

Department of Justice Studies
FS 162 Section 03/04 Forensic Science Applications
CRN 50815 & 50816, Spring 2018

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| Instructor | Eric Kwong |
| Office Location | |
| Instructor Email | eric.kwong@sjsu.edu |
| Canvas Website | https://sjsu.instructure.com/ To login, use Tower ID and Password > Courses> FS 162 |
| Office Hours | After Class: MW 1600 – 1700 OR by appointment |
| Class Days, Times & Location | MW 1330 – 1600, HB 207 |
| Prerequisites | UPPER DIVISION STANDING JS MAJOR OR MINOR: JS 10; FS MAJOR OR MINOR: FS 11 |
| Library Subject Liaison | Silke Higgins silke.higgins@sjsu.edu |
| FS LibGuide | https://libguides.sjsu.edu/content.php?pid=57768&sid=2450175 |

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 Classify evidence and use appropriate analytical techniques in human identification, serology, trace evidence, questioned documents, pattern identification, glass reconstruction, and bite mark identification.

LO2 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.

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)

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

| <u>Letter Grade</u> | <u>Percent</u> | <u>Letter Grade</u> | <u>Percent</u> | <u>Letter Grade</u> | <u>Percent</u> |
|---------------------|----------------|---------------------|----------------|---------------------|----------------|
| A+ | 97-100 | C+ | 77-79.9 | F | <60 |
| A | 94-96.9 | C | 74-76.9 | | |
| A- | 90-93.9 | C- | 70-73.9 | | |
| B+ | 87-89.9 | D+ | 67-69.9 | | |
| B | 84-86.9 | D | 64-66.9 | | |
| B- | 80-83.9 | D- | 60-63.9 | | |

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 with a penalty of 5% per day for a maximum of 5 days, weekends included. Assignments submitted thereafter will NOT be accepted and results in an automatic fail unless extraordinary, documented circumstances exist, or a doctor's note is presented. Avoid missing lab practicals as there are no make-up sessions available. Should you know in advance of any extenuating circumstances that conflict with such sessions, it is your responsibility to inform me well in advance. The possibility for submitting an alternative assignment may be granted at discretion, but be advised that this undertaking will be quite demanding. 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 caught using their phone will be asked to surrender it for the remainder of the class. 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.
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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. Contact sjsu.fss@gmail.com or visit their website <https://sites.google.com/site/forensicsciencestudents/home> for more information and to apply

Student Technology Resources

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.

Peer Connections

Peer Connections are located throughout campus: Student Services Center (SSC) 600, first floor of Clark Hall in the Academic Success Center, and tutoring services in the Spartan Study Hub (SSH; formerly the LLC) in Campus Village B. They offer free mentoring and tutoring services to undergraduate SJSU students. Mentors and tutors are fellow SJSU students who understand the challenges you may be facing. Services include: mentoring, tutoring, and workshops.
<http://peerconnections.sjsu.edu/>

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**
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 SI6-9, 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

<http://www.sjsu.edu/registrar/calendar/2182/index.html>

Feb 5: Last Day to Drop Without a W

Feb 12: Last Day to Add a Course, Last Day to Request CR/NC

Apr 25: Last Day to Submit Late Drop/Withdrawal Request <http://www.sjsu.edu/aars/forms/>

May 14: 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

Eric Kwong is an alum of SJSU's Forensic Science program, earning his BS in Forensic Science – Chemistry. He then went on to complete an MSc in Forensic Science from the University of Strathclyde in Glasgow, Scotland. While at SJSU he was the President of the Forensic Science Students group and worked as a student assistant in the Department of Justice Studies. At Strathclyde, Eric conducted preliminary research investigating the feasibility of using a handheld FTIR instrument for use in the field by personnel without a scientific background.

FS 162 Forensic Science Applications Spring 2018 Course Schedule

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

Schedule is subject to change.

| Week | Date | Topics and Activities | Reading |
|------|---------------------|--|---------------|
| 1 | 01/24 | Course overview, form groups*, lab notebook rubric Brief history of forensic science, forensic laboratory structure, investigative personnel roles & responsibilities | JNB Canvas |
| 2 | 01/29 & 01/31 | 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 | 02/05 & 02/07 | Microscopy & trace evidence, Locard Exchange Principle, primary and secondary transfer, physical fit Lab: Locard Exchange Principle | JNB Canvas |
| 4 | 02/12 & 02/14 | Labs: Locard Lab (cont.) & Microscopy Exam 1 | JNB Canvas |
| 5 | 02/19 & 02/21 | Human ID: Early methods, Lab: Anthropometry Human ID: Bones, bite marks, Lab: Bite marks | JNB Canvas |
| 6 | 02/26 & 02/28 | Human ID: Serology Lab: Presumptive tests for blood & semen | JNB Canvas |
| 7 | 03/05 & 03/07 | Human ID: DNA Lab: Mass Disaster | JNB Canvas |

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| 8 | 03/12 & 03/14 | Due: Mass Disaster Paper, Exam 2 Questioned documents Lab: QD | JNB Canvas |
| 9 | 03/19 & 03/21 | Tool marks, wounds Stab Lab | JNB Canvas |
| 10 | 03/26 & 03/28 | Spring Recess – No Classes | |
| 11 | 04/02 & 04/04 | Pattern evidence: Definition and criticism. Is it scientific? Lab: Pattern Evidence | Canvas |
| 12 | 04/09 & 04/11 | Lab: Physical Fit (Glass) Exam 3 | Canvas |
| 13 | 04/16 & 04/18 | Expert Testimony, Rules of Evidence, Frye, Daubert Quality control & quality assurance, ASCLD-LAB, accreditation, certification, standardization | Canvas |
| 14 | 04/23 & 04/25 | 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 | 04/30 & 05/02 | Professional and scientific ethics Group presentations: Error | Canvas |
| 16 | 05/07 & 05/09 | LAB: Job Posting Getting the Job: Resumes, Cover Letters, Interviews | Canvas |
| 17 | 05/14 | | Canvas |
| Final Exam | 05/22 | | |