

San José State University
Department of Justice Studies
Special Topics in Forensic Science - DNA and Crime (Seminar)
FS 160: Course Number 27156, Section 02, Spring 2021

Course Description

Module 2 Learning Outcomes : See MLOs listed with corresponding assignments in the schedule

1. MO 2.1: Summarize the differences between RFLP and PCR (CLO1)
2. MO 2.2: Describe five advantageous characteristics of STRs (CLO 1)
3. MO 2.3: Identify three characteristics you may observe in an STR result that indicates a mixture of 2 individuals
4. MO 2.4: Predict the outcome of the application of DNA STR testing under different conditions (low template, degradation, inhibition, contamination -(CLO2, 3 and 4)
5. MO 2.5a: Describe 3 characteristics to distinguish a true DNA STR allele from an artifact (CLO 4 and 5)
6. MO 2.5b: Calculate the probability of a specific genotype for a single genetic marker
7. MO 2.6: Define next generation sequencing and name 3 applications of NGS (CLO 4 and

Other Readings

Forensic DNA Analysis. Rudin, N. and K. Inman. 2nd Edition. 2001. ISBN: 0849302331 Publisher: CRC Press; 2nd edition (December 21, 2001) 312 pp.

Advanced Topics in Forensic DNA Typing Methodology. John Butler 2012. ISBN 978012374513-2. Academic Press (http://220.163.113.53/G2S/eWebEditor/uploadfile/20130416175005_315599781486.pdf)

Forensic DNA Typing: Biology and Technology Behind STR Markers John Butler PhD. 2005. ISBN: 0-12-147952-8, 688pp. Academic Press

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.

These will include:

1. **DNA training courses:** <https://nij.ojp.gov/nij-hosted-online-training-courses>
2. **President's Council of Advisors on Science and Technology** (2016) Forensic Science in Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods.
https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/PCAST/pcast_forensic_science_report_final.pdf
3. National Academy of Sciences. (2009) Strengthening Forensic Sciences in the US: A Path Forward. <https://www.ncjrs.gov/pdffiles1/nij/grants/228091.pdf>
4. **NIST STRBase:**
<https://strbase.nist.gov//index.htm>
5. The Organization of Scientific Area Committees for

8. Genetic Witness: Forensic Uses of DNA Testing, Office of Technology Assessment; <https://ota.fas.org/reports/9021.pdf>
9. Glossary of Forensic DNA terminology: <https://strbase.nist.gov/training/Glossary-Forensic-DNA-Terms.pdf>
Supplementary Texts (Optional)- Course material may include citations from the following:
10. Genetic Testimony. A guide to forensic DNA profiling. Spencer, C. 2004. ISBN 0-13-142338-X. Pearson Education Inc. Upper Saddle River, NJ 07458. 37 pp.
11. Criminalistics: An Introduction to Forensic Science (College Version), 9/E, Copyright 2007, ISBN-0132216558, RE. Saferstein, Ph.D, Prentice Hall, 672pp.
<http://vig.prenhall.com/catalog/academic/product/0,1144,0132216558,00.html>
12. Techniques of Crime Scene Investigation, Seventh Edition. 2004 Barry Fisher. ISBN084931691X, 544 pages. CRC Press
13. The Evaluation of Forensic DNA Evidence Committee on DNA Forensic Science: An Update, National Research Council 272 pages, 6 x 9, 1996, ISBN 0-309-05395-1National Academies Press- Available on-line for free-

Additional assignments will be required as well as short answer quizzes.

Two scheduled quizzes will also be delivered on line March 12th and May 14th . Assignments (including journal articles and book chapter readings as well as activities) will also be required for completion on line, on time (see the end of this syllabus for assigned readings and URLs).

Grading:

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| Quizzes/Activities | 100 points; |
| Midterm Exam | 200 points; |
| Final exam | 200 points; |
| Total required | 500 points. |

Extra Credit:

A total of 10 points may be granted for additional extra credit small group assignments and other assignments during the semester. Each assignment will be worth 1-2 points each. These extra credit points may be used to augment your final point total.

Grading Policy

Make-up exams will not generally be permitted. However, under extraordinary circumstances, with proper documentation and approval by the instructor, a 20 page single-spaced term paper of an instructor assigned topic, may substitute for 1 exam (with 50 recent journal citations).

On line late grading policies

Each minute that you are late in emailing any assignment including, quizzes, assignments and exams (midterm and final) back, 10% will be deducted from your grade, so for example, if you are late by 1 minute, the highest grade you can achieve would be 90%. If you are 2 minutes late, the highest grade you can achieve would be 80% etc.

From -To Grade

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|-------------|---------|
| 483.5-500 | A plus |
| 467-483.4 | A |
| 450-466.9 | A minus |
| 433.5-449.9 | B plus |
| 417-433.4 | B |
| 400-416.9 | B minus |
| 383.5- | |

FS 160 DNA and Crime, Spring 2021 Course Schedule and Assignments



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