

Administration of Justice Department
San Jose State University
Fall 2003
Class hours MW 1330-1445
Room: MH 520

Instructor: Dr. Steven Lee
Office Hrs: M 1500-1800 W1500-1700
set by appointment via email
email Steven.Lee@sjsu.edu
Lab Asst: Jeremiah Garrido
jgarrido@crime.lab.co.santa-clara.ca.us

AJ 113 Introduction to Forensic Sciences

Course Description:

This course is designed to introduce students to the basics of forensic science. Students will be introduced to the scientific concepts, methods, practices and analytical instrumentation utilized by forensic scientists for the recognition, collection, preservation, identification, comparison, analysis and documentation of physical evidence. Evidence interpretation and court testimony, professional requirements, standards, training, ethics, and quality assurance will also be covered.

Course Text and materials:

Required Text:

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>

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. CA Dept of Justice Physical Evidence Bulletins: <http://www.cci.ca.gov/Reference/pehb/peb.html> and other forensic science web sites will be required reading.

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

Forensic Science Handbook Volume III, 1/e Richard Saferstein ©1993 / ISBN: 0133253902

Forensic Science Handbook, Volume II, 1/e Richard Saferstein, Bill Bliss, Arlington, VA ©1988 / ISBN: 0133268772

Techniques of Crime Scene Investigation 6/E, 2002, Barry A.J. Fisher, BS, MS, MBA, ISBN 0-8493-8119-3, CRC Press LLC;552pp.

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

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

Course Format:

The course will include **lectures by the instructor and guest lectures** from crime laboratory forensic scientists. **Discussions, small-group hands-on activities, and laboratories** will also be included throughout the semester. If possible, on-line chats and field trips (to at least one crime laboratory) will be scheduled (TBA).

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:	Monday October 1st
Exam 2:	Monday November 5th
Final	TBA

Quizzes

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.

Laboratory Reports

Three laboratory reports will be required. Each will be worth 50 points. The format and grading of the laboratory reports will be provided at the first laboratory session.

Grading

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

A total of 25 points may be granted for small group assignments and other assignments during the semester. Each assignment will be worth 5 points each. These extra credit points may be used to augment your final point total.

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.

A=	450-500	C=	350-399	F=	<300
B=	400-449	D=	300-349		

Instructor and TA

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.

Jeremiah Garrido is a criminalist at the Santa Clara County Crime Laboratory where he serves in the DNA section. He has also served as an expert witness in trace and fibers and has been to several crime scenes. He has a BS in Forensic Scienc from the University of New Haven.

Tentative Course Schedule:

Dates	Topics	Saferstein
Week 1:	Introduction and Overview of Forensic Science	Chap 1 (C1)
8/25	Handouts-Syllabus- Readings material Introductions: Your background, TA background, my background Course Description, requirements, grading etc. Set up small student groups <i>Assignment- Sign in- send your email address to : Steven.Lee@sjsu.edu</i> <i>Read Saferstein Chapter 1 and 2</i>	
8/27	Guest Lecture- Speaker Introduction to Criminalistics Mary Gibbons, M Crim. UC Berkeley Director Oakland Police Department Crime Laboratory	
Week 2:	The Crime Scene- Processing the crime scene	C 2
(9/1 holiday)		
9/3	This topic is covered extensively in AJ112	
Week 3:	The Microscope – Light, compound, comparison, IR, SEM	C7
9/8	Initial Examination- Characterization and Identification Procedures	
9/10	Spectral Measurements	
Week 4:	Laboratory 1 A Fingerprints and Intro to Physical Evidence	
9/15	Laboratory 1A- Fingerprints	C14
9/17	Physical Evidence- Overview Glass and Soil	C3 C4
Week 5:	Trace evidence: Hairs, Fibers, and Paint	C8
9/22, 9/24		
Week 6:	Laboratory 1B Fingerprints and Review for Exam	
9/29	Laboratory 1B Fingerprints continued- Lab 1 reports due Review for Exam 1	C14
10/1	EXAM 1- Lee at Human Identity meeting	
Week 7:	Chemical Foundations: Organic and Inorganic Analysis	C5
10/6	Organic Analyses	C5
10/8	Inorganic Analyses	C6
Week 8	Laboratory 2A: Firearms/Ballistics	C15
10/13	Laboratory 2A Firearms	
10/15	Toolmarks and other impression evidence	

Week 9:	Chemical Foundations	
	Forensic Toxicology/Pharmacology – Drugs	C9,C10
10/20	Guest Lecture: Tom Abercrombie Supervising Criminalist Oakland Police Department Crime Laboratory	
10/22	Forensic Toxicology continued	
Week 10	Laboratory 2B Firearms continued and Arson investigation	
10/27	Laboratory 2B – Laboratory report due	
10/29	Arson and Explosion Investigations	C11
Week 11	Biological Foundations	C12
11/3	Cell Biology- Serology Review for Exam 2	
11/5	Exam 2	
Week 12:	Laboratory 3A: Forensic Biology-	C12
	Intro to Deoxyribonucleic Acid Structure and Function	C13
11/10	Laboratory 3A Forensic Biology	
11/12	Intro to DNA Central Dogma The Genetic Code Chromosome Structure DNA Synthesis, Restriction Enzymes, DNA extraction and PCR	
Week 13	Forensic DNA testing	C13
11/17	DNA Profiling (RFLP Analysis) DNA Sequencing	
11/19	Short Tandem Repeats, Mitochondrial DNA , Y Chromosome testing Medical Benefits, Legal and Ethical Considerations Microbial Forensic Genetics and Biodefense	
Week 14	Laboratory 3B Forensic Biology Laboratory and DNA cont	C13,C14
11/24	Laboratory 3B Forensic Biology laboratory lab report due	
11/26	Forensic DNA continued SWGDM and DAB Guidelines Polymerase Chain Reaction applications	
Week 15	Questioned Documents and Computer Forensics	C16
12/1	QD	
12/3	Use of Computers in Forensic Science Investigation of Computer-Related Crime	
Week 16	Legal and Ethical Issues in Forensic Science, Court Testimony and Course Review	
12/8	Countering Chaos: Logic, Ethics, and the Criminal Justice System Considerations in evidence interpretation Lessons from- Court Testimony Course Reviews	