



Chaminade University OF HONOLULU

Course Syllabus

FS 430 Forensic Chemistry

Fall 2020

Dr. Katelynn A. Perrault

Office: Eiben 207C

Office Hours: Wednesday 9:00 – 10:00 AM, Thursday 11:30 AM – 12:30 PM

Email: katelynn.perrault@chaminade.edu

Telephone: (808) 440-4209

Office hours will be sent out as email invitations in **Zoom** and can be attended on a drop in basis. Additional office hours can be scheduled **by appointment**.

E-mail is the best way to contact me. I will respond to all student emails by the next school day in most cases. Typically this will be within 24 hours, but response time may be longer for e-mails sent during the evening or weekend.



Department Name: Natural Sciences and Mathematics

College/School/Division Name: Chaminade University of Honolulu

Course Credits: 3

Class Meeting: Tuesday & Thursday 9:40 AM – 11:10 AM, Hale Hoaloha 102

University Course Catalog Description

This course introduces the application of analytical chemistry to forensic science. A focus will be placed on obtaining analytical results through sample preparation, instrumental analysis, data quality, and data interpretation in various forensic chemistry applications.

Program Learning Outcomes

Upon completion of the program, students will have demonstrated the use of:

1. The scientific method as it is used in a forensic context;
2. Quality assurance programs, to include the legal system, ethics, and professional practice in the forensic sciences;
3. Knowledge from disciplines that comprise the forensic sciences; and
4. Techniques used for the recognition, documentation, and analysis of physical evidence.

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
1. Demonstrate the knowledge and skills required of a forensic chemist	X	X	X	X
2. Discuss the theory and limitations of forensic chemistry analyses			X	X

3. Communicate verbally about a wide range of forensic chemistry evidence		X	X	
4. Explain the importance of quality assurance, quality control, ethics, accreditation and certification		X		
5. Critically evaluate the content and design of research in the field of forensic chemistry	X	X	X	X

Course Prerequisites

Concurrent registration in FS 430L required. Prerequisites: CH 324/L, CH 334/L

Optional Learning Materials (Copies available in library or on loan from instructor)

Bell S (2013) Forensic Chemistry. 2nd Edition. Pearson: Boston, MA.

Course Website:

Course materials will be made available through Canvas. Students are required to use the canvas course for this class.

Technical Assistance for Canvas Users:

Search for help on specific topics at help.instructure.com, [Chat live with Canvas Support 24/7/365](#). Watch this [video to get you started](#) with online guides and tutorials. Contact the Chaminade IT Helpdesk for technical issues: helpdesk@chaminade.edu, or call (808) 735-4855

Assessment

Assignments

Each week, you will complete the lecture pages for the course and there will be one or multiple assignments to complete. These will take the form of discussion topics, video submissions, quizzes, etc. Complete the assignment for the week. There will be no exams in this course.

Presentation

Students will be paired and will be required to give one oral presentation on a peer-reviewed study that demonstrates novel forensic chemistry research. Articles will be pre-approved by the instructor.

Critical Review

Students will be paired and will provide a written review on the article chosen for their oral presentation including a summary, point-by-point analysis, and perspective.

<u>Activity</u>	<u>Weight</u>
Presentation	25%
Critical Review	25%
Quizzes/Assignments	50%

Grading Scale

The grading scale is:

100% - 90%	A
89% - 80%	B
79% - 70%	C
69% - 60%	D
≤ 59%	F

Course Schedule

Week	Date	Video Topic	Meeting Group
1	Aug 25	Introduction	
	Aug 27	Metrology	
2	Sept 1	Chemical Microscopy	
	Sept 3	Spectroscopy	
3	Sept 8	Mass Spectrometry	
	Sept 10	Sample Preparation	
4	Sept 15	Gas Chromatography	
	Sept 17	Liquid Chromatography	
5	Sept 22	Capillary Electrophoresis	
	Sept 24	Review	
6	Sept 29	Combustion & Arson	
	Oct 1	Explosives	
7	Oct 6	Firearms Chemical Evidence	
	Oct 8	Drugs as Physical Evidence	
8	Oct 13	Drug Analysis	
	Oct 15	Toxicology	
9	Oct 20	Review	
	Oct 22	Microtraces	
10	Oct 27	Soil Forensics	
	Oct 29	Colorants	
11	Nov 3	DNA Analysis	
	Nov 5	Decomposition Chemistry	
12	Nov 10	Critical Review	
	Nov 12	Critical Review	
13	Nov 17	Presentations	
	Nov 19	Presentations	
14	Nov 24	Course Evaluations	

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 *Maiiau*, be neat, prepared, careful in all we do; *Makawalu*, demonstrate foresight and planning; *`Ai*, sustain mind and body; *Pa`a Na`au*, learn deeply.

Late Work and Absence Policy

In the event of face-to-face courses, unexcused absences will result in:

- 0 points for attendance/participation
- 0 points for any quizzes administered

Online activities will be held asynchronously, and therefore, will not require the student to check in for attendance. In these scenarios, it is the students' responsibility to meet course deadlines as outlined in canvas assignments.

This being said, the absence policy for this semester is highly flexible, as we recognize that the circumstances of the current pandemic may prevent you from attending an in-class session. In this case, it is very important to communicate with your instructor so that online alternatives can be made available to you in a timely manner to maintain your course progress.

Unexcused absences for two consecutive weeks, without communication with the course instructor, may result in being withdrawn from the course by the instructor.

A planned, excused absence must be communicated to the instructor at least one week prior to the class. Necessary arrangements will be made to meet student learning objectives.

An unplanned, excused absence must be communicated to the instructor within one week of the missed class. Necessary arrangements will be made to meet student learning objectives.

Determination of valid excuses for missed classes is at the sole discretion of the instructor.

Student athletes should communicate absences to the instructor with the earliest possible notice. Students are not allowed to miss class for practices.

Academic Integrity

You are required to sign and follow the Forensic Sciences Code of Conduct. Violation of the Code of Conduct will result in a hearing in front of the Forensic Sciences Ethics Committee. In addition, students are expected to read and abide by the Student Rules of Conduct, which are available in your copy of the Student Handbook. A link to the Student Rules of Conduct will be made available on the home page of the canvas course. Cheating in the form of plagiarism, collusion, deception and will not be tolerated.

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 may not be extended.

Writing Policy

All written products should follow instructions as noted in the assignments tab on Canvas.

Instructor and Student Communication

Questions for this course can be emailed to the instructor, sent in Canvas, or addressed during office hours as noted on the first page of this syllabus. Online, in-person and phone conferences can be arranged. It is the responsibility of the student to check their email frequently. Report email-related problems to the Helpdesk at 808-735-4855 or helpdesk@chaminade.edu.

The instructors may post images or products from this class to social media. A photo release form will be provided if you have not already signed one in another course. Please inform the instructor in the first week of the class if you do not want to appear in these communications.

Cell phones, tablets, and laptops

Music Devices and Cellular Phones: Unless specifically permitted by your instructor, use of music devices and cell phones is prohibited during all Natural Science and Mathematics classes, as it is discourteous and may lead to suspicion of academic misconduct. Students unable to comply will be asked to leave class. 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

Chaminade University of Honolulu is committed to providing reasonable accommodations for persons with documented disabilities. Any student who believes that they may need accommodations must first register with the Counseling Center. Registration with the Counseling Center begins the process of determining whether the student meets the requirements for a documented disability in accordance with the Americans with Disabilities Act (ADA), even if accommodations may not be needed for this particular class. The contact information for the Counseling Center is (808) 735-4845, 739-4603, or by email at counselingcenter@chaminade.edu. It is important for students to contact the Counseling Center as soon as possible so that accommodations are implemented in a timely fashion and to allow your instructor(s) to plan accordingly. Students will be required to provide written documentation to the Counseling Center in order for a determination to be made as to whether the requirements for a documented disability under the ADA are met.

Failure to provide written documentation through the Counseling Center will prevent your instructor from making the necessary accommodations. Instructors cannot provide accommodations unless they have been prescribed by the Counseling Center. Once you have received an official notice of accommodations from the Counseling Center, it is also very important to discuss these accommodations directly with your instructor so that they can better support your needs. If you have specific questions regarding your individualized accommodations you may speak directly with your instructor and/or you may contact the Counseling Center.

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 2018-2019 Academic Catalog (p. 57-58): 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 arrange 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 2019-2020 Undergraduate Academic Catalog (p. 39):

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.

See the current [Undergraduate Academic Catalog](#) and the [Student Handbook](#) available from Student Affairs.

The instructor may modify elements of this syllabus according to the operational needs of the class.