Forensic Biology

5 credits - Level: I
Grades: 11-12
Prerequisites: Minimum grade of 70% in Biology Level 1 and Chemistry Level 1 (or a minimum grade of 90% in the Level II course of either).

This course is laboratory oriented, and designed to give the student an introduction to the science of forensics. Topics of study include molecular biology, DNA analysis (electrophoresis/PCR) as it relates to crime/paternity, anthropology, comparative skeletal anatomy, blood composition and behavior, entomology as it relates to crime solving, genetics (mitochondrial DSNA analysis), odontology, and pathology.

PROFICIENCIES:

Upon completion of the course, students will be able to:

1. List and describe steps of the scientific method
2. Analyze data and make conclusions based on laboratory observations
3. Determine blood types and composition
4. Investigate relationships between genetics and blood
5. Conduct blood splatter and angle analysis
6. Analyze blood drop direction, distance, and velocity
7. Determine the composition and genetics of semen and of urine
8. Investigate hair patterns and chemistry
9. Identify hair, fabric, and fiber specimens
10. Understand the process of ossification
11. Determine how bone length measurements are made
12. Investigate bones as evidence from the past
13. Realize that the fingerprint is unique and constant to the individual
14. Perform fingerprint testing
15. Perform shoe/footprint testing
16. Define tire prints based on width and direction
17. Understand the structure of DNA
18. Understand the concept of restriction DNA analysis
19. Be able to apply data collected using learned techniques to attempt to solve a crime