

Fingerprints: Detecting the Undetected

A Fingerprint Evidence Processing, Collection, and Photography Course

Presented by Cutting Edge Forensics, LLC

Syllabus:

Day One:

- **Introduction**
 - **Assignment 1: (Pre-Test) Individual knowledge on the proper processing techniques with physical examples**
- **Lecture: Fingerprints**
 - History on the methods for identification
 - Anatomy and Classification
 - Formation of Friction Ridge Skin
 - Patent, Plastic and Latent Prints
 - Latent Print Residue
 - Water-soluble and Water-insoluble
 - Sweat, Oils, Proteins, Amino Acids, Fatty Acids, other
 - Fingerprint and Palm Print Classification
 - Loops, Whorls, Arches
 - Minutiae
 - Henry Classification System
 - **Assignment 2: Fingerprint Match Exercise**
 - AFIS, IAFIS, Ten Print
 - Major Case Print collection methods
 - Taking quality prints and the importance of eliminations
 - Determining the quality of prints for comparison purposes
 - **Assignment 3: Taking Major Case Prints Practical**
- **Lecture: Surfaces: Porous, Non-Porous, Semi-Porous, and other**
 - Suitable Surfaces Latent Fingerprint Processing & Recovery Concepts
 - How to recognize evidence to be processed and the best areas to locate fingerprints
 - Special circumstances and how to navigate those issues
 - Transfer Factors: Age, Gender, Occupation
- **Lecture: Fingerprint Development Methods with powders and chemicals**
(With instructor demonstrations for each method using various substrates)
 - Personal Protective Equipment and Laboratory Safety
 - Chemical disposal
 - Surface recognition and sequence procedures for porous, non-porous, semi-porous, adhesive and other
 - Powders and their advantages and disadvantages
 - Regular

- Magnetic
- Colors
- Fluorescent
- Cyanoacrylate Fuming
- Fluorescent Dye Staining
- Using Casting Media to Process Pliable and Non-Conductive Surfaces
- Techniques for Enhancing Impressions in Blood
- Processing Adhesive Surfaces
- Techniques for Processing Special Surfaces
 - Waxy or Oily Surfaces
 - Wet Surfaces
- Dealing with difficult surfaces
- Lifting procedures and lift card completion
- **Assignment 4: Fingerprint Processing Practical**

Day Two:

- **Lecture: Proper packaging of fingerprint evidence**
- **Lecture: Photography**
 - Review on basic crime scene photography with an emphasis on documenting items of evidence before collection and processing
 - Macro photography techniques for fingerprint documentation
 - Benefits of oblique lighting and fill flash
 - **Assignment 5: Latent Evidence Photography with additional lab processing practical**
- **Lecture: Light Theory**
- **Lecture: Alternate Light Sources**

Day Three:

- **Lecture: Specialized Lighting Techniques using Alternate Light Sources for Evidence Photography**
 - **Assignment 6: Photographing previously processed evidence using ALS practical**
- **Lecture: Report Writing**
 - How to include processing methods and results into the final report
 - **Assignment 7: (Post-Test) Evaluation of Learned Skills: Evidence Processing and Documentation (Macro/ALS Photography) (Individual) Practical**

Various fingerprint processing techniques will be discussed with hands-on experience with the following:

Mechanical processes include:

- Black Fingerprint Powder
- Colored Fingerprint Powders
- Magnetic Fingerprint Powders
- Fluorescent Fingerprint Powders

- Use of Fingerprint Brushes
 - Fiberglass/Carbon Fiber
 - Feather
 - Camel Hair
 - Magnetic wand
- Lifting techniques
- Mikrosil and AccuTrans
- Major Case Prints

Chemical processes include:

Cyanoacrylate Fuming Methods

Cyanoacrylate Fuming Dye Stains

- Ardrox
- Basic Red
- Basic Yellow
- Rhodamine 6G

Cyanoacrylate Fuming combined with a fluorescent stain

Suspected Blood:

- Amido Black
- Acid Fuchsin (Hungarian Red)
- Acid Yellow 7

Adhesive and Wet Surfaces:

- Small Particle Reagent
- Wet Wop
- Crystal Violet

Other:

- Iodine
- DFO And 1,2 Indanedione
- Ninhydrin
- Thermal Ninhydrin
- Silver Nitrate
- Perma Blue