

THE DEPARTMENT OF CHEMISTRY AND ENVIRONMENTAL SCIENCE

**FRSC 498-004: Science of
Fingerprints**
M 10:00-11:20am
R10:00-11:20am
Cullimore Hall Room 111
Spring 2023 Course
Syllabus

[NJIT Academic Integrity Code](#): All Students should be aware that the Department of Chemistry & Environmental Science (CES) takes the University Code on Academic Integrity at NJIT very seriously and enforces it strictly. This means that there must not be any forms of plagiarism, i.e., copying of homework, class projects, or lab assignments, or any form of cheating in quizzes and exams. Under the University Code on Academic Integrity, students are obligated to report any such activities to the Instructor.

COURSE INFORMATION

Course Description: This course is designed to prepare undergraduate students in the forensic science program for the technical foundation necessary to properly Examine fingerprints as a method for identification. Students will gain insight into the science of fingerprints learn about techniques for acquiring known exemplars, recovering and documenting unknown impressions, classifying and comparing impressions, and utilize the ACE-V methodology to render conclusions. This course will also provide an opportunity for students to train on equipment utilized by practicing professionals and culminate with presenting their case work at a moot courtroom testimony.

Number of Credits: 3

Prerequisites: FRSC 201

Course-Section and Instructor

Course-Section	Instructor
FRSC 498-004	Dr. Kevin Parmelee
M 10:00-11:20am (Cull 111)	Email: parmelee@njit.edu
R10:00-11:20pm (Cull 111)	Office Hours: By Appt. C: 908-420-1102

Required Textbooks & Supplies:

Title	Fingerprint Source Book
Author	National Institute of Justice
Publisher	U.S. Department of Justice
PDF link	https://www.ojp.gov/pdffiles1/nij/225320.pdf

Model	Professional Fingerprint Magnifier 4.5X
Supplier	Sirchie
SKU# / cost	JC100P \$135.52
Link	https://www.sirchie.com/professional-fingerprint-magnifier-4-5x.html

and other readings as assigned. If you choose to purchase a different make/model magnifier than the one recommended above, please consult with your instructor prior to purchasing to make sure it will be sufficient for the work that will be performed.

University-wide Withdrawal Date: The last day to withdraw with a W is Monday, April 3, 2023. It will be strictly enforced.

Learning Outcomes: Upon completion of this course, students will:

- Be able to critically evaluate the historical scientific and legal considerations for friction ridge skin examinations
- Gain knowledge for the biological structures and morphology of friction ridge skin
- Be able to successfully record exemplar prints and classify impressions using AFIS or NCIC coding
- Perform physical development of latent friction ridge impressions
- Utilize the ACE-V methodology for examination of impressions
- Perform examination of palm prints
- Review effects of disease, scars, distortion, sequential prints, simultaneous prints, and mutilations upon the examination process and conclusions
- Review and analyze quality assurance issues and concerns
- Perform examinations for Fingerprints and palmprints
- Apply the legal and scientific considerations of fingerprint examination to moot courtroom cases.

POLICIES

All CES students must familiarize themselves with, and adhere to, all official university-wide student policies. CES takes these policies very seriously and enforces them strictly.

Grading Policy: The final grade in this course will be determined as follows:

Class Participation	10%
Class Exercises	20%
Final Exercises	20%
Midterm Exam	20%
Final Exam	30%
Extra Credit will be given for attending NJIAI, NEAFS, or EAS	1% per full day

Your final letter grade in this course will be based on the following grading scale:

A	90-100	C	70-76
B+	87-89	D	60-69
B	80-86	F	<60
C+	77-79		

Attendance Policy: Attendance at classes will be recorded and is **mandatory**. Each class is a learning experience that cannot be replicated through simply “getting the notes.” After two unexcused absences, each subsequent absence will result in your class participation score being lowered by one percentage point. You are expected to read the relevant chapter and/or reading assignment prior to the lecture. Students who participate in lecture will receive points towards their class participation grade.

Exams: There will be one midterm exam held in class during the semester and one comprehensive final exam. The following exam periods are tentative and therefore possibly subject to change:

Midterm Exam	March 9 2023
Final Exam Period	May 3-11, 2023

The final exam will test your knowledge of all the course material taught in the entire course.

Makeup Exam Policy: There will normally be **NO MAKE-UP QUIZZES OR EXAMS** during the semester. In the event that a student has a legitimate reason for missing a quiz or exam, the student should contact the Dean of Students office and present written verifiable proof of the reason for missing the exam, e.g., a doctor's note, police report, court notice, etc. clearly stating the date AND time of the mitigating problem. The student must also notify the CES Department Office/Instructor that the exam will be missed so that appropriate steps can be taken to make up the grade.

Class Recordings: Class sessions may be recorded by the instructor. These recordings shall only be used as an educational resource and are not to be distributed or used outside of this class. Information on how to access recorded lectures will be made available by your instructor. Any recordings that contain identifiable information about students will not be used beyond this semester.

Class Recording Etiquette: Students are expected to respect their fellow students' privacy and freedom to learn without disruption. Students are not allowed to capture or reproduce anyone's name, image, or voice without permission. They must be polite and respectful in the online chat. Informal chat is okay, but typing is restricted to things that one would say out loud in front of the entire class. Students must always conduct themselves on their webcam video as they would in person in a classroom.

Cellular Phones: All cellular phones and other electronic devices must be switched off during all class times. Such devices must be turned in during exams.

ADDITIONAL RESOURCES

Accommodation of Disabilities: Office of Accessibility Resources and Services (*formerly known as Disability Support Services*) offers long term and temporary accommodations for undergraduate, graduate and visiting students at NJIT.

If you are in need of accommodations due to a disability please contact Chantonette Lyles, Associate Director at the Office of Accessibility Resources and Services at 973-596-5417 or via email at lyles@njit.edu. The office is located in Fenster Hall Room 260. A Letter of Accommodation Eligibility from the Office of Accessibility Resources Services office authorizing your accommodations will be required.

For further information regarding self-identification, the submission of medical documentation and additional support services provided please visit the Accessibility Resources and Services (OARS) website at:

- <http://www5.njit.edu/studentssuccess/disability-support-services/>

Important Dates:

Date	Day	Event
Jan 17	Tu	First Day of classes
Jan 23	Tu	Last Day to Add/Drop Classes
March 13-18	M-Sat	Spring Break
April 3	M	Last Day to Withdraw
May 2	Tu	Friday Classes Meet
May 2	Tu	Last Day of Classes

May 3-4	Wed-Th	Reading Days
May 5-11	F-Th	Final Exam Period

Course Outline

Week	Date	Topic	Assignment
1	Jan 16	Introduction to the Science of Friction Ridge Skin	
	Jan 19	History	Chap 1
2	Jan 23	Anatomy and Physiology	Chap 2
	Jan 26	Embryology and Morphology of Friction Ridge Skin	Chap 3
3	Jan 30	Recording Living and Postmortem Exemplars	Chap 4
	Feb 2	Systems of Friction Ridge Classification	Chap 5
4	Feb 6	AFIS	Chap 6
	Feb 9	Latent Print Development	Chap 7
5	Feb 13	Latent Print Development	Chap 7
	Feb 16	Preservation of Friction Ridges / Digital Imaging	Chap 8
6	Feb 20	Digital Macro Photography	
	Feb 23	Documentation of impressions from scene to court	Chap 10
7	Feb 27	Examination Process ACE-V	Chap 9
	March 2	Comparison and Evaluation Skill Development	
8	March 6	Equipment, CSIPIX Annotations	Chap 11
	March 9	Mid-Term Exam	
9	March 13	SPRING BREAK	
	March 16	SPRING BREAK	
10	March 20	Conclusion Determinations & Report Writing	
	March 23	Palm Print Comparisons & Techniques	
11	March 27	Distortion, simultaneous, sequential Impressions	
	March 30	Disease, scarring, & Mutilations	
12	April 3	Complex Friction Ridge Examinations	
	April 6	Quality Assurance / Bias, Uncertainty, and Ethics	Chap 12
13	April 10	Fingerprints and the Law	Chap 13
	April 13	Scientific Foundations	Chap 14
14	April 17	Special Skills, Abilities and Vulnerabilities	Chap 15
	April 20	Final Exercises	

15	April 24	Courtroom Testimony	
	April 27	Moot Courtroom Testimony	
16	May 1	Last Day of Class; Review for Final	
	May 4	Reading Day	Study for final
	TBD	Final Exam	

Updated by Dr. Parmelee - January 15, 2023
Department of Chemistry & Environmental Sciences
Course Syllabus, Spring 2023
