2024/2025 Course Guide
Forensic Science
Proviso Mathematics and Science Academy

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Office Hours by Appointment
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- ***Course Description:***

In Forensic Science we present the philosophical, rational, and practical framework that supports a case investigation. We outline the unifying principles of forensic science, discuss the rooting of Forensic scientist might consider during an investigation. We also discuss the experimental methods and some of the ways in which a forensic analysis can be confounded. This class is not an overview of the disciplines that comprise the Forensic Science, but rather the umbrella under which the practical work resides. Students will work through interactive exercises and discuss various scenarios with the instructors and their fellow classmates in a discussion forum. The explanation and clarification of assumptions and inferences will be emphasized. At the end of the class, students will take a final examination in which they will be asked to demonstrate their knowledge of specific information that has been presented and also to extend that knowledge in considering questions about specific cases.

Schedule for 2024/2025

August:
- ***Introduction to Course***
- ***Chapter 1: Introduction to Forensic Science***

September:
- ***Chapter 2: The Crime Scene***
- ***Chapter 3: Physical Evidence***

October:
- ***Chapter 4: Physical Properties: Glass and Soil***
- ***Chapter 5: Organic Analysis***

November:
- ***Chapter 6: Inorganic Analysis***
- ***Chapter 7: The Microscope***

December:
- ***Chapter 8: Hair, Fiber and Paint***
- ***Special Topics in Forensics: TBA***
- ***Review for Fall Final Exam***

January:
- ***Chapter 9: Drugs***
- ***Chapter 10: Forensic Toxicology***

February:

- *Chapter 11: Forensic Aspects to Fire and Explosion Investigations*
- *Chapter 12: Forensic Serology*

March:

- *Chapter 13: DNA*
- *Chapter 14: Fingerprints*

April:

- *Chapter 15: Firearms, Tool Marks and Other Impressions*
- *Chapter 16: Document and Voice Examination*

May:

- *Special Topics in Forensics*
- *Review for Spring Exam*

Course Objectives Overview

This course focuses on the following learning outcomes:

Learning Outcome A: Develop an understanding and appreciation for the scope of forensic science.
Learning Outcome B: Develop an understanding of the scientific method in the context of the law.
Learning Outcome C: Develop an understanding of the particulars for each forensic sub-discipline.
Learning Outcome D: Demonstrate appropriate research, evaluation and presentation skills.
Upon completion of this course the student should:

Objective A:
The student will develop an understanding and appreciation for the scope of forensic science.
Learning Outcomes: The student will:
• A-1 Develop a definition of forensic science as a whole, and for each sub-discipline reviewed.
• A-2 Review the history and development of the forensic science sub-disciplines covered.
• A-3 List the services performed by a crime investigators, crime laboratories and medical examiners.
• A-4 Discuss the role and functions of a forensic scientist.
• A-5 Familiarize oneself with the organization of a crime laboratory Assessment Method: examination, quiz

Objective B:
Students will develop an understanding of the scientific method in the context of the law.
Learning Outcomes: The student will:
• B-1 Review the Scientific Method, including how observation, explanation and testing fit into this scheme.
• B-2 Evaluate each sub-discipline as to how scientific method arguments are used to explain evidence.
• B-3 Demonstrate an understanding of the scope and current limits of each sub-discipline covered.

• B-4 Review, Discuss and Evaluate current scientific research in forensic science
Assessment Method: examination, quiz

Objective C:
Students will develop an understanding of the particulars for each forensic sub-discipline.
Learning Outcomes: The student will:
• C-1 Discuss the history of the sub-discipline.
• C-2 Review fundamental principles for each sub-discipline reviewed.
• C-3 Review necessary training and education for each sub-discipline reviewed.
• C-4 Review methods/techniques employed by each sub-discipline reviewed.

Assessment Method:

Abstracts Participation
Attendance Peer Evaluation
Bell-Ringer / Exit Slips
Capstone Project Portfolio
Case Study Portfolio Lab Performance
Exams Presentations
Group Projects Professional Evaluation
Homework Assignments Quizzes
Internet Research project
Journaling Lab Performance
Oral/written review of literature
Other:

Grading Scale/Distribution:
A = 92%, B = 82-91%, C = 72-81%, D = 62-71%, F = 62% or less

Examinations: There are four exams. The first three are focused on the material since the last examination, but the final examination is cumulative.

General Policies

- *Student e-mail Etiquette: All email correspondence to the instructor will be conducted in a professional manner.*
- *Address the recipient appropriately, using proper spelling, grammar, and punctuation,*
- *Close with your full name, day of week and time of class you meet (Example: Bob Smith, 12:20pm to 1:45pm)*

Academic Honesty:

"To foster a climate of trust and high standards of academic achievement, The PMSA Science and Mathematics Departments are committed to cultivating academic integrity and expects students to exhibit the highest standards of honor in their scholastic endeavors. Academic integrity is essential to the success of PMSA's mission. As members of the academic community, our foremost interest is toward achieving noble educational goals and our foremost responsibility is to ensure that academic honesty prevails" Any instance of plagiarism, cheating, dishonesty or the facilitation thereof will result in a grade of 0 (zero points) for the assignment. Second offenses will be reported to the Department Head, Principal and students will fail the course (grade of F). Please refer to the PMSA student guide for academic integrity.

Attendance:

Students are expected to be present for every meeting of the classes in which they are enrolled. Only the instructor can excuse a student from a course requirement or responsibility. When conflicts or absences can be anticipated, the student should inform the instructor of the situation as far in advance as possible. For unanticipated or emergency absences when advance notification to an instructor is not possible, the student should contact the instructor as soon as possible by email, or by contacting the main office.