



Latent Print Section
Latent Print Processor Program of Instruction (POI)
Comparative & Analytical Division



1. Scope

- 1.1. This document defines the standards for the training program for Latent Print Processor, assigned to the Latent Print Section of the Houston Forensic Science Center (HFSC).
- 1.2. Upon successful completion of this training program, the Latent Print Processor will be technically proficient in the examination and processing of physical evidence for the detection of friction ridge impressions. In addition, they will be proficient at documenting their results, photographing, or lifting potential latent impressions, and writing reports of their findings. The Latent Print Processor will also be able to testify as an expert witness in a court of law, as required, to their findings and procedures used.
- 1.3. The full Program of Instruction (POI) for a Latent Print Processor is 1560 hrs. The total hours may be more or less than written and is dependent on the ability, skills, incentive of the trainee, and those situations which cannot be controlled, such as leave, sickness, or workload.
 - 1.3.1. When the training program is modified for a Trainee, the Section Manager, Technical Lead, or designee and the Quality Division must approve the modification.
 - 1.3.2. The training program is maintained by the Section Manager, Technical Lead, or designee and may not be altered without permission.

2. Responsibilities

2.1. Trainee Responsibilities

- 2.1.1. Trainees are examiners and/or trainees employed at HFSC after meeting the requirements of education, experience, and skills and who have passed the required background check and drug screen.
- 2.1.2. The trainee will be assigned to an authorized Latent Print Processor (LPP) or Latent Print Examiner (LPE) who will act as their primary trainer. Authorized staff members in the Latent Print Section may also provide training in various areas if needed.
 - 2.1.2.1. The Trainee must pass each written exam with a score of 80% or higher. The Trainee must pass the practical exam by obtaining 100% of expected results.
 - 2.1.2.2. The trainee will provide the primary trainer with weekly Training Logs.
 - 2.1.2.3. The trainee should accompany processors and/or examiners to court to gain exposure to expert testimony on latent prints.
 - 2.1.2.4. Any latent print training classes available during the training phase may be attended by the trainee.
 - 2.1.2.5. Trainee will maintain all training records in a format that will allow the Primary Trainer, Technical Lead, Quality, and designee's access. One Drive is the preferred method.

2.2. Primary Trainer Responsibilities

- 2.2.1. The primary trainer will provide Monthly Training Reports (MTR), when practicable, to the Section Manager and Technical Lead, and the Trainee's Supervisor. These reports should be completed within the first two weeks of the next month.



- 2.2.2. MTR's will be submitted in the form of a memorandum and will include the following information:
 - 2.2.2.1. The trainee's name and POI title.
 - 2.2.2.2. The modules covered during the month and if completed successfully.
 - 2.2.2.3. The modules scheduled for the next month.
 - 2.2.2.4. The trainee's progress through the POI and scheduled completion date (i.e. ahead or behind schedule, account for adjustments).
 - 2.2.2.5. Significant trainee accomplishments during the month.
 - 2.2.2.6. List of cases worked along with any critical notes
- 2.2.3. If a Trainee fails a written exam, the trainer will review with the trainee areas that were unsatisfactory. The trainer may retest by either written or oral examination. If the trainee can successfully articulate the answer, written or orally, credit will be given. If the trainee cannot successfully articulate the answer, remedial review sessions are required, and a new exam will be administered. Due to the tenuous nature of latent prints, a practical examination cannot be guaranteed to produce expected results. If a Trainee does not obtain 100% of expected results on the practical examination, the trainer will review the processing techniques used by the trainee to determine satisfaction. The trainer's reasoning for satisfaction must be documented. If the trainee does not obtain 100% of expected results and the trainer does not believe the processing techniques were used satisfactorily, remedial training is required, and a new exam will be administered.
- 2.2.4. After each written exam or practical exam, the Primary Trainer and/or designated module trainer will meet with the trainee to discuss the trainee's performance.
- 2.2.5. In the event the trainee fails to complete a chapter satisfactorily, the module will be reviewed with the trainee and the module will be repeated. If the trainee does not perform to an acceptable level on the retraining and retesting, a memorandum will be issued to the Trainee's supervisor and Section Manager or designee listing the deficiencies and remediation steps taken. The supervisor and Section Manager or designee will determine the course of action based on the primary trainer's recommendations.
- 2.2.6. Monthly update meetings will be scheduled by the Technical Lead to discuss the trainee's progress. When necessary, the Primary Trainer and module trainer will organize a meeting with the trainee's Supervisor, Technical Lead, and primary trainer to discuss any challenges or complications.

3. Overview of Program of Instruction

- 3.1. This module listing does not preclude the Primary Trainer from adding other pertinent topics as applicable and/or related to the science of fingerprints, forensic science, and the criminal justice system. The Section Manager, Technical Lead, or designee and the Quality Division must approve additional modules or topics prior to instruction or incorporation into the program.



- 3.2. Blocks of instruction may be segmented as necessary for optimal trainee understanding of the subjects and concepts presented. All courses will be supplemented by required readings, group discussion, independent and directed study, exercises, and/or research (or any combination thereof).
- 3.3. If a trainee has previous training and/or experience, they may be able to take a comprehensive assessment to be waived out of modules or portions of modules. HFSC administrative policies and procedures and Section SOPs will be covered during a trainee's onboarding process if they are not included as part of their modified training program.



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Module	Course of Instruction	Training (Hours)	Trainer	Date
1	<u>Introduction to Forensic Science</u>	120		
2	<u>Evidence Handling and Safety</u>	80		
3	<u>History of Fingerprint Identification</u>	80		
4	<u>Biological Aspects of Friction Ridge Skin</u>	120		
5	<u>Friction Ridge Pattern Recognition</u>	40		
6	<u>Friction Ridge Analysis</u>	320		
7	<u>Latent Print Development Techniques</u>	320		
8	<u>Latent Print Photography</u>	80		
9	<u>Digital Imaging of Latent Prints</u>	80		
10	<u>Competency Test</u>	40		
11	<u>Dependent Supervised Casework</u>	160		
12	<u>Court Testimony, Ethics, and Human Factors</u>	120		



Module 1: Introduction to Forensic Science

4. Training Objectives:

- 1.1. Familiarization with HFSC, the Quality Division, and the Latent Print Section.
- 1.2. Introduction to the HFSC Quality Manual as well as section specific Standard Operating Procedures.
- 1.3. Understanding of quality assurance/quality control guidelines at HFSC.
- 1.4. Understanding of ISO 17025:2017 and accreditation as it is applied to HFSC and the Latent Print Section.
- 1.5. Understanding of the way evidence flows through the laboratory.
- 1.6. Basic understanding of the way other disciplines at HFSC analyze evidence.
- 1.7. Understanding of best evidence handling practices to ensure the integrity of the evidence for all disciplines.
- 1.8. Understanding of how Multiple Disciplinary Requests (MDRs) are handled at HFSC.
- 1.9. Working knowledge of latent print development techniques that may interfere with laboratory analysis by other forensic disciplines.

Required Readings:	Trainee	Completion Date
HFSC administrative policies and procedures		
Quality Manual, Houston Forensic Science Center		
Security Manual, Houston Forensic Science Center		
Standard Operating Policies, Latent Print Section		
ISO 17025:2017 and supplemental documents		
Fingerprint Sourcebook, NIJ, Chapters 7, 8, and 12		
NIST Expert Working Group on Human Factors, Latent Print Examination and Human Factors, NIJ, 2012, Chapter 5		
Criminalistics, 12th edition, Saferstein, Chapters 1-4		
Training Exercises: None		



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Training Standards:	Trainee/Trainer	Completion Date
Self-study for required reading		
The Trainee must pass a written test on required reading		
Tour of other HFSC forensic disciplines		
Attend at least one MDR meeting		



Module 2: Evidence Handling and Safety

2. Training Objectives:

- 2.1. Obtain the knowledge and practical skills to properly handle, mark, package, and transport physical evidence, thereby preserving its integrity and evidentiary value.
- 2.2. Learn about the equipment used by the Latent Print Section.
- 2.3. Understanding of basic health and safety issues such as potential biological hazards, personal safety hazards posed by bloodborne pathogens, procedures for handling sharps, and the use of personal protective equipment (PPE).
- 2.4. Understanding of the importance of proper chain of custody.
- 2.5. Understanding of proper safety procedures when in Latent Print Processing.

Required Readings:	Trainee	Completion Date
Quality Manual, Section 7.4 Handling of Evidence		
Criminalistics, Saferstein, pgs. 47 and 48		
Health and Safety Manual, Houston Forensic Science Center		
Fingerprint Sourcebook, NIJ, Chapter 11		
Safety for the Forensic Identification Specialist, Masters Chapters 4-6, 8, 13, 14, 16-18, and 20		
Handling of Evidence & Documentation Procedures, HFSC SOP		

Training Exercises: None		
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Training Standards:	Trainee/Trainer	Completion Date
Self-study for required reading		
The Trainee must pass a written test on required reading		
Tour of Latent Print Processing with an understanding of safety issues		
Spend one week with Latent Print Processors to obtain a basic understanding of sequential processing.		



Module 3: History of Fingerprint Identification

3. Training Objectives

- 3.1. Gain knowledge on the background and history of the science of fingerprints.
- 3.2. Learn about historical people, events, and early methods of identification.
- 3.3. Learn the earliest recorded awareness of fingerprints.
- 3.4. Understanding of the scientific observations leading to modern fingerprint identification.
- 3.5. Learn the chronology of fingerprints throughout the world and in the United States.
- 3.6. Understanding of the history of a point standard internationally and nationally and why there is currently no minimum “number” of points needed for an identification.
- 3.7. Understand the foundations of standardized organizations. To include the IAI, SWGFAST and OSAC.

Required Readings:	Trainee	Completion Date
Fingerprint Source Book, NIJ, Chapter 1, Appendix B		
Quantitative-Qualitative Friction Ridge Analysis, Ashbaugh, Chapters 1-2		
Bradford, R. Mary E. Holland. America’s First Finger Print Instructor, The Print, 1998, 14(5):1-2		
Champod, C. et al, Alphonse Bertillon and Dactyloscopy, JFI, 1993, 43(6):604-625		
Sodhi, G.S. et al, The Forgotten Indian Pioneers of Fingerprint Science, Current Science, Vol 88 (1), January 2005		
IAI 1973 Resolution, August 1973 Pgs. 13 - 14		
The report of the International Association for Identification, Standardization Committee, March 2011		
OSAC: https://www.nist.gov/osac		
IAI: https://www.theiai.org/iai_history.php		
Training Exercises:		
Write a short synopsis of the contributions of each of the following figures: Hershel, Faulds, Galton, Vucetich & Henry		
Create a timeline of important historical events as they pertain to friction ridge skin		



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Training Standards:	Trainee/Trainer	Completion Date
Self-study for required reading		
The Trainee must pass a written test on required reading		



Module 4: Biological Aspects of Friction Ridge Skin

4. Training Objectives:

- 4.1. Gain knowledge on the biology/physiology of friction ridge skin.
- 4.2. Understanding of the formation of friction ridges during fetal development prior to birth.
- 4.3. Understanding that the friction ridge skin arrangement is unique and persistent through the life of the individual, barring scars, some diseases and decomposition after death.
- 4.4. Understanding of the biological significance of friction skin ridge patterns, the basic anatomy, and terminology of the hands and feet.

Required Readings:	Trainee	Completion Date
Fingerprint Source Book, NIJ, Chapters 2 & 3		
Criminalistics, 12th edition, Richard Saferstein, pages 131-134		
Quantitative-Qualitative Friction Ridge Analysis, Ashbaugh, Chapter 3		
Fingerprints and Other Ridge Skin Impressions, Champod, CRC, Chapter 1		
Scott's Fingerprint Mechanics, Olsen, Chapter 1, Pages 5-14 and 24-30		
The Critical Stage of Friction Ridge and Pattern Formation, Wertheim and Maceo, JFI, 52 (1), 2002, pps.35-85		
Embryologic Development of Epidermal Ridges and Their Configurations, Birth Defects, Babler, Original Article Series March of Dimes Defects Foundation (1991) 27(2):95-112		
Defined Pattern, Overall Pattern, and Unique Pattern, Ashbaugh, D., JFI, 42(6):503-512		
Congenital Malformations of Human Dermatoglyphs, David, T.J., Download from adc.bmj.com, January 2009		
Scars in Friction-Ridge Skin, Maceo, A., Evidence Technology Magazine, July-August 2005, pp. 26-28		

Training Exercises:	Trainee/Trainer	Completion Date
Find and read two articles published within the past 7 years on the biology and physiology of friction ridge skin		
Give a presentation on these papers to the Latent Print Section		



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Training Standards:	Trainee/Trainer	Completion Date
Self-study for required reading		
The Trainee must pass a written test on required reading		



Module 5: Friction Ridge Pattern Recognition

5. Training Objectives:

- 5.1. Understanding of common terminology and definitions associated with friction ridge pattern recognition.
- 5.2. Understanding of basic classification systems (Henry, NCIC).
- 5.3. Basic understanding of friction ridge formations as they relate to recognition, orientation, interpretation, and identification.

Required Readings:	Trainee	Completion Date
The Self-Made Tapestry: Pattern Formation in Nature, Ball, Chapter 1		
Fingerprint Source Book, NIJ, Chapter 5		
The Science of Fingerprints, FBI, Chapters 2-8		
Friction Ridge Skin, Cowger, Chapter 3		
Scott's Fingerprint Mechanics, Olsen, Chapter 1, pp 15-23		
Ashbaugh, D. Palmar Flexion Crease Identification, JFI, 1991, 41(4):255- 273		
Discriminability of Fingerprints of Twins, Srihari, S. et al, JFI, 2008, 58(1):109-127		
Hand Determination of Whorl Patterns Using Axis Slant, Brazelle, JFI 68(1)		

Training Standards:	Trainee/Trainer	Completion Date
Self-study for required reading		
The Trainee must pass a written test on required reading		

Training Exercises:	Trainee/Trainer	
Classify five fingerprint cards including ridge counts and reference patterns		



Module 6: Friction Ridge Analysis

6. Training Objectives:

- 6.1. Understanding of the scientific methodology and its application to friction ridge examination and the ability to analyze fragmented friction ridge detail to determine its value.
- 6.2. Understanding of friction ridge characteristics, the varying definitions/interpretations assigned to combinations of ridge characteristics and their use in comparisons.
- 6.3. Understanding the value of incipient ridge characteristics in an impression.
- 6.4. Basic understanding of the ability to recognize and utilize ridge flow configurations, scars, creases, and other friction ridge characteristics to support latent print examination.
- 6.5. Basic ability to recognize/determine anatomical source from which a latent print originated.
- 6.6. Basic understanding of the effects of deposition distortion and how to properly analyze distortion.
- 6.7. Basic ability to recognize simultaneous impressions and understanding their value for comparison.

Required Readings:	Trainee	Completion Date
Quantitative-Qualitative Friction Ridge Analysis, Ashbaugh, Chapters 4 & 5		
Fingerprint Source Book, NIJ, Chapters 6, 9, 10, 14, & 15		
Friction Ridge Skin, Cowger, pages 129-206		
"Coins in the Pocket: A Simple Explanation of Quantitative-Qualitative Friction Ridge Analysis", JFI, Vol. 55, No. 3, 2005		
"Distortion versus Dissimilarity in Friction Skin Identification", JFI, Vol. 48, No. 2, 1998, William Leo		
"ACE-V and the Scientific Method", JFI, Vol. 60, No. 1, 2010		

Training Exercises:	Trainer	Completion Date
Analyze 100 latent prints to determine value: <ul style="list-style-type: none"> • Of value for comparison (AQ, NAQ, VEO) • No value 		
Utilize the latent prints from the first exercise to: <ul style="list-style-type: none"> • Determine anatomical origin • Mark orientation per SOP • Demonstrate knowledge of ridge flow and/or pattern type • Demonstrate knowledge of second level detail • Demonstrate knowledge of third level detail • Demonstrate knowledge of "Red Flag" areas (ie. distortion, pressure, tonal reversal, etc.) • Demonstrate ability to trace ridges accurately 		



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Training Standards:	Trainer	Completion Date
Self-study for required reading		
The trainee must pass a written test on required reading		



Module 7 Latent Print Development Techniques

7. Sequential Processing for Latent Prints

7.1. Training Objectives:

- Understanding of safety hazards associated with each of the chemicals used for development of latent prints by HFSC; knowledge shall include proper disposal, spill procedures/equipment, and the use of personal protective equipment.
- Understanding which latent print residue component is targeted by different chemical development procedures.
- Understanding the effects of various solvents on different evidence surfaces (inks, plastics, varnishes, etc.).
- Understanding of surface and environmental factors effecting selection and sequencing of chemical development procedures.
- Understanding of various ways to do sequential processing and best practices for utilizing reagents in the correct sequence.
- Understanding of the personal safety hazards associated with Alternate Light Sources (ALS) and TracER Laser.
- Understanding of fluorescent chemical procedures used in conjunction with an ALS/Laser.
- Understanding of equipment maintenance relative to the ALS/Laser.
- Knowledge of luminescence, fluorescence, inherent luminescence, light wavelengths, band-pass filters, lasers, and light delivery systems as they relate to ALS/laser detection of latent prints.
- Understanding of the basic types of brushes and their composition, as well as the proper usage for each type.
- Understanding of surfaces and environmental factors when determining brush type, powder type, and color selection.
- Understanding of proper usage of different lift materials.
- Understanding of safety procedures related to all physical/chemical reagents.
- Understanding of storage, application, and development procedures for physical/chemical reagents

7.2. Part I: **Non-Porous**

- Alternate Light Source (ALS)
- TracER
- Cyanoacrylate Ester (CA)
- Rhodamine 6G (R6G)
- Basic Yellow 40 (BY40)
- Powders

7.3. Part II: Porous

- 1,2-Indandedione (IND)
- 1,8-Diazafloren-9-one (DFO)
- Thermanin
- Ninhydrin (NIN)
- Physical Developer



- Oil Red-O
- Zinc Chloride
- 7.4. Part III: **Blood Reagents**
 - Acid Yellow 7
 - Amido Black
 - Leucocrystal Violet (LCV)
- 7.5. Part IV: **Other (Adhesive, Grease, Wet, etc)**
 - Gentian Violet
 - Stick Side Powder-Wetwop
 - Small Particle Reagent (SPR)
 - Gun Blue
 - Sudan Black

Required Readings Part I:	Trainee	Completion Date
Advances in FP Technology, 3rd Edition, Lee and Gaensslen, Chapters 3, 4, 5, 7, 10, & 13		
All Latent Print Section Sequential Procedures, HFSC		
Sequencing of Reagents for the Improved Visualization of Latent Prints, JFI 38(5) pp. 197-210, September/October 1998		
Fingerprint Sourcebook, NIJ, Sections 7.10, 11.3.3		
Latent Print Section Visual Examination Procedure, HFSC		
Latent Print Section TracER LASER Operating Procedure, HFSC		
Latent Print Section CrimeScope CA-16-500 Operating Procedure, HFSC		
TracER Laser Operating Manual		
Crimescope Operating Manual		
Fingerprint Detection with Lasers, Menzel, Sections 1.4-1.6, 3.7, 4.2-4.3, Ch 7, 8.2, 8.5, 8.6, 8.9, Ch 9		
Fingerprint Detection by Fluorescence Examination, Police Scientific Development Branch		
Fingerprint Sourcebook, NIJ, Sections 7.3, 11.2.2, and 11.2.3		
The Science of Fingerprints, FBI, Chapter 14, pages 173-174		
Advances in FP Technology, 3rd Edition, Lee and Gaensslen, Chapters 1 & 8		
Latent Print Section Fingerprint Powder Procedure, HFSC		
Fingerprint Sourcebook, NIJ, Sections 7.9		



Advances in FP Technology, 3rd Edition, Lee and Gaensslen, Chapter 11		
“Pretreatment Strategies for the Improves Cyanoacrylate Development of Dry Latent Fingerprints on Nonporous Surfaces”, JFI, Vol. 62, No. 5, 2012		
Cyanoacrylate Fuming Precautions, JFI 44(5). Pp 409-411, July/August 1996		
Ridge Detail through Latex Gloves, Hall JFI 41(6), 1991 pp. 415-416		
Tonally Reversed Friction Ridge Prints on Plastic, JFI, 39(1) pp. 11-22, January/February 1989		
Factors Affecting the Recovery of Latent Prints on Firearms. JFI, 1997, 47(2)		
Latent Print Cyanoacrylate Ester (Superglue) Fuming Procedure, HFSC		
MSDS for Cyanoacrylate		
http://www.cbdiai.org/Reagents/cyano.html		
Fingerprint Sourcebook, NIJ, Sections 7.10		
Fingerprints and Other Ridge Skin Impressions, Champod, Lenard, Margot, and Stoilovic, Pages 142-145		
Latent Print Section Basic Yellow 40 Procedure, HFSC		
MSDS for Basic Yellow 40		
http://www.cbdiai.org/Reagents/by40.html		
“Dye Staining of Duct Tape: An Overlooked Procedure”, JFI, Vol. 65, No. 3, 2015		
Latent Print Rhodamine 6G Procedure, HFSC		
MSDS for Rhodamine 6G		
http://www.cbdiai.org/Reagents/rhod.htm		

Training Exercises Part I:	Trainer	Completion Date
Trainer led demonstration of ALS and Laser examination		
Latent Print Section Visual Examination Procedure, HFSC		
Trainer-led orientation of powder processing/lifting		
Trainee practice lifting from multiple surfaces with various powders/lifting techniques		
Prepare reagents, if possible/applicable		
Process various items utilizing all non-porous reagents		



Training Standard Part I:	Trainer	Completion Date
The trainee must pass a written test on required reading		
Required Readings Part II:	Trainee	Completion Date
Fingerprint Sourcebook, NIJ, Sections 7.6		
Advances in FP Technology, 3rd Edition, Lee and Gaensslen, Chapter 2		
“Variability in Visualization of Latent Fingermarks Developed with 1,2 Indanedione-Zinc Chloride”, JFI, Vol. 63, No. 6, 2013		
“Use of an Optimized 1, 2-Indanedione Process for the Development of Latent Prints”, Bicknell DE, Ramotowski RS, Journal of Forensic Science, 2008; 53(5):1108-1116.		
Latent Print Section 1,2-Indanedione (IND) Procedure, HFSC		
Latent Print Section Processing Thermal Paper using 1,2-Indanedione (IND) Procedure, HFSC		
MSDS for 1,2-Indanedione		
http://www.cbdi.ai.org/Reagents/indane.html		
Fingerprint Sourcebook, NIJ, Sections 7.5		
“The effectiveness of 1,2-Indanedione- Zinc Formulations and Comparison with HFE-Based 1,8-Diazafluoren-9-one for Fingerprint Development”, JFI Vol. 59, No. 6, 2009		
“Spectral Variations for Reaction Products Formed Between Different Amino Acids and Latent Finger Mark Detection Reagents on a Range of Cellulose-Based Substrates.”, JFI, Vol. 59, No. 3, 2009		
Latent Print Section 1,8-Diazafluoren-9-one (DFO) Procedure, HFSC		
MSDS for 1,8-Diazafluoren-9-one		
http://www.cbdi.ai.org/Reagents/dfo.html		
“The Development of Latent Fingerprints on Thermal Paper Using a Novel, Solvent-Free Method.” JFI 2005, 55:202-13.		
Latent Print Thermanin Procedure, HFSC		
MSDS for Thermanin		
Fingerprint Sourcebook, NIJ, Sections 7.4		
Advances in FP Technology, 3rd Edition, Lee and Gaensslen, Chapter 12		
The Science of Fingerprints, FBI, “Ninhydrin Method”, Pages 177-179		



Latent Print Ninhydrin Procedure, HFSC		
MSDS for Ninhydrin		
http://www.cbdi.ai.org/Reagents/nin.html		

Training Exercises Part II:	Trainer	Completion Date
Prepare reagents, if possible/applicable		
Process various items utilizing all porous reagents		

Training Standard Part II:	Trainer	Completion Date
The trainee must pass a written test on required reading		

Required Readings Part III:	Trainee	Completion Date
Fingerprint Sourcebook, NIJ, Sections 7.12.5		
"Enhancement of Fingerprints in Blood", JFI, Vol. 55, No. 6, 2005		
"The Use of Various Chemical Blood Reagents to Develop Blood Fingerprint or Footwear Impressions", JFI, Vol. 64, No. 1, 2014		
Latent Print Acid Yellow 7 Procedure, HFSC		
MSDS for Acid Yellow 7		
Fingerprint Sourcebook, NIJ, Sections 7.12		
Advances in FP Technology, 3rd Edition, Lee and Gaensslen, Chapters 6 and 9		
"The Effect of Common Fingerprint Detection Techniques on the DNA Typing of Fingerprints Deposited on Different Surfaces", JFI, Vol. 54, No.1, 2004		
"Developing Fingerprints in Blood: A Comparison of Several Techniques", JFI, Vol. 57, No. 1, 2007		
Latent Print Section Amido Black Procedure, HFSC		
MSDS for Amido Black		
http://www.cbdi.ai.org/Reagents/amidom.html		
"Deposition of Bloody Friction Ridge Impression", JFI, Vol. 58, No. 3, 2007, Glenn Langenburg		
Latent Print Leucocrystal Violet Procedure, HFSC		
MSDS for Leucocrystal Violet		



http://www.cbdi.ai.org/Reagents/lcv.html		
Training Exercises Part III:		
Prepare reagents, if possible/applicable	Trainer	Completion Date
Process various items utilizing all blood reagents		
Training Standard Part III:		
The trainee must pass a written test on required reading	Trainer	Completion Date
Required Readings Part IV:		
Fingerprints and Other Ridge Skin Impressions, Champod, Lennard, Margot, and Stoilovic, Page 160	Trainee	Completion Date
MSDS for Gentian Violet		
http://www.cbdi.ai.org/Reagents/gent.html		
Latent Print Gentian Violet Procedure, HFSC		
"The Use of Un-du to Separate Adhesive Materials", JFI, Vol. 57, No. 5, 2007		
"Does CA Fuming Interfere with powder Suspension Processing?", JFI, Vol. 59, No. 2, 2009		
Fingerprints and Other Ridge Skin Impressions, Champod, Lennard, Margot, and Stoilovic, Pages 161-162		
MSDS for Sticky Side Powder and Wetwop		
http://www.cbdi.ai.org/Reagents/sticky.html		
"The Use of Un-du to Separate Adhesive Materials", JFI, Vol. 57, No. 5, 2007		
Latent Print Sticky Side Powder-Wetwop SOP, HFSC		
Advances in FP Technology, 3rd Edition, Lee and Gaensslen, pages 5-7, 10-11		
"Development of Latent Prints Using Titanium Dioxide (TiO ₂) in SPR (White) on Adhesives", JFI, Vol. 55, No. 3, 2005		
Latent Print Small Particle Reagent Procedure, HFSC		
MSDS for Small Particle Reagent		
http://www.cbdi.ai.org/Reagents/spr.html		
Fingerprint Sourcebook, NIJ, Sections 7.13.4		



Latent Print Gun Bluing Solution Procedure, HFSC		
MSDS for Gun Blue		
http://www.cbdi.ai.org/Reagents/bluing.html		
Advances in FP Technology, 3rd Edition, Lee and Gaensslen, Section 4.1		
Latent Print Sudan Black Procedure, HFSC		
MSDS for Sudan Black		
http://www.cbdi.ai.org/Reagents/sudan.html		

Training Exercises Part IV:	Trainer	Completion Date
Prepare reagents, if possible/applicable		
Process various items utilizing all other reagents		

Training Standard Part IV:	Trainer	Completion Date
The trainee must pass a written test on required reading		

Module Training Exercises:	Trainer	Completion Date
Write an essay on why latent prints may not be developed on surfaces		



Module 8: Latent Print Photography

8. Training Objectives:

8.1. An understanding of latent print photography to include:

- Cameras and their operation
- Lenses and their uses and operation
- Lens Filters

8.2. An understanding of photographic procedures to include:

- Adjusting for exposure settings including aperture and shutter speed for optimal depth of field
- Use of scales in images
- Photography of powdered and chemically developed latent prints of various colors with various backgrounds.
- Photography of patent and plastic prints.
- Techniques for photographing fluorescent images.
- Understanding of the proper procedures for camera capture and digital scanning of latent images.

Required Readings:	Trainee	Completion Date
Fingerprint Sourcebook, NIJ, Chapters 8, 10		
Friction Ridge Skin, Cowger, Chapter 5		
Fundamentals of Forensic Photography, Mancini, Ch 1-4, Ch 6, Ch 8		
Identification Photography, by Robert E. May (Booklet)		
Fingerprints and Other Ridge Skin Impressions, Champod, Chapters 3 & 4, Appendix 3		
The Science of Fingerprints, FBI, Chapters 13 – 15		
“Focus Stacking in Photoshop – Depth of Field Optimization In Macrophotography”, JFI, Vol. 64, No.1, 2014		

Training Exercises:	Trainer	Completion Date
Photograph latent prints developed from various porous substrates.		
Photograph latent prints developed from various non-porous substrates.		
Photograph latent prints developed on curved surfaces		
Photograph latent prints from various colored backgrounds		
Photograph latent prints from reflective surfaces		



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Training Standards:	Trainer	Completion Date
Self-study for required readings.		
The trainee must pass a written examination on the required readings.		



Module 9: Digital Imaging of Latent Prints

9. Understanding of digital enhancement techniques using Adobe Photoshop or other similar programs to improve the quality of latent print images.

- Tonal reversal
- Position reversal
- Use of layers
- Image contrast
- Image calibration/resolution
- Use of digital filters

Required Readings:	Trainee	Completion Date
Criminalistics, 12th edition (Saferstein), pages 146-148		
“Techniques for Digital Enhancement of Latent Prints Obscured by Disruptive Backgrounds”, JFI, Vol. 54, No.2, 2004		
“Image Enhancement and Adobe Photoshop: Using Calculations to Extract Image Detail”, JFI, Vol. 59, No.4, 2007		
“Digital Enhancement of Latent Prints using Adobe Photoshop Black & White Adjustments”, JFI, Vol. 57, No. 4, 2007		
“Standard for Friction Ridge Digital Imaging”, swgfast.org		

Training Exercises:	Trainer	Completion Date
Trainer-led instruction to Adobe Photoshop:		
____ Image 1:1 calibration/Resolution		
____ Digital imaging/processing of latent prints		
____ Quality/contrast enhancement		
____ Black/White; use of grayscale		
____ Tonal Reversal/Spatial Reversal		
____ Use of Layers		
____ Annotation/Documentation of Images		
The trainee will independently capture, calibrate, enhance, and document latent prints (to be determined by the primary trainer)		



Latent Print Section
Latent Print Processor Program of Instruction (POI)
Comparative & Analytical Division

Training Standards:	Trainer	Completion Date
Self-study for required readings.		
The trainee must pass a written examination on the required readings.		



Module 10: Competency Test

10. The trainee must successfully complete all designated modules in the training manual as well as the competency test before acquiring authorization to perform supervised dependent casework.

Training Exercises:	Trainer	Completion Date
The Trainee will give a presentation on a topic of their choosing to the Latent Print Section.		

Training Standards:	Trainer	Completion Date
Practical examination that will consist of mock evidence. The trainee will be expected to process the mock evidence as well as preserve and enhance any possible latent prints.		
The trainee has completed all modules through a comprehensive assessment and/or written examinations. This is used to fulfill the final written exam as required by the quality manual.		
The Trainee will give a presentation on a topic of their choosing to the Latent Print Section		



Module 11: Dependent Supervised Casework

11. During dependent supervised casework, the trainee processes cases from start to finish with supervision. At each stage of dependent supervised casework, the trainee's work will be reviewed by the primary trainer or authorized personnel to ensure all applicable procedures are being followed and adequate documentation is recorded. Cases worked under dependent supervised casework will be assigned to the primary trainer in LIMS. Blind and mock cases can be assigned to the trainee. The primary trainer will regularly update the Technical Lead, Latent Print Supervisor and Latent Print Manager on if a recommendation to be signed off on dependent supervised casework is warranted or if further training is required.

Training Exercises:	Trainer	Completion Date
The trainee will keep a spreadsheet of cases processed to include case numbers, results, processes used, and any other notes deemed necessary.		

Training Standards:	Trainer	Completion Date
The trainer will select five final cases to be worked by the trainee under supervised casework. These cases will be worked without asking the primary trainer questions if possible. There should be few to no corrections made. All work will be performed by the trainee including the writing of the report and checked by the trainer before issuance. These cases will be used to gauge the competency of the trainee to write test reports as required by the Quality Manual. However, it should be noted that real cases will bear the signature of the trainer or authorized personnel.		



Module 12: Court Testimony, Ethics, and Human Factors

12. Training Objectives:

- 12.1. Understanding of the role of expert witness testimony.
- 12.2. Knowledge of factors regarding the admissibility of evidence.
- 12.3. Understanding of courtroom operational procedures.
- 12.4. Knowledge of major court decisions and their significance.
- 12.5. Understanding of professional ethics.

Required Readings:	Trainee	Completion Date
Fingerprint Sourcebook, NIJ, Chapters 12-15		
Advances in FP Technology, 2nd Edition, Lee and Gaensslen, Chapter 10		
Friction Ridge Skin, Cowger, Chapter 9		
NIST Expert Working Group on Human factors, Latent Print Examination and Human Factors, NIJ, 2012, Chapter 9		
NAS Report Strengthening Forensic Science, 2009 Report (as pertaining to latent prints)		
P-CAST Forensic Science in Criminal Courts: Ensuring Scientific Validity of Feature-Comparison Methods, 2016 Report (as pertaining to latent prints)		
Qualifying as an Expert Fingerprint Witness: Designing a Set of Questions to Assist in Court Testimony. Wertheim JFI, 1990, 40 (2). pp. 60-68, 1990		
Confirmation Bias, Ethics, and Mistakes in Forensics, Jon Byrd, Journal of Forensic Identification, 511\523 56 (4), 2006		
Defending Against the Critics Curse, Glenn Langenburg, The Chesapeake Examiner, Spring 2003 Vol. 41 No. 1		
Ethics in Forensic Science: A Review of the Literature on Expert Testimony, Kathleen Saviers, Journal of Forensic Identification, 449\462 5 (4), 2002		
"Why Experts Make Errors", JFI, Vol. 56, No. 4, 2006		
Ethics and the Practice of Forensic Science, Bowen, Chapters 1 – 9		
Buffey rape case sets precedent: Prosecutors must disclose evidence, 11/10/15, Gazette Mail, Qualtrax TFSC Reading Material		
Judge reverses murder conviction, saying crucial DNA information not disclosed, 10/24/17, San Diego Union Tribune, Qualtrax TFSC Reading Material		
A Perspective on Errors, Bias, and Interpretation in the Forensic Sciences and Direction for Continuing Advancement*, JFS, July 2009, Vol. 54, No. 4, Qualtrax, TFSC Reading		



Cognitive and Human Factors in Expert Decision Making: Six Fallacies and the Eight Sources of Bias, Dror, Analytical Chem 2020, pp. 7998		
Practical Solutions to Cognitive and Human Factor Challenges in Forensic Science, Dror, Forensic Science Policy & Management, 2013, Qualtrax, TFSC Reading		
TFSC Licensing exam reading materials: Domain II		
Training Exercises:	Trainer	Completion Date
Prepare Statement of Qualifications (SOQ) and Curriculum Vitae (CV)		
Prepare list of court qualifying questions and answers		
Training Standards:	Trainer	Completion Date
Prepare for and successfully participate in a moot court		
A testimony evaluation form has been completed by at the least the primary trainer and may include participants in the moot court such as the individuals serving as the prosecution, the defense, and the judge		
Self-study for required readings.		
The trainee must pass a written examination on the required readings.		