San José State University
College of Social Sciences/Justice Studies Department
FS 162 Forensic Science Applications, CRN 50549 & 50550
FALL 2020

Instructor:	Mary Juno
Office Location:	Health Building 127
Email:	mary.juno@sjsu.edu
Office Hours:	Wednesdays, 10-12 on Zoom
Class Days/Time:	Asynchronous (no required class meetings)
Prerequisites:	Upper-Division Standing, FS 11 (FS majors/minors), JS 10 (JS majors/minors)
Library Liaison:	Nyle Monday nyle.monday@sjsu.edu
FS/JS Lib Guide:	http://libguides.sjsu.edu/c.php?g=230074&p=1526987

Course Description

Scientific analysis and interpretation of physical evidence using identification and comparison techniques. Practical lab exercises in human identification, questioned documents, bite marks, trace evidence, presumptive testing and glass analysis. Additional topics include court testimony, quality assurance, and ethics.

FS 162 is a required course in the FS major and FS minor. It satisfies Area B (Methodology) in the JS major. The course is recommended for anyone who plans to pursue a career in investigations.

Course Format

In the interest of safety (due to COVID-19), this class has been moved online for Fall 2020. It was scheduled as an asynchronous class, meaning that it has no required meetings, However, I will either hold optional-attendance weekly meetings to go over material in depth, and/or post video lectures which you will need to view.

Course Content Learning Outcomes

Upon successful completion of this course, students will be able to:
CLO1 Classify evidence and use appropriate analytical techniques in human identification, serology, trace evidence, questioned documents, pattern identification, glass reconstruction, and bite mark identification.

CLO2 Explain the history and importance of DNA fingerprinting, articulate the principles of DNA profiling and inheritance, and apply this knowledge to a realistic field exercise.
CLO3 Analyze and critically evaluate forensic error, and ethical issues in forensic science.
CLO4 Explain and describe the Scientific Method; the Locard Exchange Principle; safe lab practices and proper evidence handling techniques; class and individual characteristics of evidence; identification, individualization and comparison techniques; and probative value and probability, and other important terms.

Required Texts and Materials

- Bell, S. (2019). *Forensic Science: An Introduction to Scientific and Investigative Techniques, 5/E*. CRC Press/Taylor & Francis.
- Composition notebook, pens
- Journal articles, tutorials, and links to other required readings will be posted on Canvas.
- Magnifier with minimum 25X power: Magnifier/Microscope (recommended as it has up to 200x magnification and USB, *or* Magnifying Eyeglasses, metric ruler, protractor
- Access to printer/scanner

Assignment Groups and Weights

1. Exams & Quizzes (40%): There will be two midterm exams and periodic quizzes on terminology, readings, lecture, and labs. Format will include multiple choice, fill-in, short essay, and diagrams. (CLO1-4)
2. Practical Exercises (40%) may include observation, Locard Principle, trace evidence, physical fit, biometrics, questioned documents, pattern evidence, ethics, and others. (CLO1)
3. DNA/Mass Disaster (5%): Students will determine familial relationships between and among disarticulated body parts by correctly interpreting DNA profiles, and write their findings in a ~3 page scientific report. (CLO2)
4. Group Presentation (5%) Instructor will determine topics. (CLO 4)
5. Discussion Board (5%): Students will respond substantively to discussion prompts and to classmates on various forensic science-related topics. (CLO 1-4)
6. Chapter Review Questions (5%) Students will complete the chapter review questions at the back of each assigned chapter. (CLO1-4)

Final Grade Scale

A plus	97-100
A	94-96.9
A minus	90-93.9
B plus	87-89.9
B	84-86.9
B minus	80-83.9
C plus	77-79.9
C	74-76.9
C minus	70-73.9
D plus	67-69.9

D	64-66.9
D minus	60-63.9
F	<60

Online Class Policies and Protocol

- In Zoom class sessions, I will initially "mute all." This is to limit the dog-barking, child-yelling, horn-honking, microphone-bumping noises in the backgrounds of all our lives! Please raise your hand to ask a question (hand raising is a Zoom feature). I will call on you and you can unmute yourself. Alternatively, you can type questions in the chat box.
- Please be respectful of each other in Zoom class (live) and in writing on the discussion board. Absolutely no racist, sexist, homophobic, or other offensive or discriminating language or imagery will be tolerated.
- Plagiarized work will result in a 0 grade on the assignment and will be reported to the Office of Student Conduct. See below for more information on academic integrity.
- Late work may be submitted for reduced credit, -10% for each week that it is late.
- Make-ups for exams and quizzes will generally not be permitted. Please set reminders so that you do not miss them.

University Policies

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' Syllabus Information web page at http://www.sjsu.edu/gup/syllabusinfo/

Important dates this semester: https://www.sjsu.edu/registrar/calendar/Fall-2020.php

Tips for Online Learning

- If you are new to Canvas, please visit the Canvas Guide for Students: https://www.sjsu.edu/ecampus/teaching-tools/canvas/student_resources/index.html
- Download the Canvas mobile app to your smartphone so that you will have access to the course if you are away from a computer
- Login to class every other day so that you do not miss important announcements and assignment deadlines, and set reminders on your phone
- Bookmark frequently visited course sites and resources so that you can revisit them to study for tests

Academic Integrity

Students are expected to pursue their studies with honesty and integrity. When students have a person other than themselves take a test or complete an assignment; cut and paste writing from a source into their paper without giving proper credit; accept, buy, or copy the work of another; share or sell their own work; lie, cheat, or otherwise misrepresent their work product, they have committed the serious offense of *academic dishonesty.* If you cheat, copy, or misrepresent your work in this class in any way, including citation "errors," you will receive a 0 on the assignment

and the incident will be reported to the Office of Student Conduct. You are expected, in all classes, to do your own thinking and writing, and turn in your best original work.

Forensic Science Student Group (FSS)

Forensic Science Students is a campus group open to all students interested in forensic science. The group meets biweekly during the semester and offers friendship, forensic science-related activities, networking opportunities, and mentorship. Members of the FSS participate and assist at conferences, CSI camps, guest speaking events, and other extra-curricular activities. FSS Peer Mentors assist forensic science students in navigating the major, understanding requirements and prerequisites, and making wise choices in their college careers. Mentors may also offer limited tutoring, and facilitate educational and professional opportunities. Contact sjsu.fss@gmail.com for more information, or to get an application for membership.

About the Instructor

Juno earned an MSc in Forensic Science from the University of Strathclyde in Glasgow, Scotland, and a BA in Biological Anthropology from San Francisco State University. Juno worked for many years as a CSI at the Oakland Police Department where she processed hundreds of major crime scenes. She coordinates Forensic Science Minor and teaches FS and JS courses at SJSU. She also teaches at CCSF and SFSU.

How to Contact Me

- Email: Canvas Inbox (I will respond within 48 hours, M-F)
- Post a question on the Q&A Board (for questions about the course material)
- Zoom Office Hours: Wednesdays 10-12 (link on Canvas)

FS 162 Forensic Science Applications Fall 2020 Course Schedule

Schedule is subject to change.

Weeks	Dates	Topics and Activities	Required Reading
1-2	8/19-8/30	Please attend orientation meeting, Friday 8/21 at 11:00 on Zoom: Course overview, groups, lab notebook rubric **Module I:** Introduction to Forensic Science **Topics:** Science/scientific method, lab structure, history of forensic science, roles of investigative personnel, pure research v. applied science, characteristics of evidence (class, individual, identification), types of evidence (bio, chem, pattern), types of analysis, databases, chain of custody, probative value of forensic evidence, probability **Labs:** Observation **Quizzes/Tests:** Terminology Quiz	Chapter 2 See Canvas for assignments, due dates, and additional readings
3-4	8/31-9/13	**Module II:** Trace Evidence **Topics:** Microscopy & Trace, Phys Fit **Labs:** Locard/trace evidence, soil/hair, physical fit **Quizzes/Tests:** Terminology Quiz, Midterm 1	Chapter 17 See Canvas for assignments, due dates, and additional readings
5-8	9/14-10/11	**Module III:** Biometrics and Human Identification **Topics:** Early methods of identification, bones, teeth, ears, lips, serology, DNA, familial DNA, genetic genealogy **Labs:** Bitemarks, bones, ears/lips, DNA, mass disaster **Quizzes/Tests:** Terminology Quiz, DNA Quiz, Midterm 2	Chapter 7, 9, 10, 14 See Canvas for assignments, due dates, and additional readings
9-12	10/12-11/8	**Module IV:** Science in the Courtroom & Problems in Forensic Science **Topics:** Frye, Daubert, FRE, expert testimony, problems NAS Report, CSI Effect, evidence backlog, types & sources of error, absence of a research culture in FS, pattern evidence, FEPAC, FSAT, quality control & quality assurance, accreditation, certification, standardization, professional ethics **Labs:** Innocence Project, ethics **Quizzes/Tests:** Terminology Quiz	Chapter 1, NAS Report, See Canvas for assignments, due dates, and additional readings
13-14	11/9-11/22	**Module V:** Other Forensic Disciplines **Topics:** Questioned docs, behavioral science, digital forensics **Labs:** QD **Quizzes/Tests:** Digital Forensics Quiz	Chapter 18, 20, 21 See Canvas for assignments, due dates, and additional readings
15-16	11/23-12/7	Module VII: Getting a Job Topics: Resumes, cover letters, interviews Labs: Job Lab	
	FINAL	Thurs, 12/10, 1715-1930	