

San José State University
CHHS/Department of Justice Studies
FS 162 Forensic Science Applications
CRN 29594 & 29595, Spring 2020

Instructor	Mary Juno
Instructor Email	mary.juno@sjsu.edu
<u>Canvas Website</u>	https://sjsu.instructure.com/
Office Location	127 Health Building
Office Hours	1330-1500 Thursdays (drop-in)
Class Days, Times, & Location	T/TH 1500-1730, HB 207
Prerequisites	You must have declared a FS major or minor, or a JS major, and be a junior or senior. Also required: FS 11 (if you are a FS major or minor), JS 10 if you are a JS major.
JS & FS Library Liaison	Nyle Monday nyle.monday@sjsu.edu
<u>FS LibGuide</u>	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.

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.

Assignments

1. Exams & Quizzes (40%) There will be two midterm exams and periodic (unannounced) quizzes on vocabulary, readings, lecture, and labs. Format will include multiple choice, fill-in, short essay, and diagrams. The final exam is in team *Jeopardy!* format. (CLO1, CLO2, CLO3, CLO4)

2. Laboratory Exercises (40%) Practice lab exercises may include Observation, Locard Principle, Hair & Soil, Physical Fit, Questioned Documents, Stab Lab, Human ID, Presumptive Tests for Blood & Semen, Pattern Evidence, and Anthropometry. (CLO1)
3. DNA/Mass Disaster Paper (10%) Each student will determine familial relationships between and among disarticulated body parts by correctly interpreting DNA profiles, and write their findings in a 3-4 page scientific report. (CLO2)
4. Chapter Review Questions (10%) Students will complete the chapter review questions at the back of each assigned chapter. (CLO3)

Required Texts and Materials

- Bell, S. (2019). *Forensic Science: An Introduction to Scientific and Investigative Techniques, 5/E*. CRC Press/Taylor & Francis.
- Composition notebook.
- Journal articles, tutorials, and links to other required readings will be posted on Canvas. It is the student's responsibility to check for new postings.

Grading Scale for All Assignments

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

All assignments are graded based on adherence to directions, accuracy, thoroughness, thoughtfulness, clarity, and logic.

Extra Credit

Extra credit opportunities may be available throughout the semester and will be used to augment your final grade up to 3%.

1. Join a professional organization (as a student member) that is of specific interest to *you* and your future career, and supply proof of membership before the end of the semester. A professional organization is one that holds meetings or conferences and produces a scholarly journal. A professional membership is not the same as an internship, job, or a membership in a student organization. A quick google search will turn up dozens of professional orgs (CAC, AAFS, IAI, etc.)
2. Tour a crime lab and write a 2-page, typed, double-spaced synopsis of the experience. Santa Clara has monthly tours, but feel free to arrange a tour of another lab.
3. Attend a Forensic Science Seminar and write up a 2-page, typed, double-spaced synopsis of the experience.

Class Protocol and Policies

- No cell phones in class: Turn them off and put them away.
- Laptop use in class is permitted only for note-taking.
- Plagiarized work, sharing work, and/or cheating on any assessment will result in a 0 grade on the assignment, and the incident will be reported to the Office of Student Conduct.
- Lab exercises involve quite a bit of prep and cannot be made up of missed.
- Some late work may be submitted for half credit within one week of due date.
- Make-ups for quizzes and exams will generally not be possible unless extraordinary, documented circumstances exist.
- Handle personal business before you begin an exam. A student who leaves the classroom *for any reason* during an exam will be presumed finished with the exam.

Student Info and Resources

**See your major advisor for major advice. See a GE advisor for GE advice.
Follow your major's graduation roadmap.**

Consult the [Canvas Student Guide](#) for answers to common questions about Canvas.

Computer labs for student use are available in the Academic Success Center located on the 1st floor of Clark Hall and on the 2nd floor of the Student Union. Additional computer labs may be available in your department/college. Computers are also available in the Martin Luther King Library. A wide variety of audio-visual equipment is available for student checkout from Media Services located in IRC 112. These items include digital and VHS camcorders, VHS and Beta video players, 16 mm, slide, overhead, DVD, CD, and audiotape players, sound systems, wireless microphones, projection screens and monitors.

University Help Desk is the first point of contact for service and support to help you with password resets, login issues, email support and account requests. University Help Desk is located in Clark Hall, Room 102. Phone: 408.924.2377 Email: help@help.sjsu.edu Hours: Mon – Thur 8am - 9:45pm, Fri 8:00am – 4:45pm.

A.S. Computer Services Center has a computer lab with 100 computers that provided most major operating systems available from recently released versions of Microsoft Windows, to Linux, and Macintosh. Located in the Student Union on the 3rd floor. Phone: 408.924.6976 Hours: Mon - Thurs 8:00am – 10:00pm; Fri 9:00am - 5:00pm

CHHS Student Success Center

The Student Success Center in the College of Health and Human Sciences (CHHS) provides advising for undergraduate students majoring or wanting to major in programs offered in CHHS Departments and Schools. All CHHS students and students who would like to be in CGGS are invited to stop by the Center for general education advising, help with changing majors, academic policy related questions, meeting with peer advisors, and/or attending various regularly scheduled presentations and workshops. If you are looking for academic advice or even tips about how to navigate your way around SJSU, check out the CHHS Student Success Center

(MacQuarrie Hall 533 and lobby of Health Building). Contact information: [408.924.2910](tel:408.924.2910) The CHHS Student Success Center also provides study space and laptops for checkout.

Peer Connections offers free mentoring, tutoring, and supplemental instruction services for students at SJSU. Peer Educators are students just like you; they understand the triumphs and challenges of being a student at San José State University. Peer Connections is located in Room 600 in the Student Services Center.

SJSU Writing Center is located in Room 126 in Clark Hall and offers a variety of resources to help students become better writers, including one-on-one tutoring sessions and numerous writing workshops. All services are free for SJSU students.

Forensic Science Student Group (FSS) is a campus group open to all students interested in forensic science. The group meets biweekly during the fall and spring semesters 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.

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.

Important Dates This Semester

Feb 4: Last Day to Drop Without a W

Feb 11: Last Day to Add a Course, Last Day to Request CR/NC

Apr 23: Last Day to Submit Late Drop/Withdrawal Request <http://www.sjsu.edu/aars/forms/>

May 11: Last day of Instruction

Instructor

Mary Juno earned her MSc in Forensic Science from the University of Strathclyde in Glasgow, Scotland, and her 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 is currently the FS Minor Coordinator, teaches JS and FS courses, and advises FS majors and minors. Her office is 127 Health Building. Feel free to drop by and say hello!

FS 162 Forensic Science Applications Spring 2020 Course Schedule

Schedule is subject to change.

Week	Date	Topics and Activities	Required Reading
1	1/23	Course overview, form groups, lab notebook rubric FS define, brief history, laboratory structure, investigative personnel roles & responsibilities, professional orgs. Lab: Observation	Chapter 2
2	1/28 1/30	The scientific method, characteristics of science/scientists, pure/research vs. applied science; characteristics of evidence: class, individual, identification; types of evidence, types of analysis, databases, chain of custody, probative value of forensic evidence, probability	Chapter 17 Handouts on Canvas
3	2/4 2/6	Microscopy & trace evidence, primary and secondary transfer, LEP Locard Lab	
4	2/11 2/13	Lab: Trace Evidence: Hair or Soil Continue Locard & Hair/Soil Lab	
5	2/18 2/20	Lab: Physical Fit (Glass) Exam 1	Articles on Canvas
6	2/25 2/27	Human ID: Early methods, Lab: Anthropometry Human ID: Bones and teeth, Lab: Bite marks	Chapter 7
7	3/3 3/5	Human ID: Bones and teeth, Lab: Bones	Chapter 9 Chapter 14
8	3/10 3/12	Human ID: Serology, Lab: Presumptive tests for blood & semen Human ID: Fingerprints	Chapter 10
9	3/17 3/19	Human ID: DNA, Familial DNA DNA Terminology Quiz, Lab: Mass Disaster	Finish MD paper
10	3/24 3/26	Due: Mass Disaster Paper Exam 2	
11	3/31 4/2	No Class: Spring Break!	Chapter 18 Chapter 1
12	4/7 4/9	Questioned documents, Lab: QD Expert Testimony, Frye, Daubert, FRE Quality control & quality assurance, accreditation, certification, standardization	NAS Report, Articles on Canvas
13	4/14 4/16	Problems in Forensic Science NAS Report, CSI Effect, evidence backlog, types & sources of error, absence of a research culture in FS, pattern evidence SWGs, FEPAC, FSAT Lab: Innocence Project, case studies	NAS Report, Articles on Canvas
14	4/21 4/23	Professional and scientific ethics, begin Ethics Lab Lab: Ethics, cont.	Chapter 20 Chapter 21
15	4/28 4/30	Digital Forensics Behavioral Science	Articles on Canvas
16	5/5 5/7	Resumes, Cover Letters, Interviews, Job Lab In-class Jeopardy Final!	
Final Exam	5/14	Canvas Final	

Check Canvas daily for assignments, due dates, and supplemental readings.

