

**San José State University**  
**Department of Justice Studies**  
**FS 162 Forensic Science Applications**  
**CRN 27986 & 27988, Spring 2017**

<b>Instructor</b>	Mary Juno
<b>Office Location</b>	MacQuarrie Hall 511
<b>Instructor Email</b>	<a href="mailto:mary.juno@sjsu.edu">mary.juno@sjsu.edu</a>
<b>Canvas Website</b>	<a href="https://sjsu.instructure.com/">https://sjsu.instructure.com/</a>
<b>Office Hours</b>	Drop in TH 1300-1500
<b>Class Days, Times, &amp; Location</b>	T&TH 1630-1820, MH 520
<b>Prerequisites</b>	UPPER DIVISION STANDING JS MAJOR OR MINOR: JS 10; FS MAJOR OR MINOR: FS 11
<b>Library Subject Liaison</b>	Silke Higgins <a href="mailto:silke.higgins@sjsu.edu">silke.higgins@sjsu.edu</a>
<b>FS LibGuide</b>	<a href="http://libguides.sjsu.edu/content.php?pid=57768&amp;sid=2450175">http://libguides.sjsu.edu/content.php?pid=57768&amp;sid=2450175</a>

**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:

- LO1** Demonstrate knowledge of practical analytical techniques in human identification, serology, trace evidence, questioned documents, pattern identification, glass reconstruction, and bite mark identification.
- LO2** Understand the history and importance of DNA fingerprinting, articulate the principles of DNA profiling and inheritance, and apply this knowledge to a realistic field exercise.
- LO3** Analyze and critically evaluate forensic error, and ethical issues in forensic science.
- LO4** 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 (40%) There will be three exams (and unannounced reading quizzes), and one final exam. Format will include multiple choice, fill-in, short essay and diagrams. (LO1, LO2, LO3, LO4)
2. Laboratory Exercises (40%) Labs will include Locard Principle, Hair & Soil, Physical Fit, Questioned Documents, Stab Lab, Human ID, Presumptive Tests for Blood & Semen, Pattern Evidence, and Anthropometry. (LO1)
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. (LO2)

4. Group Presentation (10%) In small groups, students will present a case or project on forensic error. (LO3)
- 5.

### Required Texts and Materials

- James, S., Nordby, J., & Bell, S. (2014). *Forensic Science: An Introduction to Scientific and Investigative Techniques, 4/E*. CRC Press/Taylor & Francis. ISBN-13: 978-1439853832
- Composition notebook.
- Journal articles, tutorials, and links to other required readings will be posted on Canvas. It is the student's responsibility to check the website 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, thoroughness, thoughtfulness, clarity, and logic. Note: A final grade of C or better is required for all Justice Studies and Forensic Science major and minor coursework.

### 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 (CAC, AAFS, IAI, *etc.*) that is of specific interest to *you* and supply proof of membership before the end of the semester. A professional organization is one that holds conferences and/or produces a periodic journal. This is not the same thing as an internship, job, or student organization; it is a professional *membership*.
2. Portfolio: Students may turn in a neat and organized 3-ring binder (portfolio) at the end of the semester containing all work completed in the class. Copies of group assignments are acceptable. This should be professional quality (for example, you would bring it to an interview to display your work).
3. Tour a crime lab and write a 2-page, typed, double-spaced synopsis of the experience. Santa Clara has monthly tours, and San Mateo has an annual tour in October.

### Class Protocol and Policies

- Late work may be submitted for half credit within one week of due date. Make-ups for exams will generally not be possible unless extraordinary, documented circumstances

exist. Lab exercises cannot be made up, so don't miss them. If you are in any doubt about the requirements of an assignment, or due dates/times, please re-read the directions of the assignment and/or schedule. If your question is still unanswered, contact me for clarification.

- Attendance and class participation is expected. It is essential that you come to class prepared so keep up with the reading, complete assignments on time, and participate in class discussions. Lack of adequate participation *will* result in pop quizzes, which *will* count toward your final grade.
- Cell phone use is not permitted during class. Students who use their phone in class will be asked to surrender it for the remainder of the class period. Laptops are permitted for note-taking only.
- 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 Resources**

### **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](mailto:sjsu.fss@gmail.com) for more information, or to get an application for membership.

### **Student Technology Resources**

Computer labs for student use are available in the Academic Success Center located on the 1<sup>st</sup> floor of Clark Hall and on the 2<sup>nd</sup> 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.

### **Learning Assistance Resource Center**

The Learning Assistance Resource Center (LARC) located in Room 600 in the Student Services Center assists students in the development of their full academic potential and motivates them to become self-directed learners. The center provides support services, such as skill assessment, individual or group tutorials, subject advising, learning assistance, summer academic preparation and basic skills development. <http://www.sjsu.edu/larc/>

### **SJSU Writing Center**

The SJSU Writing Center located in Room 126 in Clark Hall 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. <http://www.sjsu.edu/writingcenter/>

### **CASA Student Success Center**

The Student Success Center in the College of Applied Sciences and Arts (CASA) provides advising for undergraduate students majoring or wanting to major in programs offered in CASA Departments and Schools. All CASA students and students who would like to be in CASA 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 CASA Student Success Center. Location: MacQuarrie Hall (MQH) 533. Contact information: [408.924.2910](tel:408.924.2910) Website: <http://www.sjsu.edu/casa/ssc/>. The CASA Student Success Center also provides study space and laptops for checkout.

### **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](http://www.sjsu.edu/gup/syllabusinfo/) at <http://www.sjsu.edu/gup/syllabusinfo/>

### **Important Dates This Semester**

<http://www.sjsu.edu/registrar/calendar/2172/>

Feb 7: Last Day to Drop Without a W

Feb 14: Last Day to Add a Course, Last Day to Request CR/NC

Apr 26: Last Day to Submit Late Drop/Withdrawal Request <http://www.sjsu.edu/aars/forms/>

May 16: Last day of Instruction

### **Justice Studies Reading and Writing Philosophy**

The Department of Justice Studies is committed to scholarly excellence. Therefore, the Department promotes academic, critical, and creative engagement with language (i.e., reading and writing) throughout its curriculum. A sustained and intensive exploration of language prepares students to think critically and to act meaningfully in interrelated areas of their lives—personal, professional, economic, social, political, ethical, and cultural. Graduates of the Department of Justice Studies leave San José State University prepared to enter a range of careers and for advanced study in a variety of fields; they are prepared to more effectively identify and ameliorate injustice in their personal, professional and civic lives. Indeed, the impact of literacy is evident not only within the span of a specific course, semester, or academic program but also over the span of a lifetime.

### **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 and taught in the Oakland Police Academy. She has conducted research at the NYPD Latent Fingerprint Lab, and currently teaches JS and FS courses, and advises FS majors and minors. Her office is 511 MacQuarrie Hall.

## FS 162 Forensic Science Applications Spring 2017 Course Schedule

JNB = James, Nordby & Bell Canvas = check Canvas for readings

Schedule is subject to change.

Week	Date	Topics and Activities	Reading
1	1/26	Course overview, form groups, lab notebook rubric Brief history of forensic science, forensic laboratory structure, investigative personnel roles & responsibilities	JNB Canvas
2	1/31 & 2/2	The scientific method, characteristics of science/scientists, characteristics of evidence: class, individual, identification; types of evidence, types of analysis, databases, chain of custody, probative value of forensic evidence, probability	JNB Canvas
3	2/7 & 2/9	Microscopy & trace evidence, Locard Exchange Principle, primary and secondary transfer, physical fit Lab: Locard Exchange Principle	JNB Canvas
4	2/14 & 2/16	Labs: Locard Lab (cont.) & Microscopy  <b>Exam 1</b>	JNB Canvas
5	2/21 & 2/23	Human ID: Early methods, Lab: Anthropometry  Human ID: Bones, bite marks, Lab: Bite marks	JNB Canvas
6	2/28 & 3/2	Human ID: Serology  Lab: Presumptive tests for blood & semen	JNB Canvas
7	3/7 & 3/9	Human ID: DNA  Lab: Mass Disaster	JNB Canvas
8	3/14 & 3/16	<b>Due: Mass Disaster Paper, Exam 2</b> Questioned documents Lab: QD	JNB Canvas
9	3/21 & 3/23	Tool marks, wounds  Stab Lab	JNB Canvas
10	3/28 & 3/30	No Classes: Spring Break!	Canvas
11	4/4 & 4/6	Pattern evidence: Definition and criticism. Is it scientific?  Lab: Pattern Evidence	Canvas
12	4/11 & 4/13	Lab: Physical Fit (Glass)  <b>Exam 3</b>	Canvas
13	4/18 & 4/20	Expert Testimony, Rules of Evidence, Frye, Daubert Quality control & quality assurance, ASCLD-LAB, accreditation, certification, standardization	Canvas
14	4/25 & 4/27	Problems in Forensic Science: NAS Report, CSI Effect, evidence backlog, types & sources of error, absence of a research culture in FS, SWGs, FEPAC, FSAT Innocence Project, case studies	Canvas
15	5/2 & 5/4	Professional and scientific ethics Group presentations: Error	Canvas

<b>Week</b>	<b>Date</b>	<b>Topics and Activities</b>	<b>Reading</b>
16	5/9 & 5/11	LAB: Job Posting Getting the Job: Resumes, Cover Letters, Interviews	Canvas
Final Exam	5/16	Jeopardy Final!	