

**Forensics in the Classroom
Crime Scene Processes & Field Skills – Phase I**

Daily Schedule: 8 hours/day

Day 1:

Photography Concepts

- Aperture, Shutter Speed, ISO
- Use of Light, Low Light
- Progression Photographs

Sketching

- Survey Methods
- Data Collection
- Rough & Finished Sketches

Crime Scene Methodology

- Evidence Collection
- Applicable Laws
- Inherent Risks and Hazards
- Sequence of Work

Day 2:

Collecting Inked Fingerprints

- 10 Print Card
- Palm
- Major Case Prints

Fingerprint Comparison

- Methodology
- Comparison Tools

Fingerprint Processing

- Cyanoacrylate Ester
- Graphite Powder
- Magnetic Powder

Day 3:

Bloodstain Pattern Analysis

- Terminology / Pattern Recognition
- Determining Angle of Impact
- Determining Area of Origin of Impact Patterns
- Using blood enhancement techniques (ex. Luminol, BLUESTAR)

Day 1

Time: 8 hours

TEKS Alignment: Forensic Science, §130.339(c)(6). The student recognizes the procedures of evidence collection while maintaining the integrity of a crime scene.

Learning objectives / Purpose:

- (A) Compare and contrast the roles of forensic scientists and crime scene investigators;
- (B) Demonstrate the ability to work as a member of a team;
- (C) Conduct a systematic search of a simulated crime scene for physical evidence following crime scene search patterns such as spiral, line, grid, and strip;
- (D) Apply knowledge of the elements of criminal law that guide search and seizure of persons, property, and evidence;
- (E) Describe the elements of a crime scene sketch such as measurements, compass directions, scale of proportion, legend-key, and title;
- (F) Develop a crime scene sketch using coordinates/measurements from fixed points;
- (G) Outline the chain of custody procedure for evidence discovered in a crime scene; and
- (H) Demonstrate proper techniques for collecting, packaging, and preserving physical evidence found at a crime scene.

Overview of the Activities:

Participant will perform hands-on activities that will include the following:

- Taking progression level photographs
- Collecting measurements and generating a rough sketch
- Properly collect items of evidence and explain chain of custody

Participants will practice taking crime scene progression photographs, adjusting various camera settings to achieve optimum lighting and exposure. They will use various measuring methods to collect data and generate a crime scene sketch. Participants will also properly collect, package, log, and document evidence found in a crime scene.

Day 2

Time: 8 hours

TEKS Alignment: Forensic Science, §130.339(c)(8). The student analyzes impression evidence in forensic science.

Learning objectives / Purpose:

- (A) Compare the three major fingerprint patterns of arches, loops, and whorls and their respective subclasses;
- (B) Identify the minutiae of fingerprints, including bifurcations, ending ridges, dots, short ridges, and enclosures;
- (C) Distinguish among patent, plastic, and latent impressions;
- (D) Perform laboratory procedures for lifting latent prints on porous and nonporous objects using chemicals such as iodine, ninhydrin, silver nitrate, and cyanoacrylate resin;
- (E) Perform laboratory procedures for lifting latent prints on nonporous objects using fingerprint powders such as black powder and florescent powders;
- (F) Explain the Automated Fingerprint Identification System (AFIS) and describe the characteristics examined in the AFIS; and
- (G) Compare impression evidence collected at a simulated crime scene with the known impression.

Overview of the Activities:

Participants will perform hands-on activities that will include the following:

- Collecting ten print, palm, and major case prints
- Use various powder processing techniques to recover a latent fingerprint
- Compare unknown latent prints to known print cards

Participants will collect ten print cards of inked prints, palm prints, and major case prints. A comparison exercise will be conducted using unknown fingerprint exemplars against several known ten print cards. Participants will also use various powders and brushes to develop latent prints on non-porous surfaces.

Day 3

Time: 8 hours

TEKS Alignment: Forensic Science, §130.339(c)(9). The student analyzes blood spatter at a simulated crime scene.

Learning objectives / Purpose:

- (A) Analyze bloodstain patterns based on source, direction, and angle of trajectory; and
- (B) Explain the method of chemically isolating an invisible blood stain using reagents such as luminol.

Overview of the Activities:

Participants will perform hands-on activities that will include the following:

- Determine angle of impact using pre-made impact patterns
- Create a 3-dimensional demonstrative depicting the area of origin of an impact pattern
- Participate in the application and photography of Luminol or BLUESTAR

Participants will work in teams to calculate the area of origin on a pre-made impact pattern on poster board/butcher paper using scientific calculators and drawing tools. Participants will use the stringing method to determine the 3-dimensional area of origin in relation to the pre-made impact pattern. They will also participate in the proper application and photography of a blood enhancement reagent.