



FORENSIC SCIENCE

Thursdays, January 28-April 29 (no class February 18 or April 8; 12 weeks)

9:30-10:30am

Ages 11-14

In this course, students use scientific methods (biology, chemistry, and physics) to answer questions related to crimes and law enforcement investigations. Students learn proper collection, preservation and analysis of various types of evidence.

Instructor: Corinne Zelig, BSc

Location: Online

Course fee: \$220 OR \$20/lab

10% sibling discount

LAB SCHEDULE

Forensic Science and Evidence Gathering – Thursday, January 28

Students are introduced to the science of forensics, learn about proper data gathering, evidence collection, and chain of custody in crime scene investigations, and evaluate the testimonial evidence of witnesses.

Fingerprint Analysis – Thursday, February 4

This week we study the biology of fingerprints and history of fingerprint analysis, learn how fingerprint evidence is left at a scene, practice powder and chemical methods of recovering fingerprint evidence, and analyze fingerprint data.

Blood Analysis – Thursday, February 11

We study blood this week. After reviewing the components of our blood and viscosity of liquids, we learn the chemistry of detecting blood at a crime scene, and create life-like fake blood to study the physics of spatter.

Blood Typing – Thursday, February 25

Continuing with blood evidence, this week we study blood types and how blood is characterized, learn how our immune response can assist with eliminating potential suspects, and learn how to analyze blood samples.

DNA Analysis – Thursday, March 4

Students review the structure and function of DNA, learn how scientists collect and extract DNA, and investigate different DNA technologies used to analyze DNA (sequences, fragments, STRs, mtDNA).

Hair and Fiber Analysis – Thursday, March 11

In this lab, we learn to differentiate types of hair and fiber that could be trace evidence left at a crime scene. Students compare human and animal hair types, as well as natural and synthetic fibers using proper microscopic methods.

Forensic Entomology – Thursday, March 18

This week we study how insect life cycles (and other ecological information) can assist in determining the location and chronology of a crime, investigate stages of decomposition and learn how environment influences the decomposition process.

Handwriting Analysis – Thursday, March 25

Students study forgery and handwriting analysis as they look for nuances in handwriting style, match suspect writing with evidence, reveal writing impressions and, observe difficulties in foraging a signature.

Weapon Identification – Thursday, April 1

Students use ballistics gel to test markings of several potential weapons to determine the weapon used in the crime, and measure the angle of entry to gain insight on the size of the suspect and manner in which an assault took place.

Powder Analysis – Thursday, April 15

We use chemical analysis and observation to identify unknown white powders to model the analysis of poisons or drugs that may be found at a crime scene.

Impressions and Gait Analysis – Thursday, April 22

We study footprints, tire marks, and bite marks to determine how this evidence can be used to link a suspect to a crime scene. In addition, we analyze footprints and walking patterns to determine the height of the person who made them.

Crime Scene Investigation – Thursday, April 29

Using the skills and techniques they learned this semester, students solve a crime and present their evidence. Once the case is solved, students create their own crime scene scenario.