

Justice Studies Department
San Jose State University
Fall 2005
Class Hours: Monday 5:30-8:15pm
Room: MH 520

Instructor: Katie Ryan
Office Hours: Mon. 4:30-5:30pm
or by appointment
email is preferred method of contact:
kjtryan@hotmail.com

JS 113- Introduction to Forensic Science

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, 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) 8th Edition. Copyright 2004, published 6/18/2003. RE Saferstein, Ph.D., ISBN: 0-13-111852-8, Prentice Hall, 608 pp,

Required reading and internet materials: A reader consisting of journal articles relevant to the course and laboratory procedures will be required. The instructor will give details on the purchase of the reader on the first day of class. In addition, journal articles and other readings will be accessible on reserve at the SJSU library 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/peb/peb.html> and other forensic science web sites will be required reading.

Optional Supplemental Texts-course materials may include citations from the following:

- *Forensic Science Handbook Vol. III*, I/ed. Richard Saferstein, 1993/ISBN 0133253902
- *Forensic Science Handbook, Vol. II*, I/ed. Richard Saferstein, Bill Bliss, Arlington, VA. 1998/ISBN 0133268772
- *Techniques of Crime Scene Investigation*, 2003. Seventh Ed. Barry A.J. Fisher. ISBN 084931691X.CRC Press LLC. 544 pp.
- *Forensic Science: An Introduction to Scientific and Investigative Techniques*. 2003. Stuart H. James and Jon J. Nordby eds. ISBN 0849312469, CRC Press. 698 pp.

- *Henry Lee's Crime Scene Handbook*. 2001. Henry Lee, Ph.D., ISBN 0-12-440830-3, Academic Press. 418 pp.
- *Forensic DNA Typing: Biology and Technology Behind STR Markers*. 2001. John Butler Ph.D., ISBN 0-12-147951-X. Academic Press. 322pp.
- *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.
- *Uppers, Downers, All Arounders*. 2000. 4th ed. Darryl Inaba, Pharm.D, William Cohen. CNS Publications. 493 pp.

Class Participation and Grading

Course Format: This course will include lectures by the instructor and guest lecturers. Discussions, videos, small-group projects or presentations, hands-on activities and laboratories will also be included as part of the curriculum. Field trips to local crime labs or to appropriate off-campus locations may be scheduled during the semester. Assigned reading will also be required on a weekly basis.

Course Requirements:

Exams: Two midterms and one final exam 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/sketches, short essay and/long essay. Material covered in the exams & quizzes may be taken from some or all of the following sources: in-class lectures, guest lectures, assigned reading, laboratory exercises, videos, tours and in-class presentations.

Quizzes: Quizzes may or may not be announced prior to being given in class. You should be prepared to be quizzed on any previously assigned reading, laboratory and lecture material. Quizzes may include multiple choice, matching, true/false, short answer, diagrams, drawings/sketches, short essay and/or long essay. Quiz grades are included in your final grade.

Laboratory Reports: Several lab reports will be required. Details will be provided at the first laboratory session. Lab grades are included in your final grade for the course.

Class Participation: Up to 10 class participation points may be awarded based on individual student's participation in class discussions, group assignments, laboratories and participation in class discussion. These extra credit points may be used to augment your final point total.

Grading:

Quizzes/Misc	50 pts
Midterm 1	100 pts
Midterm 2	100 pts
Final Exam	100 pts
<u>Lab Reports</u>	<u>150 pts</u>
Total	500 pts

Grading Polices: Make-up exams will generally not be permitted. However, under extraordinary circumstances, including documentation and prior discussion with and approval by the instructor, a make-up exam may be granted. Make-Ups for the final exam will not be granted.

No late work (laboratory reports, papers, class presentations etc) will be accepted without prior approval from instructor. I do not offer extra credit in the form of presentations or papers. Extra credit may be available on exams etc. In accordance with University policy, students caught cheating will receive and F grade.

As appropriate to your particular class, the University's policy on plagiarism may be reviewed at <http://www2.sjsu.edu/senate/plagiarispolicies.htm>. In addition, if you would like to include in a paper, any material you have submitted, or plan to submit for another class, please note that SJSU's Academic Integrity policy SO4-12 requires approval from instructor. Collaboration is allowed only when explicitly stated by the instructor. If you are unsure if you are allowed to collaborate on a project please check with the instructor.

Grades will follow the scale below unless otherwise announced by the instructor:

A	100-90
B	89-80
C	79-70
D	69-60
F	59 and below

Safety: Any student with special needs should contact the instructor on the 1st day of class. Classroom safety will be discussed on the first day of class and in the laboratory when warranted.

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."

Instructor: Katharine Ryan holds an MS from San Jose State University in Biological Sciences. She also holds a BA from UC Berkeley in Molecular Cell Biology with an emphasis in Cell Biology. She worked as a forensic scientist at the Santa Clara Co. Crime Laboratory for six years, at the Contra Costa Co. Sheriff's Crime Laboratory for <1 year and the Serological Research Institute for 2 years. She has made presentations on forensic science to science educators, school groups and law enforcement personnel. She has also attended several professional meetings and presented her thesis material to a peer review panel.

Tentative Course Schedule/Subject to change depending on scheduling conflicts and notice from instructor.

<u>Dates</u>	<u>Topics</u>	<u>Reading (Saferstein)</u>
Week 1 (1/30)	Introduction/Overview of Forensic Science Handouts, syllabus, introductions, course descriptions, requirements, grading policies.Break. Introduction to Forensic Science	Ch. 1,2
Week 2 (2/6)	The Crime Scene & Physical Evidence Processing the crime scene & legal considerations. Break. Introduction to physical evidence.	Ch. 3
Week 3 (2/13)	The Microscope-Light/Compound/Comparison/IR/SEM Initial Examinations, Characterization, Application and Identification. Break. Introduction to Fingerprints. Organize groups for student led review.	Ch. 4,7,14

Week 4 (2/20)	Fingerprints Detection, classification, preservation and documentation of latent prints. AFIS.	
Week 5 (2/27)	Fingerprints/Fingerprint Lab 1 Fingerprint Lab and Student Led Review for MT 1.	Ch. 14
Week 6 (3/6)	Midterm 1. Video presentation.	Ch. 1-4, 7,14
Week 7 (3/13)	Midterm 1 test review. Controlled Substances/Forensic Toxicology/BA/TLC/FTIR/GC/MS	Ch. 5,6,9,10
Week 8 (3/20)	Controlled Substances/Forensic Toxicology/BA/TLC/FTIR/GC/MS Continued from Week 7.	Ch. 5,6,9,10
Week 9 (3/27)	Spring Break-no class	
Week 10 (4/3)	Firearms and Impression Evidence/Footprint Lab Bullet comparisons, cartridge cases, distance determination, serial number restoration, tool marks, shoeprints. GSR. Break. Footprint Lab	Ch. 15
Week 11 (4/10)	Ethics/Court Testimony Court testimony. Ethics in forensic science. Firearms Lab.	Ch. 18
Week 12 (4/17)	Firearms wrap-up. Midterm 2.	Ch. 5,6,9,10,15,18
Week 13 (4/24)	Arson/Hairs/Fibers/Paint/Question Docs/Intro to DNA. MT2 review. Arson, explosion analysis. Trace evidence collection, preservation and comparisons. Break. Question Documents. Intro to forensic biology.	Ch. 8, 11
Week 14 (5/1)	Forensic Biology/Serology/Serology Lab 3 Intro to Serology. Presumptive testing for blood, semen. Break. Serology Lab?.	Ch. 12

Week 15 **Forensic Biology/DNA/PCR** **Ch. 13**
(5/8) DNA basics. Break. Extraction, quantitation, PCR, RFLP, STR.
Mixture, UV light degradation

Week 16 **Forensic Biology/DNA/PCR Lab** **Ch. 13**
(5/15) PCR/STR lab to be determined

Final Exam **Cumulative Final** **5:30-8:15pm**