to you. My goal is to make sure that you are aware of the range of options available to you and have access to the resources and support you need.

## **Nondiscrimination Policy & Notice of Nondiscrimination**

The university is committed to comply with all State and Federal statutes, rules, and regulations which prohibit discrimination. The university is committed to a policy of nondiscrimination on the basis of race, sex, gender identity and expression, age, religion, color, national origin (including shared ancestry and ethnic characteristics), ancestry, citizenship, disability, genetic information, marital status, breastfeeding, arrest and court record (except as permissible under State law), sexual orientation, or status as a covered veteran. Inquiries about Title IX or general Civil Rights concerns may be referred to the University's Title IX Coordinator, the U.S. Department of Education's Office for Civil Rights, or both and contact information may be found [HERE](#). *On-campus Confidential Resources may also be found here at [CAMPUS CONFIDENTIAL RESOURCES](#).*

The University's Nondiscrimination Policy and Grievance Procedures can be located on the University webpage at: <https://chaminade.edu/compliance/title-ix-nondiscrimination-policies-procedures/>.

To report information about conduct that may constitute sex discrimination or make a complaint of sex discrimination under Title IX, please refer to the [Campus Incident Report form](#). Chaminade University of Honolulu prohibits sex discrimination in any education program or activity that it operates.

The NOTICE of NONDISCRIMINATION can be found here: [Notice of Nondiscrimination](#).

### **Hazing Prevention Resources and Athlete Helpline:**

Assists athletes, parents, coaches, and any allies interested in ensuring physical and mental safety for sports communities by offering confidential emotional support, crisis intervention, informational athlete-focused resources, and guidance related to concerns about any type of abuse—including hazing.

Chaminade University's Hazing Policy:

<https://catalog.chaminade.edu/studenthandbook/codeofconduct>

<https://hazingpreventionnetwork.org/athlete-helpline/>

<https://hazingpreventionnetwork.org/how-to-report-hazing/>

**Basic Needs Resources:** <https://chaminade.edu/basic-needs/>

### **Campus Safety/ SafeSwords**

A program for students, faculty and staff, who may feel uncomfortable or unsafe walking alone on campus, at any time of the day. Call security, and a security professional will meet you at your location on campus. The security professional will escort you to your residence hall, car,

etc. Students may utilize this when walking to and from night classes around campus or after late night events. [SafeSwords Webpage](#)

### **CUH Alert Emergency Notification**

To get the latest emergency communication from Chaminade University, students' cell numbers will be connected to Chaminade's emergency notification text system. When you log in to the Chaminade portal, you will be asked to provide some emergency contact information. If you provide a cellphone number, you will receive a text from our emergency notification system asking you to confirm your number. You must respond to that message to complete your registration and get emergency notifications on your phone.

### **Assessment for Student Work**

With the goal of continuing to improve the quality of educational services offered to students, Chaminade University conducts assessments of student achievement of course, program, and institutional learning outcomes. Student work is used anonymously as the basis of these assessments, and the work you do in this course may be used in these assessment efforts.

### **Student with Disabilities Statement**

Chaminade University of Honolulu offers accommodations for all actively enrolled students with disabilities in compliance with Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) of 1990, and the ADA Amendments Act (2008).

Students are responsible for contacting Kokua Ike: Center for Student Learning to schedule an appointment. Verification of their disability will be requested through appropriate documentation and once received it will take up to approximately 2–3 weeks to review them. Appropriate paperwork will be completed by the student before notification will be sent out to their instructors. Accommodation paperwork will not be automatically sent out to instructors each semester, as the student is responsible to notify Kokua Ike via email at [ada@chaminade.edu](mailto:ada@chaminade.edu) each semester if changes or notifications are needed.

### **Kōkua 'Ike: Tutoring & Learning 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 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 on Account > TutorMe. For more information, please contact Kōkua 'Ike at [tutoring@chaminade.edu](mailto:tutoring@chaminade.edu) or 808-739-8305.

### ***Instructor and Student Communication***

Questions for this course can be emailed to the instructor at [carlos.gutierrez@chaminade.edu](mailto:carlos.gutierrez@chaminade.edu). Online, in-person, and phone conferences can also be arranged.

### ***Use of IA Tools***

During this course, students are allowed to use any type of AI tool, such as ChatGPT, Bing AI, and Grammarly, for study purposes only. Using AI tools to write midterm or final exams, extra credit papers, or other evaluations is strictly prohibited.

### ***United Nations Sustainable Development Goals “SDG”***



This course covers the UN *SDG 16: “Peace, Justice and Strong Institutions”*, Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable and inclusive institutions at all levels.

### ***Technical Assistance for Canvas Users***

- Get started and find help on specific topics at the [Canvas Community](#)
- 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/>) 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.

### ***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 computer or tablet. Laptops and tablets should not be misused, such as by checking distracting websites. Use your best judgment and respect your classmates and instructor.

## Readings &amp; Due Dates

**TENTATIVE SCHEDULE**

Week	Day	Subject	Notes
1	16 Jan	-Syllabus Review & Roster Review -Beginning of Course Learning Survey -- Introduction to Taphonomy -Forensic Taphonomy Teams	-Welcome! <a href="https://forms.gle/1WXMsQAKoepxmQyd7">https://forms.gle/1WXMsQAKoepxmQyd7</a>
2	23 Jan	How to conduct a taphonomic experiment? Experimental overview	
3	30 Jan	Photography & taphonomy image database. Imaging exercise	
4	6 Feb	Total body scoring Megyesi et al. (2005), Keough et al. (2017)	
5	13 Feb	-AAFS Conference -Team paper/study search	-No Classes <b>-Withdraw without Record Deadline, Feb 13<sup>th</sup></b>
6	20 Feb	-Database, data forms and organization - Estimating PMI	
7	27 Feb	-ACSR Conference -Team paper/study search	-No Classes
8-9	6-13 Mar	Taphonomy Experiment Data collection site visits (day 0-10)	
10	20 Mar	Spring Break	NO CLASSES <b>-Fall Semester Registration: March 23<sup>th</sup> 90+ credits and Students Athletes.</b> <b>-Withdraw Deadline (W) March 25<sup>th</sup></b>
11	27 Mar	Taphonomy Experiment Data collection site visits (day 18)	
12-15	3-24 Apr	Taphonomy Experiment, result analysis, and writing the draft of the scientific manuscript	<b>Data entry due</b>
16	1 May	-End of Course Learning Survey	Lab Exam week

			<a href="https://forms.gle/LbVcFfKDgzkBCMDe7">https://forms.gle/LbVcFfKDgzkBCMDe7</a>
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**Evaluation rubric – Taphonomic study presentation**

<b>Criteria</b>	<b>Excellent</b>	<b>Good</b>	<b>Satisfactory</b>	<b>Needs improvement</b>	<b>Points</b>
Research problem/gap	Clearly identified research problem/gap and framed it within its greater importance and scientific context. Provided the necessary background knowledge.	Problem and gap are identified, but its importance or place within the greater scientific context is lacking. Some background is provided.	Problem and gap are mentioned but not clearly stated or defined. Missing background information.	Problem or gap are unclear or are missing.	/20
Questions & hypotheses	Research questions and hypotheses were clearly defined and linked back to the research problem/gap.	Questions and hypotheses are stated but are not contextualized within the problem/gap.	Questions and hypotheses are mentioned but not clearly defined.	Questions and hypotheses are unclear or are missing.	/10
Experiment & techniques	Experimental design and techniques were clearly explained. Logic and reason for their use was also stated.	Experimental design and techniques are explained but lacked reasoning.	Experimental design and techniques were mentioned but were unclear or poorly explained.	Experimental design and techniques were unclear, incomplete or missing.	/15
Key results	Identified, interpreted and highlighted key results/figures.	Key results were presented, but interpretation was limited.	Results were presented but there lacked focus on key findings.	Results were unclear or missing.	/15
Discussion, conclusion, limitations & future directions	Stated potential reasons/mechanisms behind the results. Summarized the significance of the findings and how they related to the research problem/gap. Identified limitations, biases and/or future directions.	Potential reasons/mechanisms and limitations/biases/future directions were stated. Significance of findings were not well defined and/or linked back to the research problem/gap.	Findings were briefly discussed. Limitations and future directions were mentioned. Lacked a link to the research problem/gap.	Discussion of the findings and their significance was minimal or lacking. No limitations, biases and/or future directions were identified.	/20
Synthesis, organization and clarity	Presentation was well organized, clear and concise. Only key information was synthesized and presented. Good balance of text and visuals.	Presentation is well organized. Information was generally synthesized, but some information could have been cut. Good balance of text and visuals.	Presentation is well organized, but information is just summarized, not synthesized. Visuals were used but some text could have been cut.	Presentation structure is not logical and is hard to follow. There is no synthesis of information. Lacked visuals and had too much text.	/20