FORENSIC SCIENCE SYLLABUS

Forensic Science is a fun, interactive second year course that is designed to use the application of science to connect violations of the law to a specific criminal, criminal act or behavior, and the victim. Students will learn the procedures and terminology related to the search for and examination of physical evidence. They will engage in opportunities to observe evidence in a laboratory environment and distinguish between the different types of evidence that can typically be found at crime scenes. Using scientific methods and laboratory techniques, students will analyze trace evidence (hair, fibers, soil, glass), DNA, blood, blood stain patterns, estimate time of death and create a biological profile using skeletal anatomy and biologic decomposition, bullet and tool mark impressions, fingerprints, and toxicological evidence and drug profiles. Additionally, students will learn the historical development of forensic science, those who were involved in its development, and related legal aspects. Students will engage in lectures, labs, case studies, online activities, and simulations. Writing will be an important component of this class. Students will earn a science credit by taking this course.

TEACHER INFORMATION

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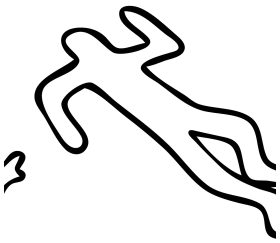
COURSE INFORMATION

Prerequisite: Biology plus IPC or Chemistry and Law Enforcement I

Intro to Forensic Science (17 Days)

Students will be introduced to the scientific method and the fundamentals of scientific experiment and analysis. They will learn basic laboratory techniques to prepare them for the hands-on labs that are a requirement of this course. Students will be introduced to some of the fundamental figures and events that shaped the course of forensic science. They will also learn about the history and components of a crime lab and the professionals that are employed in those crime lab units.



Crime Scene Investigation (18 days)

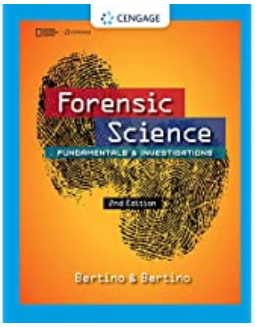
Students will be introduced to the processes and techniques used at a crime scene, such as how to search the scene, photograph the scene and collect evidence. This unit will also discuss the different types of evidence that could be found at a crime scene, how the courtroom and legal processes affect evidence collection and the role expert witnesses play in the courtroom. Finally, students will participate in a mock crime scene investigation and work with a team to solve the crime.

Forensic Evidence (86 days)

This unit focuses on the different types of evidence (hair, fiber, fingerprints and other impressions, ballistics, DNA, blood, handwriting and arson) that can be found at a crime scene. Biological evidence will include DNA, blood, hair, and fiber. Within the area of blood, students will learn that blood can be typed for class evidence as well as its DNA analyzed for individual evidence. Additionally, blood spatter will be examined for crime scene reconstruction. Hair and Fiber evidence will be analyzed microscopically to determine species or origin. Ballistics focuses on identification of a firearm and gunshot residue as well as how to determine the location a bullet came from. Students will learn the art of handwriting analysis and determine how to collect and analyze evidence left by tool marks or other impressions.

Death and the Human Body (46 days)

Students will learn about the role that anthropology, toxicology, entomology and pathology play in determining manner and cause of death. They will use applications of skeletal biology and archaeological methods towards the identification and cause of death of skeletal remains, as well as the recovery of remains using archaeological techniques. Entomology will be introduced as a method of determining post-mortem interval. They will understand the system in which drugs are classified as well as what properties influence the legality of different substances. Additionally, students will learn about toxicity, how it is measured, and the calculations required to determine lethal dose. At the end of this unit, students will use the skills that they have practiced over the course of the year to solve a crime.



Course Textbook

We will be using the second (2nd) edition of Bertino & Bertino's Forensic Science: Fundamentals & Investigations textbook. Students will have access to an electronic version online from any location. In general, this is an excellent text and covers all the curriculum covered in this course. It is also an excellent source for additional resources such as case studies and hands-on activities.