FS- 160:

**CLO 4** Understand and make an educated opinion on ethical and legal controversies associated with application of forensic molecular phenotyping, investigative genealogy and other potentially controversial forensic tools.

## **Course requirements and assignments**

## **Classroom Protocol**

Please note that lectures are not recorded and will not be repeated. You will be evaluated in part based upon your contributions to class discussions, hence class participation is expected. It is essential that you come prepared to participate so keep up with the reading and plan to speak up.

Cell phones / smart devices are NOT permitted in the class, unless they are required for class activities.

## Assignments

- 1. Quizzes: 40%
- 2. Final exam: 30%
- 3. Digital media project: 30%
- 4. Extra credit assignments: 1 42.60.00000881 0 0 331.4Qq0.000008871 0 595.32 841.92 reW\*hBT/F3 11.04 Tf1 0 0 1 60.

Social functions (including weddings, concerts, Star Wars conventions, etc).

Personal administration (eg. my homework has been eaten by a hungry Puma, I had to watch my favorite season of Game of Thrones, etc).

## Assessment task 1: Quizzes

This assessment task is designed to encourage reflection and critical review of lecture and assigned reading materials. It will consist of answers to online quizzes; specifically:

Four online quizzes in four separate weeks, each worth 10%, will contribute a total of 40% to your final assessment. Each quiz will consist of responses to approximately ten multiple-choice or short answer questions. The questions will cover the material learned during the lectures and assigned readings.

- 2. A bonus quiz up to 2% of the final grade.
- 3. Attend a Forensic Science seminar and write a two-page, double-spaced, typewritten paper that includes a synopsis of the seminar/lecture and your reaction/response. Your paper is due within one week of the event. Up to 2% of the final grade.
- 4. Complete a short course offered by the National Institute of Justice marked "extra credit" during the Forensic Bio module and submit your certificate of completion by the end of that module. Up to 3% of the final grade.
- 5. Students can write a research paper about a career in criminalistics that is of interest to the student. The paper will be in APA format and contain an introduction, the body of the research, and a conclusion. The length of a paper should be between 2 and 3 standard pages in 1.5 font. The paper must contain in-text citations from at least three sources (preferably peer-reviewed papers). Up to 1% of the final grade.

**Please note,** the maximum cumulative bonus grade you can get is 100, which can be used to adjust your final grade up to 5%. In other words, if you choose both the second and fourth bonus assignment tasks (a bonus quiz and a short online course), you would theoretically improve your final grade by up to 5 points. If you complete only the first task, it would improve your grade by 2% and so on.

## Late Work and Make-Ups

Real-life has deadlines and so do college classes. Generally, you will have plenty of time to work and submit each of the assignments in this course. With this in mind, manage your time responsibly with the knowledge that late work will generally not be accepted.

If you know ahead of time that you will be unavailable when an assignment is due, complete it early. Make-ups will generally not be given unless extraordinary, documented circumstances exist.

If you have a genuine problem, contact me ASAP and I will gladly do all I can to help you. If you are in any doubt about the requirements of an assignment, or due dates/times, please re-read the assignment and/or schedule. If your question is still unanswered, please contact me for clarification.

The following texts provide a more in-depth overview of the main topics discussed in this course:

Butler (2012) Advanced topics in forensic DNA typing: Methodology. Academic Press (Elsevier). Available from <u>MLK library</u>.

## **University Policies**

Per <u>University Policy S16-9</u> (http://www.sjsu.edu/senate/docs/S16-9.pdf), relevant university policy concerning all courses, such as student responsibilities, academic integrity, accommodations, dropping and adding, consent for recording of class, etc. and available student services (e.g. learning assistance, counseling, and other resources) are listed on <u>Syllabus Information web page</u> (http://www.sjsu.edu/gup/syllabusinfo), which is hosted by the Office of Undergraduate Education. Make sure to visit this page to review and be aware of these university policies and resources.

## Department of 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 fikeS180 -102 re.g0 G [liversity prepared to Thl tlities, academic i, 5

Student Conduct and Ethical Development. The Student Conduct and Ethical Development website is available at http://www.sjsu.edu/studentconduct/.

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism will result in a failing grade and sanctions by the University.

#### **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 <a href="mailto:sjsu.fss@gmail.com">sjsu.fss@gmail.com</a> 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, course advising, learning assistance, summer academic preparation and basic skills development. <u>http://www.sjsu.edu/larc/</u>

### **Tentative course schedule**

Notes about the course schedule: The order of the discussed topics and specific and focus might change,

a manner that benefits students (e.g., due dates can only be pushed back, never moved forward). Only the main required texts are listed below due to space limit. Please check Canvas for additional resources.

Week	Date	Topics, Readings, Assignments, Deadlines
1	01/28/20	Course introduction Overview of assignments and expectations
		Quick recap

		Readings
		Butler JM (2010): Chapter 14
		Check Canvas webpage;
6	03/03/20	STR genotyping and data interpretation
		Readings
		Butler JM (2010): Chapters 17 & 18
		Butler JM (2012): Chapters 12 & 17
		van Daal and Budowle (2008). Forensically relevant SNP classes. BioTechniques 44, No. 5
		van Daal and Budowle (2008). Extracting evidence from forensic DNA analyses: future molecular biology directions. BioTechniques 46:339-350
7	03/10/20	Emerging technologies: novel forensic genotyping markers
		Readings
		Check Canvas webpage
8	03/17/20	Sanger sequencing and its applications
		Microarrays
		Readings
		Metzger, M. (2010). Sequencing technologies —the next generation. Nature Reviews 11, p31-46.
		Van Dijk E. et.al. (2014) Ten years of next-generation sequencing technology. Trends in Genetics, Vol. 30, p.418-426.
		Kayser, M. de Knijff, P. Improving human forensics through advances in genetics, genomics and molecular biology. Nature Reviews Genetics. Mar 2011, Vol. 12 Issue 3, p179-192
		Zaaijer S. et.al. (2017) Rapid re-identification of human samples using portable DNA sequencing. eLife 6:e27798
		Check Canvas webpage
9	03/24/20	Massively Parallel Sequencing
		Readings
		Check Canvas webpage

10	03/31/20	NO Lecture Spring Recess
11	04/07/20	Forensic epigenetics
		Forensic DNA intelligence
		Readings
		Check Canvas webpage
12	04/14/20	Forensic molecular phenotyping
		Biogeographic ancestry prediction
		Readings
		Check Canvas webpage
13	04/21/20	Investigative genealogy: Long-range familial searching using public DNA databases
		Readings
		Check Canvas webpage
14	04/28/20	Course summary
		Students presentations
15	05/05/20	Students presentations
		Discussion: what's next in forensic DNA analysis?
16	05/20/20	Final exam
	9:45 am – 12:00 pm	