Standard for Minimum Training Requirements for Forensic Document Examiners

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Foreword

Forensic document examination is a forensic discipline that addresses a complex and ever expanding range of issues concerning documents. In addition to the examination of handwriting and the varied materials that are considered to be documents, the methods used to generate documents continue to expand with technological advancements. Training is needed to cover the knowledge, skills, and abilities that are required to effectively apply the appropriate scientific and technical methodologies, and to properly evaluate the findings in order to render appropriate conclusions. Furthermore, this discipline requires a broad knowledge of document materials as well as production and generation methods; critical reasoning abilities; and written and verbal communication skills.

This standard provides guidance on training requirements for forensic document examiners. This standard also provides information needed by others who want to know what training is required for this discipline.

This standard does not cover all aspects of training for the topics addressed or for unusual or uncommon examinations.

This standard does not address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

The American Academy of Forensic Sciences established the Academy Standards Board (ASB) in 2015 with a vision of safeguarding Justice, Integrity and Fairness through Consensus Based American National Standards. To that end, the ASB develops consensus based forensic standards within a framework accredited by the American National Standards Institute (ANSI), and provides training to support those standards. ASB values integrity, scientific rigor, openness, due process, collaboration, excellence, diversity and inclusion. ASB is dedicated to developing and making freely accessible the highest quality documentary forensic science consensus Standards, Guidelines, Best Practices, and Technical Reports in a wide range of forensic science disciplines as a service to forensic practitioners and the legal system.

This document was revised, prepared, and finalized as a standard by the Forensic Document Examination Consensus Body of the AAFS Standards Board. The draft of this standard was developed by the Forensic Document Examination Subcommittee of the Organization of Scientific Area Committees (OSAC) for Forensic Science.

Questions, comments, and suggestions for the improvement of this document can be sent to AAFS-ASB Secretariat, asb@aafs.org or 401 N 21st Street, Colorado Springs, CO 80904.

All hyperlinks and web addresses shown in this document are current as of the publication date of this standard.

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Keywords: *forensic document examination; forensic document examiner; forensic sciences; questioned documents; training, trainer, trainee*

Table of Contents (*to be updated prior to publication*)

Standard for Minimum Training Requirements for Forensic Document Examiners

1 Scope

This standard sets minimum requirements for forensic document examiner basic training programs including requirements for trainees, forensic document examiner (FDE) trainers, and program elements. The standard provides a required training program syllabus. Exclusion: the standard does not cover all aspects of training for the topics addressed or for unusual or uncommon examinations.

2 Normative References

There are no normative reference documents. Annex A, Bibliography, contains informative references.

3 Terms and Definitions

For purposes of this document, the following terms and definitions apply.

3.1
apprenticeship
A full time student under the auspices of a FDE whose favorable reputation was established in the profession. The apprentice may or may not be a salaried employee working almost daily with the instructor. The teacher determined when the individual was sufficiently trained to begin working on his/her own and may or may not have followed that individual's case work for a period of time.

3.2
competency
The demonstration of technical skills and knowledge necessary to perform forensic analysis successfully.

3.3
distance learning
Educational methods that use models of distant, distributed, or remote education, such as video, the internet, networked multimedia, and independent or proctored study models.

3.4
knowledge, skills, and abilities
KSA
The level of information, qualifications, and experience needed to perform assigned tasks. Knowledge refers to acquired principles and practices related to a particular job; skills refer to acquired psychomotor behaviors; and abilities are talents, observable behaviors, or acquired dexterity.

3.5
offsite technical training
Information, knowledge, or training gained by interaction with or demonstration by pertinent manufactures, businesses, and laboratories (e.g., paper mill, copier manufacturer) by going to a particular location away from the usual training or work site.

3.6
principal trainer
Person with the primary responsibility for the training program administered to an individual.

3.7
qualified sources
Organizations or individuals that provide, sponsor, or otherwise arrange for specific creditable training or instruction on forensic document examination or related topics.

3.8
regionally accredited educational institution
An institution accredited by one of the regional accreditation agencies recognized by the U.S. Department of Education or foreign equivalent.

3.9
trainee
A student under in-person, direct supervision of a principal trainer on an almost daily basis. There may or may not be a financial arrangement between the trainer and trainee.

3.10
training
The formal, structured process through which a person progresses from their current level of knowledge and expertise to the level of competency required to conduct specific tasks in accordance with American National Standards.

4 Requirements

4.1 Introduction

The procedures outlined in this document are grounded in the generally accepted body of knowledge and experience in the field of forensic document examination. By following these requirements and procedures, a trainee (see **Error! Reference source not found.**) can acquire the scientific, technical, and other specialized knowledge, skill, and experience required to reliably perform the work of a forensic document examiner[1].

4.2 Requirements of Trainee

A trainee candidate shall meet the following minimum criteria.

a) Possess a bachelor's or comparable degree from a regionally accredited educational institution or equivalent (a background in a laboratory based science is preferable).

b) Demonstrate the ability to perceive colors and to discriminate forms (necessary to perceive subtle differences in similar graphic forms) in accordance with laboratory employment protocols.

c) Demonstrate near and distant visual acuity in accordance with laboratory employment protocols.

d) Demonstrate skills and abilities in written and oral communications in accordance with laboratory employment protocols.

e) Pass a criminal background check prior to training, as required by laboratory employment protocols.

4.3   Requirements of Trainer

The principal trainer shall be a FDE[1], who shall meet the following criteria.

a) Acquired the knowledge, skills, and abilities (KSAs) to practice document examination based upon a structured training program comparable in duration and subject matter as required in this standard.

    NOTE Training or experience in graphology or similar personality assessment fields is not applicable as training or experience in handwriting examination.

b) Is proficient in all topics of instruction in this program, or has engaged an associate trainer(s) with the required specialized knowledge.

c) Has at least five years of full-time post-training experience as a FDE.

d) Has access to a current and comprehensive reference library of relevant texts on forensic document examination and other topics listed below (see 4.7), including articles published in internationally recognized forensic science journals and other periodicals and journals in related areas.

e) Has access to examples of diverse casework or samples for review and discussion.

    NOTE Casework may include actual casework submitted for examination, casework from adjudicated cases, sanitized examples extracted from active casework, or mock casework examples that adequately represents casework.

f) Has access to equipment and instrumentation appropriate to each area of instruction.

    NOTE For most topics of training, it is necessary for trainers to develop and administer practical examinations for training purposes.

It is recommended that the trainer complete a course in instructor training.

The qualifications of any associate trainers or subject matter experts shall be approved by the principal trainer.

All of the above requirements shall be documented.

4.4   Pre-training Program Requirement

Agencies should conduct an inquiry into the personal, academic, and professional attributes of trainees as described in National Institute of Justice (NIJ): *A Guide for Forensic Science Laboratories, Educational Institutions, and Students*[1] prior to involving them in a training program.

4.5   Duration

The training program shall be a structured, documented, and systematic apprenticeship program of workplace supervised learning. This training shall be supervised by the principal trainer or an associate trainer. It is estimated that a trainee can achieve competency in all modules of forensic document examination in 4,000 hours[2] of full time training (extrapolated from what is known as a 2-year training program).

NOTE An hour is defined as time spent reading, examining, observing, testing, or studying topics specifically related to this training program.

The training program may be interrupted or extended due to exigent circumstances, but it is the responsibility of the principal trainer to approve any break or extension in training. To ensure continuity of training, the completion time shall not exceed the originally projected normal program length by more than 50% (e.g., a three year program may not last more than 4.5 years).

A break of a year or more in trainee's training is not recommended. Any breaks longer than six months shall be accompanied by a determination of competency through testing in the areas previously completed before training resumes.

The reason for lapses or extensions in training, or for less than 100% workplace supervised instruction shall be documented by the principal trainer.

4.6   Method of Instruction and Testing

4.6.1   Structure of Training Program

A typical training program shall take the following format.

a)   A period of "academic" style development, consisting of lectures, presentations, practical demonstrations and background reading, culminating in a knowledge examination of the key elements undertaken during the training. Depending on the subject matter, this should be covered within 15% to 20% of the relevant training time.

b)   A period of practical tests and assessments using "ground truth" material containing multiple examples of both known and questioned material (e.g., "in-house" generated exercises or old collaborative tests). This shall include extensive use of instrumentation (under instruction), development of notetaking procedures, and problem-solving scenarios. This period shall include further background reading to enhance the foundational knowledge of the trainee. This period of training shall culminate in a series of practical tests and exercises that demonstrate both general awareness and detailed knowledge of the processes involved in the examination,

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[1] Available from: https://nij.ojp.gov/library/publications/education-and-training-forensic-science-guide-forensic-science-laboratories

as well as some of the practical aspects of the process. Depending on the subject matter, this should be covered within 25% to 40% of the relevant training time.

c)   The final period of training shall comprise a series of "hands-on" exercises, utilizing casework examples of varying complexity and size (i.e., numerous cases containing many items of both the questioned and known variety), where the trainee shall be expected to demonstrate the specific KSAs required to be able to undertake the relevant examinations, as well as the practical skills associated with the examination. This process shall include notetaking, assessment of findings, and report writing. Each of these exercises shall be reviewed on completion by the trainer, who will assess, among other aspects of the work, the clarity and accuracy of the notetaking, the adherence to the standard operating procedures and processes, the assessment process undertaken (including the determination of the strength of findings the evidence) and the content of the "forensic report." Depending on the subject matter, this should be covered within 40% to 60% of the relevant training time.

Training in all forensic document examination topic areas to competency is essential so that an examiner is aware of all potential evidentiary elements during document processing and examination, as well as related potential evidentiary elements associated with other forensic disciplines.

4.6.2   Method of Instruction

The training program used by the principal trainer should be designed on a combined apprenticeship and academic model (e.g., Bloom's revised taxonomy[3]). Such a program starts with introductory material, progressing to practice, leading to demonstration of proficiency, and completing with achieving competency.

The pace of instruction should be dictated by the trainee's progress and demonstrated competency rather than a pre-defined number of training hours (it is an estimated number of hours for all involved). It is also expected that within each training module the trainee progresses from the ability to demonstrate awareness of the topics covered in the training module, to the ability to demonstrate knowledge of the topics covered in the training module, and lastly, to the trainee's ability to demonstrate competency on the topics covered in the training module.

Each module within the training program may include multiple topics that may warrant different levels of knowledge from the trainee. The trainee shall demonstrate appropriate levels of expertise for the various levels of training.

In addition to direct apprenticeship training with the principal trainer and any associate trainers, the principal trainer should encourage regular participation in professional meetings, seminars, and workshops; offsite technical training; and taking relevant courses offered by qualified sources such as academic institutions. However, a training program shall not be based only on distance learning.

The principal trainer may grant credit for prior training, experience, or participation in professional meetings (in accordance with the subject areas in 4.8) when the trainee can demonstrate and document such training or experience.

For each training module, the subject matter detailed in the training program shall be discussed with the trainee, including specific objectives, procedures, and process of verification. Written, oral,

and practical examinations shall be undertaken (the type of test dependent on the subject matter). The threshold for successful completion shall also be established. Upon successful completion of the tests and demonstrated competency, the results shall be reviewed and critiqued with the trainee prior to commencing the next phase of training. These results shall be documented and retained in the training record. The trainer and the trainee shall both retain documentation of these records.

4.6.3   Evaluation

In addition to the specific objectives, each topic shall be evaluated in multiple ways including written, oral and practical assessment of KSAs. Such assessment should include the following.

a) *Assignments*: Trainee-generated original writings in response to questions or topics posed by instructor(s).

b) *Written Evaluation*: Short Answer and essay questions.

c) *Oral Evaluation*:

    1)   presentation based upon research (for peers),

    2)   presentation based upon research before an expert panel,

    3)   oral responses to unrestricted questions or topics posed by instructors, and/or

    4)   a moot court(s) and mock case(s).

d) *Practical Evaluation:* Forensic examination of casework. Examination notes and final report shall be provided, demonstrating documentation of evidence, method of examination, and formulation of conclusions.

4.6.4   Documentation

A training record for each trainee shall be maintained by the principal trainer. A number of qualified examiners may participate in the training and development of the trainee. However, it is the responsibility of the principal trainer to determine that a trainee has successfully completed the training program. The training record shall include documentation of the following:

a)   instruction in each topic area;

b)   a bibliography of relevant literature studied;

c)   examination(s) (e.g., written test, oral test, practical exercise);

d)   examination statistics (e.g., number, type, items, reports);

e)   outside training, distributed learning, offsite technical training, relevant courses, conferences, or workshops attended;

f)   research conducted;

g)   material examined (casework and ground truth practical problems).

The trainee shall only render opinions in casework on those areas of the training program for which specific competency has been achieved (e.g., if a trainee has successfully completed the module on an Electrostatic Detection Device and should be able to write a report and testify in court provided the testimony stays within the particular area of expertise and has demonstrated competency in the court testimony module).

Credit for instruction under a different trainer shall be documented by the primary trainer and testing for competency shall be performed and documented for the topics being credited.

A primary trainer may designate a secondary instructor on a specific topic. This training and any competency testing will be documented by the secondary instructor. It is the responsibility of the primary trainer to ensure the training occurs and it is documented.

The work of some laboratories is concentrated on particular examinations. The training in areas for which the trainee will not be tasked shall still be addressed in training but could be limited to demonstrating "detailed knowledge".

4.7 Syllabus

A formal written training program shall include specific topics of instruction. The order in which they are administered is discretionary. The minimum specific topics should be as follows.

a) Introduction to Forensic Document Examination:

— literature of the field,

— evolution of the field,

— historical cases,

— scientific method,

— research methodology.

b) Evidence Procedures:

— procedures and protocols,

— relationship of forensic document examination to other forensic disciplines,

— collection and preservation,

— marking and documentation,

— chain of custody.

c) Examination Procedures:

— procedures and protocols,

— Locard's Exchange Principle,

— case organization,

— note taking,

— report writing.

d) Bias, Conclusions, and Statistics:

— bias,

— human factors,

— ethical responsibilities,

— conclusions,

— probability,

— statistics,

— uncertainty.

e) Introduction to Scientific Equipment:

— photography:

— procedures and protocols,

— general photography,

— document photography;

— digital imaging:

— digital photography,

— digital imaging techniques,

— alteration and manipulation techniques;

— instruments:

— procedures and protocols,

— physics of light pertinent to forensic document examination procedures,

— microscopy,

— measuring systems and devices,

— light sources,

— electrostatic detection devices,

— typewriter examination devices

— computers and peripherals,

— other relevant laboratory equipment;

— software:

— image editing software,

— handwriting comparison software (automated and manual).

f) Handwriting:

— procedures and protocols,

— history and theory,

— physiology of handwriting and motor control,

— handwriting systems,

— handwriting comparison process,

— identifying characteristics (distinctive and class),

— features of handwriting (e.g., variation, line quality, skill level),

— distorted handwriting,

— factors affecting handwriting (internal and external),

— tracings and simulations,

— other handwriting problems.

g) Indented Impressions:

— procedures and protocols,

— history and theory.

h) Inks and Writing Instruments:

— procedures and protocols,

— history of writing instruments and inks,

— properties of inks,

— destructive and nondestructive analyses of inks,

— writing instrument characteristics,

— sequence, direction, and pressure of strokes.

i) Paper:

— procedures and protocols,

— history of paper,

— manufacturing processes,

— physical properties (e.g., light-reactive, watermarks, dimensions, security features),

— physical matches (e.g., fibers, tears, edge striations),

— tapes and adhesives,

— indentations and impressions.

j) Physical Matches.

k) Print Processes:

— procedures and protocols,

— history of printing,

— typography,

— characteristics of printing processes

— fundamentals of examination,

— security features.

l) Typewriters, Printers, and Mechanical Devices:

— typewriters:

— procedures and protocols,

— history of typewriters,

— fundamentals of typewriter examination,

— typestyle classification,

— typing and correction ribbon examinations,

— paper fiber transfer;

— computer printers:

— procedures and protocols,

— history of computer printers,

— fundamentals of computer printer examinations,

— computer printing processes (impact and nonimpact),

— font classification;

— photocopiers:

— procedures and protocols,

— history of photocopiers,

— electrostatic and other imaging processes,

— fundamentals of examination,

— alteration and manipulating techniques;

— facsimiles:

— procedures and protocols,

— history of facsimile machines,

— imaging processes,

— fundamentals of examination,

— alteration and manipulation techniques;

— mechanical devices:

— procedures and protocols,

— history of devices (e.g., check writers, rubber and polymer stamps, paper binders, staples, embossing devices, seals and stamped impressions, fasteners, hole punchers),

— fundamentals of examination.

m) Alterations, Fabrications, and Obliterations:

— procedures and protocols

— types of alterations (e.g., page substitution, insertion),

— types of fabrications (e.g., counterfeit documents, stamps),

— types of obliterations (e.g., opaquing fluid, over-writing, chemical),

— types of erasures (physical and chemical),

— detection and decipherment techniques.

n) Charred and Liquid Soaked Documents:

— procedures and protocols,

— care and preservation,

— examination and decipherment.

o) Courtroom Procedures:

— procedures and protocols,

— terminology,

— relevant law,

— adjudication systems,

— effective communication,

— overstated testimony,

— courtroom demeanor,

— preparation and use of demonstrative exhibits,

— observation of pre-trial conferences and testimony of experts, actual or mock,

— participation as an expert witness in mock trials,

— understanding of critical challenges to the discipline.

4.8   Completion of the Training Program

Prior to completion of the training program, the trainer shall evaluate the trainee on not only aptitude and ability, but also upon demeanor and professional attitude that convey the high sense of ethics and integrity incumbent upon all forensic scientists. The training shall not be considered complete until such evaluation has been successfully performed. Documentation of such evaluation shall be retained by both the trainer and the trainee.

4.9   Recommendation for Supervised Casework

Upon successful completion of the training program, it is highly recommended that a senior examiner closely supervise the former trainee's casework for a period of time in accordance with agency's policy. It is recommended that the former trainee's agency establish such policies.

Annex A
(informative)
Bibliography

The following bibliography is not intended to be an all-inclusive list, review, or endorsement of literature on this topic. The goal of the bibliography is to provide examples of publications addressed in the standard.

1] Anderson, L. Krathwohl. D., Airasian, P., Cruikshank, K., Mayer, R., Pintrich, P., Raths, J., and Wittrock, M.. A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives. Addison Wesley Longman, Inc., USA, 2001

2] ASTM E1732, *Terminology Relating to Forensic Science*

3] ASTM E2917-19a, *Standard Practice for Forensic Science Practitioner Training, Continuing Education, and Professional Development Programs*

4] Chisum, W.J., Turvey, B. "Evidence Dynamics: Locard's Exchange Principle & Crime Reconstruction," *Journal of Behavioral Profiling*, January, 2000, Vol. 1, No. 1.

5] Parker, J.L. "Why Forensic Document Examiners' Training Must Be for a Minimum of 24 Months." *Journal of the American Society of Questioned Document Examiners*, 2005, vol. 8 -2, pp.79-82.

6] *SWGDOC Standard for Scope of Work of Forensic Document Examiners.*[2]

7] SWGDOC T01-13: *SWGDOC Terminology Relating to the Examination of Questioned Documents.*[3]

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[2]Available from : https://swgdoc.org/documents/SWGDOC%20Standard%20for%20Scope%20of%20Work%20of%20Forensic%20Document%20Examiners.pdf
[3]Available from: https://swgdoc.org/documents/SWGDOC%20Standard%20Terminology%20Relating%20to%20the%20Examination%20of%20Questioned%20Documents.pdf

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