SJSU | DEPARTMENT OF JUSTICE STUDIES

FS-169 Sec 05
Senior Seminar in Forensic Science
Fall 2020

Instructor:	Dr. Mark Barash
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Office Hours:	Tuesdays: 10:30am to 12:00pm; Wednesdays: 12:30pm to 1:30pm; **Online only** (Zoom): https://sjsu.zoom.us/j/6339297996
Class Days/Time:	**Wednesday 9:00am – 11:30pm Online (via Zoom). Please register in advance: https://sjsu.zoom.us/meeting/register/tJ0ucumurDkjHd3FCZ2dDKup7hZ_ZqNeexrl**
Canvas Course:	https://sjsu.instructure.com/courses/1373501
Prerequisites:	Senior standing in final semester; Justice Studies or Forensic Science major; JS 100W and JS 114 with a "C or better"; Department consent. Note: A grade of "C" or better is required for Justice Studies majors.
FS Library Liaison:	Nyle Monday: Nyle.Monday@sjsu.edu
FS Lib Guide:	http://libguides.sjsu.edu/content.php?pid=57768&sid=2450175
FS Program Website:	http://www.sjsu.edu/justicestudies/degrees/fs-program/

Course Description

This senior seminar course provides an in-depth study of a number of selected issues in forensic science through their analysis and discussion. In particular, students will focus on identifying issues presented in various journal publications, formulate sound arguments using their critical thinking skills, and articulate their conceptualizations of subject matters through group-lead discussions, research papers and digital media project on a relevant topic. Topics to be explored include: understanding capabilities and limitations of the forensic science, sources of potential error and its consequences in forensic and criminal justice context, application of the emerging forensic technologies and associated ethical and legislative considerations, principles and concepts relating to quality in forensic science and other. Topics covering development of professional skills, such as writing resumes and CV, networking, job search and preparing for an interview will be also discussed.

Note the following prerequisites:

- **Justice Studies Majors**: JS 100W and JS 114 or instructor consent,
- **Forensic Science Majors**: JS 100W, FS 161, FS 162, Biology 30, CHEM 1A and CHEM 1B
- **Both majors**: senior standing or by instructor consent, graduation application submitted and major form filled out and signed.

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Course Goals and Student Learning Objectives (CLO)

The overarching goal of this course is to encourage students developing a self-directed and proactive learning attitude and essentially transform the empirical knowledge they acquire into professional expertise and autonomy. These qualities would help students becoming more confident and independent individuals, which would positively impact their career and life in general.

Course Learning Objectives (CLO)

Upon successful completion of this course, students will be able to:

- **CLO1** Identify and analyze professional resources for forensic scientists.
- **CLO2** Undertake a critical analysis of contemporary problems relevant to forensic science.
- **CLO3** Integrate cumulating knowledge for completion of a formal research paper that (a) synthesizes relevant scholarly sources; (b) addresses relevant forensic science topic; (c) reflects professional formatting and writing standards.
- **CLO4** Present scholarly work to an audience of peers in engaging manner.
- **CLO5** Apply scientific (and otherwise rational) forms of reasoning, argumentation, research, and support in forming any particular worldview or position in the pursuit of 'justice' and addressing social problems in our communities/societies.
- **CLO6** Prepare for a professional career in forensic science by creating a clear and appealing resume, developing communication skills and identifying resources for job search and professional development.

Course Format

This senior seminar is designed with the structure, rigor, and spirit of a graduate level course. In a seminar, students meet regularly to report and discuss an area of research under the guidance of a course coordinator. The coordinator's role in this course is to guide your conversations, steer your thinking in intellectually sound directions, and to evaluate your work. The students should approach this course with the mentality of self-starters who know how to manage their time effectively and have the motivation of educating themselves independently. **Since participation is a key element in this class, I would advise not taking this course if you anticipate missing classes.**

Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally three hours per unit per week) for preparation, studying, completing assignments and other course related activities. More details about student workload can be found in University Policy S16-9.

The mode of instruction for this course is online only. Hence, reliable access to a computer and the internet will be required. Copies of course materials will be posted on Canvas, while some course materials may need to be accessed via internet links. You are responsible for regularly checking your e-mail and Canvas regarding announcements, reminders, and any additional course materials.

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Course Requirements and Assignments

Required Texts

- There is no dedicated textbook for this course.
- There are however other multiple resources required for this course, such as peer-reviewed papers, media articles and web sites. Links to required resources will be posted on Canvas. Check the site frequently.

Classroom Protocol

- Students are expected to: attend all class meetings, arrive on time, stay for the duration of the class period, complete all readings and assignments in accordance with the dates on the course schedule.
- Students are responsible for all missed notes, materials and announcements due to absence. You are encouraged to exchange contact information with your class mates and use the Canvas resources to collaborate and keep in touch.

Assignments addressing respective learning objectives

The course requirements consist of six assessment tasks:

1. Deliver one oral and one poster presentation during the course (25% total): CLO 1, 2, 4 & 5.
2. Discussion leadership (5%): CLO 1,2 &5.
3. Participation in weekly discussions (5%): CLO 1, 2 &5.
4. Write a final research paper (30%): CLO 1 – 3 & 5.
5. Create a digital media presentation of a research paper (30%): CLO 1 – 5.
6. Create a resume and cover letter. Identify jobsites and resources for networking (5%): CLO 1 & 6.

Total: 100%

Note: There is no final exam for this course. The assignments 5 and 6 considered the final assessment activity for this course.

Detailed information about assignments and grading rubrics

Assessment tasks 1-3: Oral and Poster Presentations (weight: 12.5% x2); Discussion lead (5%) and Participation in weekly discussions (5%).
These are individual tasks. Each student will be responsible for offering **two** in-class **presentations** based on weekly topics **(Assessment task 1)**: **one oral and one poster, both delivered electronically**. Students are to conduct research on a topic assigned on that day and present their findings to the class. Students must discuss with the class: (1) the thesis of the chosen topic, (2) background information on the chosen topic based on the reading materials; (3) additional/outside research directly related to the thesis/main argument/theme, (4) ethical concerns,

and (5) prepare up to 3 discussion questions. You must discover the main argument/thesis/theme of the assigned research topic and make a strong connection to what you will be presenting in class.

The presentation should be relatively short (between 10-15 minutes), but comprehensive and must include the following sections:

1. Introduction: Description of a specific topic assigned by the instructor, its importance and the primary thesis.
2. Literature review: concise and balanced coverage of the discussed topic, based on the relevant literature. This is the main part of your paper, which should provide an objective presentation of various opinions on the disputed topic, in terms of various pros and cons of the current approach, implications of their effectiveness/ineffectiveness, and suggestions about alternative solutions (if any). This critique should pull upon findings in the literature to support the presenter's point of view.
3. Conclusions.
4. References.

Following each presentation, students who have been assigned 'Discussion Leaders' should be prepared to pose questions to the class (5 questions will suffice) to facilitate class discussion **(Assessment task 2)**. The questions supposed to underscore critical themes or issues associated with the assigned readings and intended to facilitate the discussion for the day While the instructor will help to moderate discourse, students are largely responsible for engaging in inquiry and discussion.

Grading criteria

The presentations will be graded based on the level of competency and flow, knowledge of the subject, ability to engage the audience and conclusions. It is highly recommended that students practice their presentations several times (preferably in front of someone who will provide constructive and objective feedback). **The presenters will be required to submit their Power Point (*.ppt) file prior to in-class presentation.**

Each presentation will receive a grade ranging from 0 – 12.5 points based on the fulfillment of the above requirements. Please note that make-up presentations will not be allowed, except under extreme circumstances, which can be substantiated (documentation will be required).

The **discussion leaders** will receive a grade ranging from 0 – 5 points, based on their ability to facilitate the discussion and engage the students **(Assessment task 2)**. The students will receive a grade ranging from 0 – 5 points, based on their **pro-active participation** in discussion **(Assessment task 3)**.

Presentation tips

Here is some advice to help you with the preparation of your presentation:
- Put a title at the top of each slide that states the slide's main point.
- Use large, easy-to-read font (e.g., Arial) throughout; 18 point minimum, 24 point recommended, 36 point or larger for a title

- Don't use too much text. Bullet points are generally better than full sentences or paragraphs. Try to avoid reading the slide to the audience.
- Don't forget to include references, either as a footnote on each slide or on the final slide.
- Use primary colors for the font and background when possible, especially red and blue. Don't use colors which are hard to read (e.g. too bright/dark).
- Speak loudly and clearly. Face forward as much as possible. Try not to rush.
- Practice what you will say about each slide so that you present the essential points as clearly and efficiently as possible. Practice your presentation with a timer to make sure that you are under 15 minutes.

Assessment task 4: Research paper (weight: 30%)

This is an <u>individual task</u>. The students will be required to write **one** 7-10 page paper (not including the cover page and references) analyzing a forensic science – related topic/controversy. The paper should be written in a 12-point font (e.g. Times New Roman, Arial, etc.), with 1.5-point space lines in a paragraph. The papers should be submitted via Canvas following Turnitin check at their respective due dates (to be announced online).

In their paper, students should include the following sections:

1) Introduction describing paper's topic and its relevance.
2) Review of the relevant literature on the topic under discussion (minimum of five scholarly sources), providing different opinions, especially if the topic is considered controversial.
3) Summary of findings and suggestions for alternative solutions.
4) Accurate citation of all the references used, according to either CSE or APA formatting requirements.

Assistance with CSE formatting style and APA can be found at:
https://writing.wisc.edu/handbook/documentation/doccse/nameyear/ and
http://owl.english.purdue.edu/owl/resource/560/01/ respectively.

Using an automatic citation software (e.g. Endnote, Refworks, Mendeley etc.) is strongly encouraged. Refworks license is free to all SJSU students, while Mendeley (and other similar software) is freely distributed. Links to relevant citation resources will be available on Canvas. A special 'academic writing workshop' session will be provided to you during the course.

Students can choose a topic based on their own research interests or from a proposed list. No paper however will be accepted without previous communication and approval by the instructor. The purpose of the paper is not only to test your knowledge on a specific topic, but more so to facilitate critical and independent thinking.

<u>Students are prohibited from writing on a topic that has been used for previous courses, or currently being used for another course</u>. Any attempt to violate this requirement will constitute a violation of the Academic Integrity policy and result in an automatic "F" for the paper, which ultimately will result in failing the course.

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Grading Criteria:

In order to demonstrate comprehension of the course material, one must be able to write in a clear and effective manner. Always carefully proofread your assignments before submitting them.

Students will be graded on their ability to synthesize course materials and provide a critical analysis of the course content. Specifically, written assignments will be graded primarily on the scientific content (50%), relevance (30%), clear annotation (15%) and professional layout (5%). However, poor writing mechanics and incorrect formatting will result in a moderate point deduction.

Due date: submission dates for this assignment will be announced during semester. Late submissions **will not be accepted** unless a valid, documented, and verifiable reason is provided.

Assessment task 5: Digital media project (weight: 30%)

This is a group task. This assessment task is about understanding various scientific concepts covered in this course, summarizing the material in a clear and succinct way and efficient communication of a forensic science topic.

Students will be required to allocate a topic from a list provided by instructor or propose their own topic of interest related to a forensic science controversy/dilemma. The topic will need to be presented in a form of digital media (e.g. video, animation, podcast or blended media format), according to digital media principles discussed in class. The length of the media file should be between 3 to 5 minutes. The file should be uploaded into one of the free online platforms, such as Youtube or Vimeo and a link submitted through Canvas prior to its presentation in class. Digital media training will be provided to you with a lecture on digital media principles covering layout design, color theory, fonts, use of images and basic video techniques. Additional online modules will be available to provide assistance with digital media creation.

You will need to contact your classmates and create a team of 3-4 students. Each team will have their own Canvas-integrated homepage where the team members can collaborate on their project (more details to be discussed in class).

The digital media project will benefit you in various ways such as studying the course content in a non-trivial and engaging form, learning valuable software tools and incorporating digital media principles for more effective learning, communication and engagement, as well as encouraging creativity. The digital media project is an authentic task that resembles real life scenarios, which you will likely experience in your professional career such as communicating scientific findings to a jury or a police investigator.

This project is not about using expensive equipment or sophisticated technology. It is about learning to tell a story in a clear, succinct and visually appealing manner, using digital media principles to ensure the message will be conveyed efficiently. The digital "props" are not to be ignored of course, as they could be very helpful to deliver your ideas. Nonetheless, your media project will be primarily judged on its content and how well you communicate it to the audience, and less on how "fancy" or "sophisticated" your animations are.

Remember, this is a group task that requires proactive engagement and effective teamwork. At the end of your project, each student will have to provide a brief feedback on group's dynamics including assessment of each

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member contribution. Your peers feedback will be incorporated in the final grade (e.g. a team member who hasn't contributed to the task may receive an appropriate mark for this assignment, such as 0).

Due date: This task will be due on the last two classes of the course, with potential adjustments based on students' progress. Further details will be announced on Canvas.

Grading criteria

You will be assessed on the content of your project report and application of digital media principles. Assessment feedback will be provided in the form of marks and comments. Assessment criteria include:

- Disciplinary knowledge (35%) – 10.5 points
  - Accuracy and completeness of information
  - Comprehensive research using available resources (textbooks, peer-reviewed papers)
- Professional skills (35%) – 10.5 points
  - Understanding and explanation of underlying scientific principles of the topic
- Communication skills (15%) – 4.5 points
  - Presentation of information (proper usage of professional language, lack of grammatical mistakes, well-structured and easy-to-comprehend presentation)
  - Use of digital media principles such as layout design, fonts, color, graphics and video principles to enhance communication of the topic
- Enquiry and innovation (15%) – 4.5 points
  - Creativity (how presentation approach enhances topic)
  - Presentation uses efficient ways to engage the audience

Overall assessment of this task will be performed jointly by students (20% of the total mark) and course coordinator (80% of the total mark), accounting to the 30% of the final course grade.

Assessment task 6: Creating a resume and a cover letter (weight: 5%)

The students will be required to create a resume and a cover letter as an essential step in their professional career. They will also need to identify relevant jobsites, professional membership organizations and resources for networking. More details will be provided in class.

Extra Credit Opportunities

Extra credit opportunities may be available throughout the semester and may be used to cumulatively augment your final grade up to 5% total. These opportunities will also be announced on Canvas and required documentation would need to be uploaded and/or submitted online. You can choose any of the activities listed below:

1. Complete a short professional development course in forensic science (in any forensic discipline) offered by the National Institute of Justice marked "extra credit" in the Forensic Science module and submit your certificate of completion by 12/02/2020. Successful completion of this assessment task will add 2% to the final grade.

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2. Students can write a research paper about their future career that is of interest to the student. The paper should be in either in CSE or APA format and contain an introduction, a body of 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). Successful completion of this assessment task will add 1% to the final grade.

3. Read and critique a current journal article (within the last 2 years) from any forensic science discipline. Discuss its relevance to forensic science and how it contributes to the advancement in the field. The paper will be in either CSE or APA format and contain an introduction, the body of research, and a conclusion. The length of a paper should be between 3 and 4 standard pages in 1.5 font. The paper must contain in-text citations from at least three peer-reviewed sources. Successful completion of this assessment task will add 2% to the final grade.

4. Additional extra credit opportunities will be announced in class and/or on Canvas.

Please note, the maximum cumulative bonus grade you can get is 5 points (if you complete all three extra-credit assignments).

Late Work and Make Ups

Please 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 offline 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, please contact me at the earliest convenience and I will gladly do my best 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, contact me for clarification.

Overall grading scale for all assignments

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

Note: **A grade of C or better is required for all Justice Studies major and minor coursework, and desirable for students enrolled in the Forensic Science majors and/or minor.**

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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 more effectively identify and ameliorate injustice in their personal, professional and civic lives.

Student Resources

Forensic Science Student Group (FSS)

SJSU 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 extracurricular 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 sjsu.fss@gmail.com for more information, or to get an application for membership.

Student Technology Resources

A wide variety of audio-visual equipment is available for student loaning from Media Services located in IRC 112. Please check online for additional information.

ACCESS Success Center

The Academic Counseling Center for Excellence in the Social Sciences (ACCESS) provides General Education advising for undergraduate students majoring or intending to major in any of the departments in the College of Social Sciences (CoSS). ACCESS Academic Advisors are committed to helping you develop a clear path to graduation and supporting your academic success. You can schedule an appointment and find more information at sjsu.edu/access.

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/

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Tentative Course Schedule

Notes about course schedule: The order of the discussed topics and their focus may change according to students' progress and/or any unforeseen circumstances. I reserve the right to change the schedule including the due dates, but only in a manner that benefits students (e.g., due dates can only be pushed back, never moved forward).

Week	Date	Topics	Assignments & Deadlines
1	08/19/2020	Course introduction. Overview of assignments and expectations.	Reading for today: Syllabus
2	08/26/2020	Crash course in forensic science. Topic for reading and discussion: "Sources of error in forensic science".	Check the relevant Module on Canvas. Read PCAST report (pages 21-65; 151-153).
3	09/02/2020	Topics for reading and discussion: "Is forensic science truly reliable or is it junk science"? "Forensic science in the eyes of a judge & jury". Brief overview of forensic DNA analysis: contemporary & emerging technologies; ethical and legal considerations (by instructor).	Read PCAST report (pages 67-118; 128-130). Weekly presentations. Check the relevant Module on Canvas for additional materials.
4	09/09/2020	Topics for reading and discussion: "Sources of bias in FS"; "Forensic science fallacies e.g. prosecutor's fallacy".	Weekly presentations. Check the relevant Module on Canvas.
5	09/16/2020	Scientific research and academic writing workshop. Discussing research paper and digital media presentation requirements.	Check the relevant Module on Canvas.
6	09/23/2020	Lecture on digital media principals. "Wrongful convictions and exonerations". "Implications of secondary and tertiary DNA transfer"; Low–template DNA testing"	Weekly presentations. Check the relevant Module on Canvas. Swap CV and cover letter with your peers for feedback.

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7	09/30/2020	"DNA databases, pros and cons". "Familial and partial profile searches".	Weekly presentations. **Last day to allocate a research topic for your paper.** Check the relevant Module on Canvas.	
8	10/07/2020	"Forensic molecular phenotyping: ethical and criminal justice issues". "Forensic genealogy and extended familial searches: ethical and criminal justice issues".	Weekly presentations. Check the relevant Module on Canvas.	
9	10/14/2020	"Falsification and authentication of forensic evidence"; "Gene editing: ethical and legal concerns".	Weekly presentations. Check the relevant Module on Canvas. **Last day to choose a topic for your digital media project.**	
10	10/21/2020	Guest speaker	Check the relevant Module on Canvas.	
11	10/28/2020	Career prep workshop. **Brainstorming and writing session. Peer – review of research papers (group activity).**	**Swap your research papers for feedback.** Continue working on research paper and digital media presentation.	
12	11/04/2020	Guest speaker	Continue working on research paper and digital media presentation.	
13	11/11/2020	**Veteran's day – No instruction**	**Finalize your research paper. Submit a copy of your CV/resume and cover letter.**	
14	11/18/2020	Guest speaker	**Due date for research paper submission.** **Work on your digital media project.**	
15	11/25/2020	**Thanksgiving – No instruction**	**Finalize the digital media project.**	
16	12/02/2020	**Digital media presentations and discussions.**	**Due date to submit your digital media project.**	
Main exam/alternative activity	Thursday, 12/10. 17:15-19:30	**Digital media presentations and discussions. Course summary.**	**Extra credit assignments due date.**	