



## **Latent Print Section**

# **Latent Print Examiner Program of Instruction (POI)**

Comparative & Analytical Division



## 1. Scope

- 1.1. This document defines the training program for Latent Print Examiners, 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 Examiner (LPE) Trainee will be proficient in the analysis, comparison, evaluation, and verification of friction ridge impressions. In addition, they will be proficient in case documentation, including LIMS, chain of custody (COC) transfers, Mideo, AFIS entries, and report writing. The LPE will testify as an expert witness in courts of law, as required, to their findings and procedures used.
- 1.3. The full Program of Instruction (POI) for an LPE is 3080 hours. The total hours may be modified depending on the ability, skills, initiative of the Trainee, and extenuating circumstances.
  - 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 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 90% of expected conclusions.
  - 2.1.2.2. The trainee will provide the primary trainer with weekly Training Logs.
  - 2.1.2.3. The trainee should accompany examiners to court to gain exposure to expert testimony on latent prints when/if possible.
  - 2.1.2.4. Any latent print training classes available during the training phase should be attended by the trainee when/if possible.
  - 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) to the Section Manager, Technical Lead, and the Trainee's Supervisor. These reports are due within ten working days of the last day of each month.
- 2.2.2. MTR's will be submitted in the form of a memorandum and should include, at a minimum, 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 the modules were completed successfully
  - 2.2.2.3. The modules scheduled to be completed 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.
- 2.2.3. 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.
- 2.2.4. 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. If the trainee makes one or more erroneous identifications and/or scores less than 90% on the practical examination, a documented consultation and/or remedial training is required. If remedial training occurs, a new practical examination will be administered.
- 2.2.5. In the event the trainee fails to complete a module satisfactorily, the module will be reviewed with the Trainee. 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, Technical Lead, or designee listing the deficiencies and remediation steps taken. The Supervisor, Section Manager, Technical Lead, or designee will determine the course of action based on the Primary Trainer's recommendations.
- 2.2.6. Monthly update meetings may be scheduled by the Technical Lead to discuss the trainee's progress. When necessary, the Primary Trainer and/or 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 chapters 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.



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<b>Module</b>	<b>Course of Instruction</b>	<b>Training (Hours)</b>	<b>Trainer</b>	<b>Date</b>
<b>1</b>	<u>Introduction to Forensic Science</u>	120		
<b>2</b>	<u>Evidence Handling and Safety</u>	80		
<b>3</b>	<u>History of Fingerprint Identification</u>	80		
<b>4</b>	<u>Biological Aspects of Friction Ridge Skin</u>	120		
<b>5</b>	<u>Friction Ridge Pattern Recognition</u>	40		
<b>6</b>	<u>Obtaining Inked Finger, Palm, and Foot Prints</u>	120		
<b>7</b>	<u>Analysis, Comparison, Evaluation, Verification</u>	1040		
<b>8</b>	<u>Digital Imaging of Latent Prints</u>	80		
<b>9</b>	<u>Cognitive Factors in Comparative Analysis</u>	80		
<b>10</b>	<u>Automated Fingerprint Identification Systems (AFIS)</u>	80		
<b>11</b>	<u>Competency Test</u>	40		
<b>12</b>	<u>Dependent Supervised Casework</u>	1040		
<b>13</b>	<u>Court Testimony and Ethics</u>	160		



Module 1: Introduction to Forensic Science

**1. 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.

<b>Required Readings:</b>	<b>Trainee</b>	<b>Completion Date</b>
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		
<b>Training Exercises: None</b>		



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<b>Training Standards:</b>	<b>Trainee/Trainer</b>	<b>Completion Date</b>
Self-study for required reading		
The Trainee must pass a written test on required reading		
Tour of other HFSC forensic disciplines		
Discuss what MDR's are and how they are handled		



**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.

<b>Required Readings:</b>	<b>Trainee</b>	<b>Completion Date</b>
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		

<b>Training Exercises:</b> None		
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<b>Training Standards:</b>	<b>Trainee/Trainer</b>	<b>Completion Date</b>
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.

<b>Required Readings:</b>	<b>Trainee</b>	<b>Completion Date</b>
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: <a href="https://www.nist.gov/osac">https://www.nist.gov/osac</a>		
IAI: <a href="https://www.theiai.org/iai_history.php">https://www.theiai.org/iai_history.php</a>		

<b>Training Exercises:</b>		
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		

<b>Training Standards:</b>	<b>Trainee/Trainer</b>	<b>Completion Date</b>
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.

<b>Required Readings:</b>	<b>Trainee</b>	<b>Completion Date</b>
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		

<b>Training Exercises:</b>		
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		

<b>Training Standards:</b>	<b>Trainee/Trainer</b>	<b>Completion Date</b>
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.

<b>Required Readings:</b>	<b>Trainee</b>	<b>Completion Date</b>
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)		

<b>Training Exercises:</b>		
Classify five fingerprint cards including ridge counts and reference patterns		

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



**Module 6: Obtaining Inked Finger, Palm, and Foot Prints**

6. Training Objectives:

- 6.1. Understanding of the materials, procedures, methods, and techniques for recording finger, palm and sole prints.
- 6.2. Demonstrate an acceptable proficiency level in recording friction ridge skin and the importance of recording all friction ridge detail (major case prints).
- 6.3. Understanding the various methods for recording known friction ridges for criminal history or personal identification; including ink, inkless systems, Handiprint, and electronic capture systems.
- 6.4. Understanding the proper method of completing fingerprint and palm print card information, sequence for recording fingers, and method and purpose of printing plain impressions.
- 6.5. Understanding of procedures and equipment used in fingerprinting deceased persons.

<b>Required Readings:</b>	<b>Trainee</b>	<b>Completion Date</b>
The Fingerprint Source Book, NIJ, Chapter 4		
The Science of Fingerprints, FBI, Chapters 9-11, and 19		
Scott’s Fingerprint Mechanics, Olsen, Chapter 2		
Friction Ridge Skin, Cowger, Chapter 2		
Wertheim, P. Inked Major Case Prints, JFI, 1999, 49(5):468-177		
“Using Fingerprint Powder to Record Friction Ridge Details from a Cadaver”, JFI, Vol. 59, No. 3, 2009		
“Artifacts Caused by Livescan Affect a latent Print Comparison: An Action Case”, JFI, Vol. 69, No. 1, 2019		

<b>Training Exercises:</b>		
Take a complete set of fingerprints from five different subjects		
Take a complete set of palm prints from five different subjects		
Take a complete set of foot prints from two different subjects		
Take a complete set of major case prints from two different subjects using ink		
Take a set of major case prints from two different subjects using HandiPrint		



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Self-study for required reading		
The Trainee must pass a written test on required reading		



**Module 7: Analysis, Comparison, Evaluation, Verification (ACE-V)**

7. Training Objectives:

- 7.1. Understanding of the ACE-V methodology and its application to friction ridge examination and the ability to analyze partial friction ridge impressions to determine their value.
- 7.2. Understanding of the use/criteria of NAQ, AQ, NV, NRD, PSL, and VEO for analysis determinations.
- 7.3. Understanding of friction ridge characteristics, terminology, and the varying definitions/interpretations assigned to combinations of ridge characteristics and their use in comparisons.
- 7.4. Understanding of the relationship between quality and quantity throughout the ACE-V process.
- 7.5. Understanding the value of incipient ridge characteristics in an impression.
- 7.6. Ability to recognize and utilize ridge flow configurations, scars, creases, and other friction ridge characteristics to support latent print examination.
- 7.7. Ability to recognize/determine anatomical source and orientation from which a latent print originated.
- 7.8. Understanding of the effects of distortion and how to properly analyze distortion.
- 7.9. Understanding the nature of tonal reversals and the ability to properly analyze these occurrences when they are encountered in latent print impressions.
- 7.10. Ability to recognize simultaneous impressions and understanding their value for comparison.
- 7.11. Demonstrate the ability to properly conduct a comparison.
- 7.12. Understanding of the criteria needed for an identification, exclusion, or inconclusive determination.
- 7.13. Awareness of the impact of an erroneous conclusion.
- 7.14. Basic awareness of research into statistical models and the potential for their integration into current friction ridge comparison procedures in the future.
- 7.15. Understanding of the importance of verification.



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Quantitative-Qualitative Friction Ridge Analysis, Ashbaugh, Chapters 4-8		
Fingerprint Source Book, NIJ, Chapters 9, 10, and 14		
Friction Ridge Skin, Cowger, pages 129-206		
Advances in FP Technology, 2nd Edition, Lee and Gaensslen, Chapter 2		
Advances in FP Technology, 3rd Edition, Lee and Gaensslen, Chapter 15		
Fingerprints and Other Ridge Skin Impressions, C. Champod, Chapter 2		
NIST Expert Working Group on Human factors, Latent Print Examination and Human Factors, NIJ, 2012 - Chapters 1-4		
“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		
“Detection of Forged and Fabricated Latent Prints”, Wertheim, JFI, 1994, 44(6):652-679		
“A Performance Study of the ACE-V Process: A Pilot Study to Measure Accuracy, Precision, Reproducibility, Repeatability, and Biasability of Conclusions”, JFI, Vol. 59, No. 2, 2009		
“Incipient Ridges and the Clarity Spectrum”, Ashbaugh, D., JFI, 1992, 42(2):106-114		
“Level 3 Details and Their Role in Fingerprint Identification: A Survey among Practitioners”, JFI, Vol. 58, No. 5, 2008		
“The Etiology of ACE-V and Its Proper Use: An exploration of the Relationship Between ACE-V And the Scientific Method of Hypothesis Testing”, JFI, Vol. 56, No. 3, 2006		
“Friction Ridge Examination: ACE-V Documentation”, Maceo, A., Holy Grail, Aug 2014		
“Qualitative Assessment of Skin Deformation: A Pilot Study”, Maceo, A., JFI, 2008, 59(4):390-440		
“Sufficiency and Standards for Exclusion Decisions”, Ray, E. et al, JFI, 2013, 63(6):675-697		
United States Department of Justice. (2006) Unclassified Executive Summary of the Office of the Inspector General: A Review of the FBI’s Handling of the Brandon Mayfield Case		
“Investigation of the Reproducibility of Third-Level Characteristics”, Anthonioz, A. et al, JFI, 61(2):171-192		
“Clues in Friction Ridge Comparisons: Tonal Reversals”, Castellon, S., JFI, 2004, 64(3):223- 237		
FBI, Latent Prints: A Perspective on the State of the Science, (2009) <a href="http://www.fbi.gov/about-us/lab/forensic-science">www.fbi.gov/about-us/lab/forensic-science</a>		



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“Documenting and Reporting Inconclusive Results”, Maceo, A., JFI, 201, 61(3):226-231		
“Blind Verification: Does it Compromise the Confidence of ACE-V Methodology to the Scientific Method”, Mankevich, A., Chesapeake Examiner, Fall 2007, 45(2):22-29		
Analysis, Comparison, Evaluation, and Verification Methodology, HFSC SOP		

<b>Training Exercises:</b>		
Analyze 100 latent prints to determine value		
Analyze 100 latent prints and mark the following		
<ul style="list-style-type: none"> <li>• Determine anatomical origin</li> <li>• Mark orientation per SOP</li> <li>• Demonstrate knowledge of ridge flow and/or pattern type</li> <li>• Demonstrate knowledge of second level detail</li> <li>• Demonstrate knowledge of third level detail</li> <li>• Demonstrate knowledge of “Red Flag” areas (ie. distortion, pressure, tonal reversal, etc.)</li> <li>• Demonstrate ability to trace ridges accurately</li> </ul>		
Complete comparison exercises of varying difficulty until Trainee is deemed competent		

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



Module 8: Digital Imaging of Latent Prints

8. Understanding of digital enhancement techniques using Adobe Photoshop or other similar programs

to improve the quality of latent print images.

- 8.1. Tonal reversal
- 8.2. Position reversal
- 8.3. Use of layers
- 8.4. Image contrast
- 8.5. Image calibration/resolution
- 8.6. Use of digital filters

<b>Required Readings:</b>	<b>Trainee</b>	<b>Completion Date</b>
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		

<b>Training Exercises:</b>	<b>Trainee</b>	<b>Completion Date</b>
Trainer-led instruction to Adobe Photoshop: _____ Image 1:1 calibration/Resolution _____ Digital imaging/processing of latent prints (at a minimum): Dodge/Burn Levels Calculations Curves Channels _____ 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)		





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Self-study for required reading		
The Trainee must pass a written test on required reading		



Module 9: Cognitive Factors in Comparative Analysis

9. Training Objectives:

- 9.1. Understanding how outside factors or extraneous information can influence decision making during friction ridge examinations.
- 9.2. Develop an awareness of various factors, physical and psychological, that can influence the decision-making process when making comparisons.
- 9.3. Understanding bias and how it can affect the interpretation of friction ridge skin features and the resulting conclusions:
  - 9.3.1. Confirmation bias
  - 9.3.2. Contextual bias

<b>Required Readings:</b>	<b>Trainee</b>	<b>Completion Date</b>
"Why Experts Make Errors", Dror, I. et al, JFI, 2006, 56(4):600-616		
Fingerprint Source Book, NIJ, Chapter 15		
Byrd, J. S. (2006). Confirmation Bias, Ethics, and Mistakes in Forensics. JFI, 56 (4), 511-525		
Dror, I.E., Charlton, D., & Peron, A.E. (2006). Contextual Information Renders Experts Vulnerable to Making Erroneous Identifications. Forensic Science International, 156 (1). 74-78		
Busey, T. et al. The impact of fatigue on latent print examinations as Revealed by behavioral and eye gaze testing. Forensic Science International. 2014		
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 Chemistry 2020, pp. 7998		
Practical Solutions to Cognitive and Human Factor Challenges in Forensic Science, Dror, Forensic Science Policy & Management, 2013, Qualtrax, TFSC Reading		
<b>Training Exercises:</b>		
Find and read two articles published within the past 5 years on human factors influencing the decision-making process during latent print comparisons		
Trainee will give a presentation of these papers to the Latent Print Section		



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Self-study for required reading		
The Trainee must pass a written test on required reading		



Module 10: Automated Fingerprint Identification Systems (AFIS)

10. Training Objectives

- 10.1. Understanding of the history, capabilities, and limitations of AFIS and the types of searches.
- 10.2. Understanding of how all local, state, and federal AFIS systems function.
- 10.3. Learn the HFSC Latent Print Section AFIS workflows.
- 10.4. Understanding of why a latent search in AFIS may be negative.
- 10.5. Understanding of close non-matches and AFIS interoperability.

<b>Required Readings:</b>	<b>Trainee</b>	<b>Completion Date</b>
The Fingerprint Source Book, NIJ - Chapter 6		
Advances in Fingerprint Technology, Lee and Gaensslen, 2nd Edition, Chapter 8		
“Utilizing AFIS searching Tools to Reduce Errors in Fingerprinting Casework”, Langenburg, G. et al, Forensic Science International, 257(2015):123-133		
“Why Identifications Are More Likely to Score in Rank One in AFIS”, Moore, R., JFI, 1991, 41(2):107-111		
Automated Fingerprint Identification System (AFIS) Operations, HFSC SOP		
Glossary and Abbreviations, HFSC SOP		
Fundamentals of Fingerprint Analysis, Chapter 7		
<b>Training Exercises:</b>		
Observe searches conducted by Latent Print Examiners in all systems		



Module 11: Competency Test

11. Training Objectives

- 11.1. The Trainee must successfully complete all designated modules in the training manual
- 11.2. Complete competency test

<b>Training Standards:</b>	<b>Trainee/Trainer</b>	<b>Completion Date</b>
Competency Test: Practical examination that will consist of mock evidence. The trainee will be expected to perform the ACE process on any latents determined to be suitable and to obtain the expected conclusions.		
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 12: Dependent Supervised Casework

12. Training Objectives

- 12.1. Gain an understanding of the JusticeTrax system to properly document case notes.
- 12.2. Gain an understanding of utilizing Mideo to properly maintain and/or edit images.
- 12.3. Successfully complete DPS training to gain access to ULW and CBM archive.
- 12.4. Successfully complete Idemia training.
- 12.5. During dependent supervised casework, the Trainee will work 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 designee to ensure all applicable policies and workflows are being followed and adequate documentation is recorded. Cases worked under dependent supervised casework will be assigned to the Primary Trainer or designee in LIMS. The Primary Trainer will regularly update the Technical Lead, Latent Print Supervisor, Latent Print Manager, Technical Lead, and designee with either a recommendation to be released from dependent supervised casework or if further training is required.
- 12.5.1. The Trainee will keep a spreadsheet of cases processed to include case numbers, results, and any other notes deemed necessary.

<b>Training Standards:</b>	<b>Trainee/Trainer</b>	<b>Completion Date</b>
A selection of cases will be chosen by the primary trainer that exhibits a representation of varying complexities the trainee may receive as a latent print examiner. A minimum of five cases must be selected and one of them must be a comparison case. 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 these cases will bear the signature of the trainer.		



Module 13: Court Testimony and Ethics

13. Training Objectives:

- 13.1. Understanding of the role of expert witness testimony.
- 13.2. Knowledge of factors regarding the admissibility of evidence.
- 13.3. Understanding of courtroom operational procedures.
- 13.4. Knowledge of major court decisions and their significance.
- 13.5. 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 6		
Effective Expert Witnessing, Chapters 2-6 and 10 (pages 149-155)		
Ethics in Forensic Science, Chapters 3, 4, 10, 12, and 13		
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)		
Landmark Decisions Involving Evidence of Friction Skin Impression, Andre Moenssens, Finger Print and Identification Magazine, December 1966		
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, 51\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		
“Accuracy and reliability of forensic latent fingerprint decisions.”, PNAS. May 10, 2011. Vol. 108. No. 19. 7733-7738. Ulery et. al.		
“Miami-Dade Research Study for the Reliability of the ACE-V Process: Accuracy & Precision in Latent Fingerprint Examinations”, Pacheco, et al.		
Office of the Inspector General, A Review of the FBI’s Handling of the Brandon Mayfield Case, U.S. Department of Justice, 2009		



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

“Subjective – The Misused Word”, JFI, Vol .58, No. 1, 2008, William Leo		
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		
<b>TFSC Licensing exam reading materials: Domain II</b>		

<b>Training Exercises:</b>		
Prepare Statement of Qualifications (SOQ) and Curriculum Vitae (CV)		
Write a 3-5 page paper on the history of courtroom cases to include but not limited to People V. Jennings, Frye v. US, Daubert v. Merrell Dow Pharmaceuticals, US v. Byron Mitchell, US v. Llera Plaza, Mayfield, US v. Brian Rose, and New Hampshire v. Langill		
Write a short synopsis of recent court developments as they relate to fingerprints		
Prepare list of court qualifying questions		
When possible attend/observe testimony of other analysts		

<b>Training Standards:</b>	<b>Trainee/Trainer</b>	<b>Completion Date</b>
Self-study for required reading		
The Trainee must pass a written test on required reading		
Prepare for and successfully participate in a moot court		
Testimony evaluation form has been completed by at the least one member of the prosecution or defense. Forms may also be submitted by other participants in the moot court such as the individuals serving as the judge and jury		