

Justice Studies Department
San Jose State University
Spring 2006
Class hours MW 1330-1445
Room: MH 520

Instructor: Dr. Steven Lee
Office Hrs: MW 1445-1945
set by appointment via email
email: Steven.Lee@sjsu.edu
phone: 408-924-2948

JS 112 Criminalistics

Course Description:

Course Objective

This course will teach an understanding of the fundamental theories of physical evidence, practically applied; and the legal consideration involved in its recognition, collection, preservation and presentation in court. Physical evidence includes such things as fibers, glass, hair, soil, bullets, fingerprints, and shoeprints. Learn the appropriate methods for processing, securing, and isolating a crime scene. Topics include recording the scene, searching for evidence, decision-making about what evidence is appropriate and necessary to collect, procedures for collecting physical evidence, and maintaining the chain of custody to avoid contamination.

Course Text and materials: Spartan Bookstore

Required Texts:

Techniques of Crime Scene Investigation, Seventh Edition. 2004 Barry Fisher.
ISBN084931691X, 544 pages. CRC Press

Evidence and Crime Scene Reconstruction (Expanded 6th edition - April 2002), National Crime Investigation and Training Joe Rynearson, Jerry Chisolm and Jim Weigand
<http://www.ncit.com>

Required reading and internet materials:

Journal articles and other readings will be accessible at the SJSU library, on reserve or will be accessible on line. Citations and URLs for on line materials will be provided in assignments. The web sites we will use include the following

- National Criminal Justice Reference Service: <http://www.ncjrs.org/>
- Crime Scene Investigation: <http://www.crime-scene-investigator.net/>
- CA Dept of Justice Physical Evidence Bulletins:
<http://www.cci.ca.gov/Reference/pehb/peb.html>, <http://www.crime-scene-investigator.net/>, and other forensic science web sites will be required reading.

Supplementary Texts (Optional)- Course material may include citations from the following:

Practical Crime Scene Processing and Investigation. 2004. Ross M Gardner. ISBN: 0849320437. CRC Press.

Bloodstain Pattern Analysis: With an Introduction to Crime Scene Reconstruction. 2001. Second Edition. Tom Bevel; Ross M Gardner ISBN: 0849309506. CRC Press.

Practical Homicide Investigation: Tactics, Procedures, and Forensic Techniques, Third Edition. 1996. Vernon J. Geberth. ISBN: 0849381568. CRC Press.

Criminalistics: An Introduction to Forensic Science (College Version), 8/E, Copyright 2004, published 6-18-2003, RE. Saferstein, Ph.D., ISBN: 0-13-111852-8, Prentice Hall, 608 pp.
<http://vig.prenhall.com/catalog/academic/product/0,4096,0131118528,00.html>

Henry Lee's Crime Scene Handbook. 2001. Henry Lee. Ph.D. ISBN 0-12-440830-3, 418pp. Academic Press.

Forensic Science: An Introduction to Scientific and Investigative Techniques. 2003. Stuart H. James and Jon J. Nordby eds., ISBN: 0849312469, 698pp. CRC Press

Forensic Firearms Evidence handbook. 1995. Lucian Haag. Workbook.

Experiments and Practical Exercises in Bloodstain Pattern Analysis. 1998. Laber, T and Epstein B. 1998 5th printing. Minnesota BCA.

Course Format:

The course will include **lectures by the instructor and guest lectures** from law enforcement agencies. **Discussions, small-group hands-on activities, and hands-on crime scene exercises** will also be included throughout the semester. On-line chat sessions if possible will also be offered.

Course requirements:

Exams: Three exams will be given in this course. Exams will be cumulative and will include all material covered up to the date of the exam. Exams may include multiple choice, matching, true/false, short answer, diagrams, drawings and sketches, short essay and/or long essay.

Exam 1:	Wednesday	March 1	1330-1445
Exam 2:	Wednesday	April 12	1330-1445
Final	Thursday	May 18	1215-1430

Quizzes- 50 points

Quizzes on assigned readings, laboratories, small group activities and other assigned materials will be given during the semester. These will generally be multiple choice, matching, true/false and short answer but may also include essay questions. Quizzes will be given announced as well as unannounced. Each quiz may cover material that is assigned in the reading (on the greensheet) as well as material covered in the lectures and reading for previous days.

Hands-on Crime scene Assignments/Reports- 50 points

There will be at least 5 crime scene activities held throughout the semester. These will include: measurements, documentation, searching a crime scene, fingerprints, and blood stain pattern interpretation. Written reports for each of the activities will be required (see general guidelines for reports below). During the semester, at least 1 report from each crime scene team will be collected and reviewed.

At the end of the semester on **May 10th** all reports entered in notebooks will be collected. Participation in the crime scenes will also be considered in the grades.

Guidelines for Reports: All reports must contain the following sections: Abstract, Introduction, Materials and Methods, Results, Discussion with Conclusions, References, and Appendices with raw data. All pages must be numbered, initialed and dated and all materials must be firmly secured in the notebooks using a tape seal that has been initialed and dated.

Each report is worth 10 points. Reports will be graded using both administrative and technical criteria. Details of format and grading of the reports will be provided at the first crime scene session. Grading in general includes the following considerations

- **Administrative Criteria- Approximately 1 point each per crime scene report**
 - Is the notebook bound (not spiral and no pages removed/loose) and are all crime scenes included?
 - Is the chain of custody completed for any evidence transfers and documented appropriately? Are proper citations and acknowledgements documented for other individual's work (e.g. citations/references/teammates whole names)? Is the evidence, properly sealed and stored where indicated?
 - Is the documentation complete? Do the reports include notes, sketches and photographs? Are all pages numbered, dated and initialed? Is all data properly and securely inserted into the notebooks?
 - Where assigned, do the reports address the questions provided?
 - Are the reports organized with all sections? Is the writing clear and legible?
- **Technical and Scientific Criteria- Approximately 1 point each per crime scene report**
 - Are data tabulated/summarized and analyzed accurately?
 - Does the data support the statements in the reports?
 - Are the statements within the report and between team members consistent? If not, are discrepancies explained?
 - Is the technical detail provided sufficient for court and would the CSI be able to reconstruct the "crime scene" years from now, based on the documentation?
 - Are additional external references/citations utilized (those not provided in the class)?

Grading

Quizzes	50 points
Exam 1	100 points
Exam 2	100 points
Final exam	150 points
Scene reports	50 points
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Total required	500 points

Extra Credit

A total of 10 points may be granted for small group assignments and other assignments during the semester. Other assignments may consist of additional journal articles, URL readings, and other lectures and seminars that will be announced during class. \

The extra credit assignment will be to **read the article and then provide a 200 word summary (no longer than 1 page) with 3 submitted questions and 3 answers**. Each assignment will be worth 1-2 points each. The assignments are usually due 1 week after they are made unless otherwise announced. These extra credit points may be used to augment your final point total. The extra credit assignments will be graded and tabulated by the instructor. These will be returned at the end of the semester upon request.

Grading Policies

Make-up exams will not generally be permitted. However, under extraordinary circumstances, with proper documentation and approval by the instructor, a 15 page single-spaced term paper of an instructor assigned topic, may substitute for 1 exam.

	From	To
A+	483.5	500
A	467	483.4
A-	450	466.9
B+	433.5	449.9
B	417	433.4
B-	400	416.9

C+	383.5	399.9
C	367	383.4
C-	350	366.9
D+	333.5	349.9
D	317	333.4
D-	300	316.9
F	<300	

Instructor

Professor Lee holds an MS from NYU and PhD from University of California, Berkeley in Molecular Biology. Lee is currently the Director of R&D at Hitachi Genetic Systems, Visiting Scholar at UC Berkeley, and is also an adjunct professor at San Francisco State University and Florida International University. He was formerly the Director of R&D at CA Dept of Justice DNA Laboratory from 1994-2000 where he served as an expert witness in DNA and conducted DNA training courses. He is a full member of AAFS, CAC and is ASCLD-LAB certified.

Tentative Course Schedule (subject to change with fair notice):

Dates	Topics	Fisher	Ryn
Week 1:	Introduction to Crime Scene Investigation	Chap 1 (C1)/	Tab 1
25 Jan	Handouts-Syllabus- Reading material Ice Breaker- Introductions: Your background, my background Course Description, requirements, grading etc. Set up small student groups		

Welcome- Sign up for small groups - Safety concerns

Topics

- Goals of Crime Scene Investigation
- Physical Evidence
- Value of Physical Evidence

Assignments-

- **Sign in-** send an email to your team captain with your email address you would like to use. Team captains send an email to Steven.Lee@sjsu.edu and slee@miraibio.com with all your team mate emails and phone numbers-
Emails from team captains with all team member emails - Due 1 February
- Read: Crime Scene Investigation: <http://www.ncjrs.gov/pdffiles1/nij/200160.pdf>
Section A. Arriving at the Scene:Initial Response/Prioritization of Efforts
Due 30 January- Study for the Quiz
- **Purchase CSI kit materials 1-10** (You may purchase pre-made kits from the forensic science student group See board for information on CSI kits)- **Due 1 Feb.**
- **Take Plagiarism tutorial and quiz-** Bring hard copy of quiz results
 - <http://tutorials.sjlibrary.org/plagiarism/index.htm>

Week 2: The Crime Scene- and Physical Evidence **C1 and 5/T1**
30 Jan Introduction to Crime Scene. Investigations continued
And Crime Scene Management **C5**

- Overview of Physical Evidence in Criminal Investigations
 - Identification and Individualization of Physical Evidence
 - Collection and Preservation of Physical Evidence
 - Important Considerations in Crime Scene Investigations
 - Guidelines for Forensic Laboratory Management Practices
 - Information Resources
- Role of The Criminalist
 - Expert Witness Tips
 - Teamwork and Professional Development

Assignments-

- Read: Crime Scene Investigation: <http://www.ncjrs.gov/pdffiles1/nij/200160.pdf>
Section B- Preliminary Documentation and Evaluation of the Scene- **Due 1 Feb.**

Read Fisher Chapter 1 and 2- Due 1 February

2/1 CSI Exercise 1: Documentation: Measurements – Precision and Accuracy

Required: Notebooks, Pens, Measuring tape, Rulers, Protractors.

Week 3: General Crime Scene Procedures First Officer at the Crime Scene **C2&4/T2**

2/6 General Crime Scene Procedures- Initial Response

- Initial Crime Scene Response- The first Officer at the Scene
- Recording the Time- Entering the Scene Proper
- Communication, Documentation, Preliminary Reconstruction,
- Protecting the Integrity of the Scene

2/8 Topics- Sgt. Mike Doty- Santa Clara Medical Examiner- Pending confirmation

- Injured Person on the Scene - Dead Person on the Scene
- Summoning the Coroner (Medical Examiner Lecture upcoming)
- What to Do Until Investigating Personnel Arrive
- Continued Protection of the Scene

Week 4: Crime Scene Documentation **C3&C5/T2**

2/13 Crime Scene Documentation

- Sketches, Photography and Note Taking
- Transient/Conditional Evidence
- Protecting the Integrity of the Scene - Safety Issues

CSI Exercise 2: Documentation- Sketching/Note-taking- Indoor scene

2/15 CSI Exercise 2: Documentation- Sketching/Note-taking- Indoor scene- Follow up

Week 5: Searching for Physical Evidence **C5/T2**

2/20 Searching for Physical Evidence

CSI Exercise 3: Searching for Physical evidence - Outdoor scene

- Locating Physical Evidence
- Search Patterns
- Practical Applications

2/22 **Video: FBI Crime Laboratory: Lee will be at the American Academy of Forensic Science Meeting**

Week 6: Student Led Review for Exam 1 **C1,2,3,5,T1,T2**

2/27 **Review Chapters Fisher 1, 2, 3, 5 and Rynearson Tabs- 1 and 2**
Also NCJRS document and other assignments

3/01 **Exam 1**

Week 7: Collection and Preservation of Physical Evidence: Fingerprints **C6**

3/06 **Fingerprints-**

CSI Exercise 3: Searching for Physical evidence - Outdoor scene follow up

Topics

- Where to look for fingerprints/Different Types of Fingerprints
- Fingerprint Developing Techniques/Automated Fingerprint Identification Systems
- Preservation of Fingerprints
- Examination of Developed Fingerprints
- Packing Objects on which Prints are Found
- Taking Fingerprints for Elimination

3/08 **CSI Exercise 4: Fingerprints**

Week 8: Collection and Preservation of Physical Evidence: Firearms **C10/Tab 4**

3/13 **Firearms**

- Characteristics of Firearms
- Ammunition and Firearms Evidence
- Gunshot Residue Analysis
- Collection Firearms Evidence
- Handling of Firearms, Cartridge Cases and Bullets

National Integrated Ballistic Information Network (NIBIN) Tool Marks

3/15 **CSI activity: Reconstruction of a Shooting Incident through glass**

Week 9: Toolmarks and Other Impression evidence- Questioned Documents C9/Tab 4

3/20 Toolmarks

- Preservation of Tool Marks/Casting Tool Marks
- Preserving a Tool
- Footprints/Tire Marks/Bitemarks

3/22 Questioned Documents

Week 10: Spring Break 3/27-3/31

Week 11: Arson and Explosives

C 11

4/3 Arson- Fire Science

4/5 Explosives

- Low Explosives
- High Explosives
- Blasting Agents
- Military Explosives
- Homemade Explosives- Bomb Scene Investigation

Week 12 Review for Exam 2 and Exam 2

C6,9,10,11, T4

4/10 **Student Led review for Exam 2**

4/12 ***Exam 2***

Week 13 Drugs

C12

4/17 Illicit Drugs and Toxicology

- Psychoactive Drugs
 - Central Nervous System Depressants
 - Central Nervous System Stimulants
- Hallucinogens
- Crime Scene Search
 - Searching a Suspect, Dwelling, Vehicle
- Clandestine Drug Laboratories
- Collection of Preservation of Evidence

4/19 Toxicology

US DEA Drug Schedule Classification

Week 14 Biological Evidence-Forensic Biology

C8/T4&8

4/24 Bloodstain Pattern Analysis

CSI exercise 5: Blood stain pattern analysis

4/26 Intro to Cell biology-

- Serology- Presumptive Tests
- Intro to Deoxyribonucleic Acid Structure and Function
- Intro. to DNA Restriction Enzymes, DNA extraction, quantification and RFLP
- General considerations for collection of biological evidence

Week 15	Biological Evidence- DNA- PCR	C8/
5/1	Video on forensic DNA- Lee will be at the Armed Forces DNA Identification Lab	
5/3	Introduction to STRs, CODIS, mtDNA, Y STRs Future of DNA testing	
Week 16:	Homicide Investigation and Reconstruction	C16/T3&5
5/8	Murder, Suicide, Accident Signs of struggle Occums Razor	
5/10	Estimating time of death Autopsy	
Week 17	Ethics, Court Testimony and Crime Scenes & Review for Final	
5/15	Logic, Ethics, and the Criminal Justice System- Crime Scene considerations Considerations in evidence interpretation- Lessons from- Court Testimony <u>Student led- Course Review for final exam</u>	

Assignment 1. Due 2/1/06

Start to collect the following individually and with your team mates

For each person:

1. Bound notebook with page numbers- Spiral notebooks are not as good as pages can easily be torn out. If you need to use a spiral notebook, be sure every page is numbered.
2. Tape measure
3. Rulers and protractors (with metric and inches)
4. Graph paper (10 sheets/person)
5. Permanent sharpie markers (at least 2- black or blue)
6. Pens (ball points)
7. Manila envelopes (30 – 8x11”, 50 coin envelopes)
8. Paper bags (2/person)
9. Plastic ziplock bags (2/person)
10. Q tips (20/person)

For each team

11. Clear packing tape with dispenser
12. 35 mm camera with 3 rolls of film or Digital Camera
13. Rope or Twine
14. Pill boxes (various sizes)
15. String
16. Labels
17. Tweezers
18. Scissors
19. Toothpicks

I will provide access to

- Knife
- Gloves (latex)
- Masks (painters)
- Etoh wash bottles
- Cleaning solutions
- Lab coveralls/booties
- Water bottles

Academic Integrity

Academic integrity is essential to the mission of San José State University. As such, students are expected to perform their own work (except when collaboration is expressly permitted by the course instructor) without the use of any outside resources. Students are not permitted to use old tests, quizzes when preparing for exams, nor may they consult with students who have already taken the exam. When practiced, academic integrity ensures that all students are fairly graded. Violations to the Academic Integrity Policy undermine the educational process and will not be tolerated. It also demonstrates a lack of respect for oneself, fellow students and the course instructor and can ruin the university's reputation and the value of the degrees it offers.

We all share the obligation to maintain an environment which practices academic integrity. *Violators of the Academic Integrity Policy will be subject to failing this course and being reported to the Office of Judicial Affairs for disciplinary action which could result in suspension or expulsion from San José State University.* The policy on academic integrity can be found at: http://sa.sjsu.edu/judicial_affairs/students/academic_integrity.html.

CHEATING:

At SJSU, cheating is the act of obtaining or attempting to obtain credit for academic work through the use of any dishonest, deceptive, or fraudulent means. Cheating at SJSU includes but is not limited to:

Copying in part or in whole, from another's test or other evaluation instrument; Submitting work previously graded in another course unless this has been approved by the course instructor or by departmental policy. Submitting work simultaneously presented in two courses, unless this has been approved by both course instructors or by departmental policy. Altering or interfering with grading or grading instructions; Sitting for an examination by a surrogate, or as a surrogate; any other act committed by a student in the course of his or her academic work which defrauds or misrepresents, including aiding or abetting in any of the actions defined above.

PLAGIARISM:

At SJSU plagiarism is the act of representing the work of another as one's own (without giving appropriate credit) regardless of how that work was obtained, and submitting it to fulfill academic requirements. Plagiarism at SJSU includes but is not limited to:

The act of incorporating the ideas, words, sentences, paragraphs, or parts thereof, or the specific substances of another's work, without giving appropriate credit, and representing the product as one's own work; and representing another's artistic/scholarly works such as musical compositions, computer programs, photographs, painting, drawing, sculptures, or similar works as one's own.

All students are required to take the on-line tutorial and quiz on plagiarism:

Go to: <http://tutorials.sjlibrary.org/plagiarism/index.htm> Take the quiz and print out your results
Due 1 February 2006

Campus policy in compliance with the Americans with Disabilities Act:

"If you need course adaptations or accommodations because of a disability, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities register with DRC to establish a record of their disability."