



School of Natural Sciences and Mathematics  
Forensic Sciences Department

## FS 471, Forensic Reconstruction

Eiben Hall 201, T Th 10:00A-11:20A

Credits: 3      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:** Wednesdays 1:00P – 2:30P

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

Office Location: Wesselkamper, Room 116 [Building name and number can be found on each [Academic Schools' website](#).] Phone: (808) 440 4204 [Academic School's phone number can be found on School's website.]

If you have questions regarding the Forensic Sciences Department name, reach out to your Instructor or the School of Natural Sciences and Mathematics.

### Course Description & Materials

## Catalog Course Description

FS 471 Forensic Reconstruction (3)

Survey of scientific techniques applied to reconstruct cases or cold cases based on physical evidence and the information obtained during the investigation, to generate conclusions scientifically.

**Pre-Requisites:** EN-102, COM-101, FS-340, FS-455, **with a grade of "C" or better**, and Senior Standing.

**Co-requisites:** 471L

## 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 class requires a textbook that lectures will complement. The lectures are based on the textbook chapters, with some additional materials included in the recommended textbooks. My advice is to read the book chapters and listen to the lectures.

### Textbooks

1. Gardner R. M. and Bevel T. (2020) *Practical Crime Scene Analysis and Reconstruction*. CRC Press. Boca Raton, FL, USA. ISBN: 9781420065510
2. Walton R.H. (2017) *Cold Cases Homicides, Practical Investigative Techniques*. CRC Press., Boca Raton, FL, USA. ISBN: 9781482237900

### Recommended Textbooks

- Edward Robinson, *Crime Scene Photography*, 3<sup>rd</sup> Edition, Academic Press, 2016, ISBN: 9780128027646
- Spitz and Fisher, *Medicolegal Investigation of Death, Guidelines for the Application of Pathology to Crime Investigation*, Fifth Edition, Charles Thomas Publisher, 2020, ISBN 9780398093129.
- W. Jerry Chisum and Brent E. Turvey, *Crime Reconstruction*, 2<sup>nd</sup> Edition, Academic Press, ISBN 9780123864604.

### 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)**

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 FS 471 course, the student will be able to:

1. Define the role of the crime scene analyst in forensic reconstruction.
2. Identify physical evidence and the information it can provide in an open case or cold case.
3. Describe forensic reconstruction strategies using scientific methodology and technology.
4. Develop a forensic reconstruction report.

**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 'Ōlelo 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

### 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 900 Points)***

#### ***Attendance (300 points):***

Classes are scheduled to meet in person every Tuesday and Thursday, unless otherwise indicated. You will earn 10 points per class attended starting Tuesday, January 13<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.

#### ***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.

#### ***Examinations (500 points):***

- Individual case presentation (50 points): You are required to choose a cold case and, using your knowledge, present possible solutions or new approaches to solving the case. For this individual case analysis, you are required to present it in a 5-to 10-minute presentation.
- Group case presentation (50 points): With your Forensic Reconstruction Team (FS471L), you are required to conduct a case analysis and deliver a 5 to 10-minute oral presentation. This should be based on the application of the PHD ETDC methodology.
- Midterm Exams (200 points): You are required to complete two midterm exams and one final exam. These exams are modelled after forensic science certification and

accreditation exams (multiple-choice, true/false, and short-answer essays). Each midterm exam is worth 100 points.

- Final Exam (200 points): The final exam is an oral exam worth 200 points.

***Unexcused missed presentations or exams will receive a grade of 0 points.***

## 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 other situations where 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 advised of such changes, and information about such changes 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](#):

Activity	Points
Individual Case presentation	50
Team Case presentation	50
Midterm Exams	200 (100 points per exam)

Oral Final Exam	200
Participation	100
Attendance	300 (10 point per class)
<b>Total</b>	<b>900</b>

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<b>Points</b>	<b>%</b>	<b>Letter Grade</b>
900 – 810	100 – 90	A
809 – 647	89 – 80	B
646 – 452	79 – 70	C
451 – 271	69 – 60	D
270 – 0	59 – 0	F

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## 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 tools, such as ChatGPT, Bing AI, Grammarly, among others, only for study purposes. 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 & Due Dates**

### ***TENTATIVE SCHEDULE***

<b>Week</b>	<b>Day</b>	<b>Chapter/ Book</b>	<b>Subject</b>	<b>Notes</b>
1	13		-Syllabus Review -Orientation & Roster Review -Beginning of Course Learning Survey -Introduction	-Welcome! <a href="https://forms.gle/1WXMsQAKoepxmQyd7">https://forms.gle/1WXMsQAKoepxmQyd7</a>
1	15 Jan	1/1	Introduction, History of the Crime Scene Processing	-Chose a Cold Case/missing case for presentation.
2	20 Jan	1/2 18,19/2	-The cold case problem -Technology in Forensic Reconstruction (CODIS, AFIS, NIBIN/IBIS, GPR, ALS, STK, SUPERSPECTRAL)	-Add/Drop period, Jan 12 <sup>th</sup> -20 <sup>th</sup> .
2	22 Jan		Individual Case Presentation	
3	27 Jan	2/1	Theoretical and practical consideration for implementing crime scene analysis	
3	29 Jan	3/1	Methodology for Crime Scene Reconstruction "PHD ETDC"	
4	3 Feb	9/1	-Writing Crime Scene Reconstruction Reports	
4	5 Feb	4/2	-Investigation	

		5/2	-Long-Term Missing-Persons and No-Body Cold Case Investigation	
5	10-12 Feb		AAFS Conference	-No Classes -Watch workshop about cognitive bias. -Withdraw without Record Deadline, Feb 13 <sup>th</sup>
6	17 Feb		1 <sup>st</sup> Midterm exam	
6	19 Feb		AAFS Experience, ACRS Presentation and exam results	
7	24-26 Feb		ACSR Conference	<b>Work in the case and prepare the Team Case Presentation</b>
8	3 Mar		Team Case Presentation	
8	5 Mar	4/1	ACSR Experience, Resolving Significant Investigative Questions in CRS 1 & II	
9	10 Mar	5/1	Understanding Crime Scene Protocols and Their Effect on Reconstruction	
9	12 Mar	7/1	Shooting Scene Processing and Reconstruction I	
10	17-19 Mar		Spring Break	NO CLASSES
11	24 Mar	8/1	The Forensic Pathologist, the Body, and Crime Scene Reconstruction I	-Withdraw Deadline (W) March 25 <sup>th</sup>
11	26 Mar		Prince Kuhio Day	-Holiday, No Classes -Fall Semester Registration: <ul style="list-style-type: none"> <li>March 30<sup>th</sup> 90+ credits and Students Athletes.</li> </ul>
12	31 Mar	8/1	The Forensic Pathologist, the Body, and Crime Scene Reconstruction II	
12	2 April	20,21/2	El Equipo documentary: Forensic Anthropology and Forensic Dentistry in Cold Cases and Human Rights Violations, part I	
13	7 April	20,21/2	El Equipo documentary: Forensic Anthropology and Forensic Dentistry	

			in Cold Cases and Human Rights Violations, Part II	
13	9 April	22/2	Identification process in mass disasters, 6 <sup>th</sup> Biggest Earthquake and Tsunami experience.	
14	14 April		2 <sup>nd</sup> Midterm exam	
14	16 April		Exam results and Forensic Exhumation	
15	21 April	12/2	Bloodstain Pattern Analysis to Crime Scene Reconstruction	
15	23 April	12/2	The Media in Cold Case Investigation	
16	28 April	10-11/1	Arguments and Ethics as an expert witness in courtroom	<a href="https://www.court tv.com/title/murdaugh-family-murders-automotive-forensic-expert-testifies/">https://www.court tv.com/title/murdaugh-family-murders-automotive-forensic-expert-testifies/</a>
16	30 April		-End of Course Learning Survey -The investigator and Victim's relative relationship	<a href="https://forms.gle/LbVcFfKDgzkBCMDe7">https://forms.gle/LbVcFfKDgzkBCMDe7</a>
17	7 May		FINAL EXAM Thursday May 7 <sup>th</sup> 11:00 am – 1:00pm	