



American Board of Forensic Document Examiners, Inc.

Study Guide

The American Board of Forensic Document Examiners (ABFDE) Study Guide is designed to provide a well-rounded basis of knowledge essential for becoming a fully qualified forensic document examiner. This document is intended to be used in conjunction with a formal training program.

ABFDE Study Guide is a reference document that:

- 1) Establishes what the Board considers to be essential aspects of training and a minimum level of competency;
- 2) Assist those desiring to establish a forensic document examination training program;
- 3) Ensure that training programs provide the topics necessary to successfully complete ABFDE certification testing; and
- 4) Assist those seeking information regarding the scope of ABFDE certification.

Additionally, ABFDE has also compiled a bibliography, a reference document of books and articles that include information on the topics outlined in the ABFDE Study Guide.

Please refer to the current version of the ABFDE Rules and Procedures Guide for the Board's policies and procedures regarding the qualifications and requirements to apply and test for certification. In addition to the qualifications outlined in the ABFDE Rules and Procedures Guide, required physical abilities of forensic document examiners include natural or corrected vision of 20/20 in each eye, successful completion of color and form blindness tests, and good oral and written communication skills.

Contents

I.	Foundational Practice and Decision-Making	3
1.	Introduction to Forensic Document Examination	3
2.	Evidence Handling and Documentation Procedures	3
3.	Specimen Material for Comparison	4
4.	Examination Methodology and Comparative Processes	4
5.	Bias, Conclusions, and Statistics	4
II.	Instrumentation	5
6.	Laboratory Equipment	5

7.	Imaging (Photography and Desktop Scanning)	5
8.	Digital Examination Tools and Software	6
9.	Storage and Transmission of Digital Evidence and Files	6
III.	Document Evidence Types and Examinations.....	6
10.	Physiology and Motor Control	6
11.	Handwriting	6
12.	Signatures.....	7
13.	Indented Impressions.....	7
14.	Printing Processes (Desktop and Commercial)	8
15.	Media Used in Printing Processes	8
16.	Security Documents	8
17.	Alterations, Erasures, and Obliterations	9
18.	Writing Inks	9
19.	Writing Instruments.....	9
20.	Ink Chemistry	10
21.	Paper	11
22.	Other Substrates	11
23.	Binding Materials.....	11
24.	Physical Matches	11
25.	Charred and Liquid-Soaked Documents.....	12
IV.	Communication, Standards and the Court	12
26.	Standards, Guidelines, and Accreditation	12
27.	Courtroom Procedures.....	13
28.	Report Writing and Technical Documentation	13
V.	Referential Knowledge.....	13
29.	Photography/Digital Document Formats and Resolutions	14
30.	Handwriting History.....	14
31.	Ink Dating.....	14
32.	Specialized Printing.....	14
33.	Facsimiles	14
34.	Checkwriters.....	14

For purposes of this study guide, topics are categorized into three internal scope levels:

- **Core Examination Level** refers to areas in which the examiner is trained to conduct examinations, comparisons, evaluations, and interpretations within an established and validated scope of practice.
- **Recognition Level** refers to areas in which the examiner is trained to recognize features, materials, or processes, understand general characteristics and limitations, and determine when referral or additional expertise is required, without conducting full analytical examinations or rendering definitive conclusions.
- **Referential Knowledge Level** refers to ancillary knowledge areas that provide contextual understanding or historical background but are not used as a basis for forensic examination or evaluative conclusions (Sections 29-34).

These scope levels are used to clearly define the extent of training, competency, and limitations associated with each topic.

I. Foundational Practice and Decision-Making

1. Introduction to Forensic Document Examination

Core Examination Level

This section addresses foundational knowledge in forensic document examination, including the literature and development of the discipline, historical context, scientific principles, and research methodology.

- Have read and studied the recommended textbooks and papers in forensic document examination from the list provided in this Board publication Syllabus/Bibliography.
- Have a working knowledge of the scientific method and applicable principles underlying forensic document examinations.
- Have an understanding of research methodology as it relates to forensic science and forensic document examination.
- Have an understanding of the historical development and foundational principles of forensic science and forensic document examination, including well-known cases involving the discipline.
- Have an understanding of foundational ethical responsibilities and professional conduct in forensic document examination.
- Have a working knowledge of concepts related to individuality and variation and how they apply to forensic document examination.
- Have a working knowledge of forensic document examination terminology.
- Have an awareness of generally accepted examination methodologies used in forensic document examination.

2. Evidence Handling and Documentation Procedures

Core Examination Level

This section addresses evidence-related procedures and protocols, including collection and preservation, marking and documentation, and chain of custody. It also addresses the role of forensic document examination within the broader forensic science framework as it relates to evidence handling and management.

- Have an understanding of the scope, purpose, and limitations of the various forensic science disciplines.

- Have a working knowledge of how forensic document examination interfaces with and differs from other forensic science disciplines and handwriting-related fields.
- Have a working knowledge of generally accepted evidence handling practices, including chain of custody, security, preservation, handling, documentation, case organization, storage, and retrieval.

3. Specimen Material for Comparison

Core Examination Level

This section addresses specimen material used for comparison in forensic document examination, including handwritten, mechanically produced, and digitally produced material, and the limitations associated with their use.

- Have an understanding of the role of specimen material in forensic document examinations and its impact on examination outcomes across forensic document examination disciplines.
- Have an understanding of different types of specimen material, including requested, collected, and non-contemporaneous material, as applicable to handwriting, signatures, printing processes, stamps, and other document features.
- Have an understanding of considerations related to the quantity, quality, and representativeness of specimen material used for comparison.
- Have an understanding of factors that may affect specimen material, including production process, operating conditions, time interval, wear, maintenance, and potential distortion or degradation.
- Have an understanding of limitations associated with specimen material, including insufficiency, lack of comparability, and their impact on forensic document examinations and evaluative conclusions.

4. Examination Methodology and Comparative Processes

Core Examination Level

This section addresses how forensic document examinations are conducted, including examination procedures and protocols, case organization, examination documentation, and report writing. It also addresses foundational forensic principles as they apply to forensic document examination.

- Have a working knowledge of generally accepted examination procedures and protocols applicable to forensic document examination.
- Have a working knowledge of case organization and documentation practices sufficient to support examination integrity, traceability, and reproducibility.
- Have a working knowledge of contemporaneous note-taking practices sufficient to support examinations, technical review, validation, and testimony.
- Have an understanding of report writing practices that clearly and transparently communicate methods, observations, limitations, and evaluative conclusions.
- Have an understanding of foundational forensic principles, including Locard's Exchange Principle, and their relevance to forensic document examination.

5. Bias, Conclusions, and Statistics

Core Examination Level

This section addresses factors that may affect forensic document examinations, including cognitive and contextual bias, human factors, ethical responsibilities, evaluative conclusions, probability, statistics, and the communication of uncertainty.

- Have an understanding of cognitive and contextual bias and human factors, and their potential impact on forensic examinations and decision-making.

- Have an understanding of ethical responsibilities and professional conduct as they relate to objectivity, transparency, and limitations in forensic document examination.
- Have an understanding of evaluative conclusions used in forensic document examination, including their meaning, scope, and limitations.
- Have a working knowledge of probability and statistics as they relate to forensic evaluations and the interpretation of findings.
- Have an understanding of uncertainty and its appropriate consideration and communication in forensic document examination.

II. Instrumentation

6. Laboratory Equipment

Core Examination Level

This section addresses laboratory equipment commonly used in forensic document examinations, including the principles underlying their operation, appropriate use, and limitations. It also addresses awareness of other analytical instruments that may be encountered in forensic document examination.

- Have a working knowledge of the use of, and an understanding of the principles underlying, commonly used forensic document examination equipment, including:
 - Stereoscopic binocular microscopes
 - Comparison microscopes
 - Typewriter grids and typewriter-related examination devices
 - Electrostatic detection devices (EDD)
 - Infrared, infrared luminescence, and ultraviolet viewing devices
 - Micrometers and precision measuring devices
- Have an understanding of the potential forensic document examination value, scope, and limitations of other analytical instruments and procedures, including:
 - Scanning electron microscopy (SEM)
 - Spectrophotometry (Raman and FTIR)
 - Laser-based techniques (Laser Ablation (LA-ICP-MS), Confocal Laser Microscopy)
 - Gas chromatography-mass spectrometry (GS/MS)
 - Soft X-ray imaging

7. Imaging (Photography and Desktop Scanning)

Core Examination Level

This section addresses principles and practices related to photography and desktop scanning as applied to forensic document examination.

- Have a working knowledge of basic photographic principles relevant to forensic applications, including lighting, focus, exposure, and scale.
- Have a working knowledge of procedures and protocols for the photography of documents and document features.
- Have an understanding of digital imaging techniques used in forensic document examination, including image capture, processing, and presentation.
- Have an understanding of the appropriate use and limitations of imaging techniques when documenting alterations or other document features.
- Have an understanding of documentation practices sufficient to support technical review, verification, and testimony.

8. Digital Examination Tools and Software

Core Examination Level

This section addresses digital tools and software used to support forensic document examinations, including image handling, enhancement, documentation, and presentation.

- Have a working knowledge of computer hardware and peripherals used to support forensic document examinations and documentation.
- Have a working knowledge of image processing or image editing software as it relates to forensic document examination, documentation, and presentation.
- Have a working knowledge of basic office software used for documentation, data management, and reporting.
- Have an understanding of the limitations associated with digital tools and software and their potential impact on interpretation.

9. Storage and Transmission of Digital Evidence and Files

Core Examination Level

This section addresses considerations related to the handling, storage, and transmission of digital files associated with forensic document examination.

- Have an understanding of common digital file types used in forensic document examination, including image, document, and data files.
- Have an understanding of considerations related to file integrity, security, preservation, version control, and traceability during storage and transmission.
- Have an understanding of best practices for maintaining original data and documenting any processing, conversion, or duplication of digital files.
- Have an understanding of chain-of-custody considerations as they apply to the transmission of digital files.

III. Document Evidence Types and Examinations

10. Physiology and Motor Control

Recognition Level

This section addresses physiological and motor control principles relevant to handwriting and signature production, and their application and limitations in forensic document examination.

- Have an understanding of basic neuromuscular processes involved in writing and signing.
- Have an understanding of motor control principles as they relate to writing movement, coordination, and timing.
- Have an understanding of how physiological factors may influence writing and signing, including age, injury, illness, fatigue, and medication.
- Have an understanding of natural variation and motor variability in writing and signing behavior.
- Have an understanding of how motor control principles inform the interpretation and limitations of handwriting and signature examinations.

11. Handwriting

Core Examination Level

This section addresses handwriting as a specialized area within forensic document examination, focusing on extended writing and handwriting systems.

- Have an understanding of the historical development of handwriting examination within forensic document examination.
- Have a working knowledge of handwriting systems and writing styles relevant to forensic document examination.
- Have a working knowledge of handwriting examination and comparison processes, including the identification and evaluation of discriminating handwriting characteristics.
- Have an understanding of handwriting features commonly examined in forensic handwriting examinations, including variation, line quality, writing skill, rhythm, and arrangement.
- Have an understanding of factors that may affect handwriting, including writing conditions and intentional or unintentional distortion.
- Have an understanding of the limitations associated with handwriting examinations and the interpretation of handwriting evidence.

12. Signatures

Core Examination Level

This section addresses signatures as a specialized area within forensic document examination, including handwritten and digitally captured signatures.

- Have an understanding of the functional and behavioral differences between signatures and extended handwriting.
- Have a working knowledge of signature characteristics commonly evaluated in forensic document examination, including fluency, rhythm, simplification, and variation.
- Have an understanding of factors that may affect signatures, including writing purpose, writing conditions, habit, practice, and intentional distortion.
- Have an understanding of common signature problems encountered in forensic document examination, including simulation, tracing, disguise, and limited or non-contemporaneous known material.
- Have an understanding of digitally captured signatures, including their modes of capture, characteristics, and limitations as compared to handwritten signatures.
- Have an understanding of the limitations and increased uncertainty often associated with signature examinations, including digitally captured signatures.

13. Indented Impressions

Core Examination Level

This section addresses the detection and examination of indented writing impressions and their forensic document examination value and limitations.

- Have a working knowledge of generally accepted methods for the detection and examination of indented impressions.
- Have an understanding of factors that affect the formation, persistence, and recoverability of indented impressions.
- Have an understanding of appropriate equipment and examination techniques used in indented impression examinations.
- Have an understanding of handling and preservation considerations for documents bearing indented impressions.
- Have an understanding of the limitations associated with indented impression examinations and their impact on conclusions.

14. Printing Processes (Desktop and Commercial)

Core Examination Level

This section addresses common printing processes encountered in forensic document examination and their recognition within defined scope.

- Have an understanding of major desktop and commercial printing processes (e.g., relief, intaglio, planographic, impact, non-impact, typewriting, digital/analog), manual printing processes (e.g. hand-stamping), and their general characteristics.
- Have an understanding of observable features associated with various printing processes.
- Have an understanding of how printing processes may influence document appearance, variability, and reproducibility.
- Have an understanding of recognition-level indicators used to differentiate printing processes.
- Have an understanding of factors that may affect device output, including wear, maintenance, operating conditions, and substrate interaction.
- Have an understanding of specimen considerations relevant to printed documents.
- Have an understanding of limitations associated with printing process recognition and the boundaries of forensic document examination in this area, including when referral to specialized expertise may be appropriate.

15. Media Used in Printing Processes

Recognition Level

This section addresses inks, toners, and other media used in printing processes within forensic document examination.

- Have an understanding of common printing media (e.g., liquid inks, toners, specialty coatings) and their general properties.
- Have an understanding of observable characteristics associated with various printing media.
- Have an understanding of how printing media may affect document appearance and examination.
- Have an understanding of non-destructive recognition-level approaches applicable to printing media.
- Have an understanding of limitations associated with printing media recognition and the boundaries of forensic document examination in this area.
- Have an understanding of when referral to specialized analytical expertise may be appropriate.

16. Security Documents

Recognition Level

This section addresses documents designed with security features and their recognition and limited assessment within the defined scope of forensic document examination. Security documents may include items such as currency, licenses, passports, identification cards, revenue stamps, and similar instruments. The parameters of production for these types of documents are typically controlled and standardized. Trainees should develop familiarity with the general production methods, printing processes, and security feature concepts associated with such documents, as well as a general understanding of issuance and distribution concepts sufficient to inform recognition-level observations.

- Have an understanding of common security features used in documents, including their general purpose and characteristics.
- Have an understanding of recognition-level approaches used to identify and describe observable security features.
- Have an understanding of general production and printing concepts associated with security documents.
- Have an understanding of general issuance procedures.

- Have an understanding of limitations associated with the recognition of security features and the boundaries of forensic document examination in this area.
- Have an understanding of the risks associated with over-interpretation or overstatement of security-related observations.
- Have an understanding of when referral to specialized training, equipment, or expertise is required.

17. Alterations, Erasures, and Obliterations

Core Examination Level

This section addresses the examination of questioned changes, additions, removals, or modifications to documents within the defined scope of forensic document examination.

- Have a working knowledge of generally accepted methods used to detect alterations, erasures, and obliterations.
- Have a working knowledge of examination techniques used to assess sequence of entries, mechanical erasures, chemical alterations, and other modifications, where supported by validated methodology.
- Have an understanding of observable indicators associated with additions, substitutions, and simulated entries.
- Have an understanding of documentation practices sufficient to support technical review, verification, and testimony.
- Have an understanding of limitations associated with alteration examinations, including factors that may preclude definitive conclusions.
- Have an understanding of when referral to specialized analytical testing is appropriate.

18. Writing Inks

Recognition Level

This section addresses writing inks encountered in forensic document examination and their examination at a non-destructive and recognition level.

- Have an understanding of common writing ink types and their general properties.
- Have an understanding of recognition-level indicators used in ink examinations.
- Have an understanding of non-destructive examination techniques applicable to writing inks.
- Have an understanding of factors that may affect ink appearance, including aging, environmental exposure, and ink-medium interaction.
- Have an understanding of limitations associated with ink examinations and when additional testing or referral may be appropriate.

19. Writing Instruments

Recognition Level

This section addresses instruments used to apply writing inks and their influence on written appearance, including general historical development and observable writing characteristics within the defined scope of forensic document examination.

- Have an understanding of common writing instruments and their general characteristics.
- Have an understanding of the basic historical development of common writing instruments sufficient to inform recognition-level assessment.
- Have an understanding of how writing instruments may influence line quality, width, ink deposition, and overall appearance.
- Have an understanding of recognition-level indicators associated with writing instruments.

- Have an understanding of factors that may affect writing instrument performance, including wear, surface, writing conditions, and maintenance.
- Have an understanding of limitations associated with writing instrument recognition and the boundaries of forensic document examination in this area.

20. Ink Chemistry

This section addresses chemical aspects of inks at a foundational and recognition level within forensic document examination. It distinguishes between recognition-level knowledge of analytical processes, foundational testing methods that may be conducted within a laboratory's validated scope, and advanced analytical techniques performed by specialized ink chemists. (Specialization in ink chemistry is outside the scope of ABFDE certification.)

A. Foundational Ink Chemistry - *Recognition-Level for All Trainees*

- Have an understanding of basic ink chemistry concepts relevant to forensic document examination.
- Have an understanding of general ink composition (e.g., dyes, pigments, solvents, resins).
- Have an understanding of how ink chemistry may relate to ink differentiation and claims related to ink dating.
- Have an understanding of destructive versus non-destructive testing considerations.
- Have an understanding of limitations associated with chemical ink examinations.
- Have an understanding of when referral to qualified ink chemists or specialized laboratories is appropriate.

B. Thin Layer Chromatography (TLC) Testing - *Core Examination Level — only if performed within validated laboratory scope*

This subsection applies only if the laboratory performs validated TLC ink analysis. If TLC is not performed within the laboratory, this topic remains at Recognition Level.

- Have a working knowledge of the principles underlying TLC.
- Have a working knowledge of generally accepted TLC procedures applicable within defined scope.
- Have an understanding of appropriate documentation and interpretation of TLC results.
- Have an understanding of limitations of TLC analysis, including differentiation versus dating limitations.
- Have an understanding of quality control and contamination considerations in TLC testing.

C. Analytical Ink Chemistry - *Referential Knowledge Level*

This subsection addresses advanced analytical techniques that constitute a specialized sub-discipline within forensic science.

- Have an understanding of the general purpose and principles of advanced analytical techniques used in ink examination (e.g., GC-MS, FTIR, Raman spectroscopy).
- Have an understanding of how results from such analyses may inform forensic document examinations.
- Have an understanding of the limitations and interpretive considerations associated with advanced ink chemistry.
- Have an understanding of the importance of avoiding actions that could compromise subsequent chemical analysis.
- Have an understanding of when referral to qualified ink chemists or specialized laboratories is required.

21. Paper

Recognition Level

This section addresses paper as a document substrate and its relevance to forensic document examination at a recognition level. It includes foundational knowledge of paper history, general manufacturing processes, and observable characteristics that may inform forensic document examination within defined scope.

- Have an understanding of the basic historical development of paper and common manufacturing processes.
- Have an understanding of general paper composition and structure (e.g., fibers, fillers, coatings) sufficient to inform recognition-level assessment.
- Have an understanding of observable physical characteristics that may be encountered in paper examinations, including dimensions, watermarks, light-reactivity, surface characteristics, and other visible or measurable features.
- Have an understanding of factors affecting paper aging, degradation, storage conditions, and environmental exposure.
- Have an understanding of handling and preservation considerations for paper evidence.
- Have an understanding of limitations associated with paper examinations and the boundaries of forensic document examination in this area, including when referral to specialized materials analysis is appropriate.

22. Other Substrates

Recognition Level

This section addresses non-paper substrates encountered in forensic document examination.

- Have an understanding of common non-paper substrates and their properties.
- Have an understanding of recognition-level examination considerations for non-paper substrates.
- Have an understanding of handling and preservation considerations specific to these substrates.
- Have an understanding of limitations associated with examinations involving non-paper substrates.
- Have an understanding of when referral to specialized expertise may be appropriate.

23. Binding Materials

Recognition Level

This section addresses binding materials (i.e. tapes, adhesives, staples, paperclips, hole punches, threads, etc.) associated with documents and document alterations.

- Have an understanding of common binding material types encountered in forensic document examination.
- Have an understanding of recognition-level indicators used in binding material examinations.
- Have an understanding of handling and preservation considerations for binding material evidence.
- Have an understanding of limitations associated with binding material examinations.
- Have an understanding of documentation practices related to binding material examinations.

24. Physical Matches

Core Examination Level

This section includes examination of torn or separated document components, edge characteristics, fracture patterns, and other physical fit features observable within forensic document examination. It does not include compositional fiber analysis or materials characterization beyond defined scope.

- Have a working knowledge of physical match examination principles, including fracture and physical fit analysis.
- Have an understanding of handling, preservation, and documentation practices for physical match evidence.
- Have an understanding of factors that may affect physical matches, including damage, distortion, environmental exposure, and handling.
- Have an understanding of limitations associated with physical match examinations.
- Have an understanding of evaluative conclusions applicable to physical match examinations, consistent with validated methodology and defined scope.
- Have a working knowledge of appropriate procedures and protocols when conducting physical match examinations.

25. Charred and Liquid-Soaked Documents

Recognition Level

This section addresses examination considerations for documents that have been damaged by fire, heat, or liquids. This section includes information on the basic procedures and protocols involved in the care, preservation, and recognition-level assessment of charred and/or liquid-soaked documents. It does not include specialized document conservation, chemical restoration, or fire debris analysis beyond the defined scope of forensic document examination.

- Have an understanding of handling and preservation considerations for charred or liquid-soaked documents.
- Have an understanding of general examination approaches applicable to damaged documents.
- Have an understanding of safety considerations related to damaged documents.
- Have an understanding of factors affecting the stability, fragility, and recoverability of information.
- Have an understanding of limitations associated with damaged document examinations and the boundaries of forensic document examination in this area.
- Have an understanding of when referral to specialized conservation, restoration, or analytical expertise is appropriate.

IV. Communication, Standards and the Court

26. Standards, Guidelines, and Accreditation

Core Examination Level

This section addresses professional standards, guidelines, and accreditation frameworks applicable to forensic document examination.

- Have an understanding of relevant standards, best practices, and accreditation requirements.
- Have an understanding of the purpose, scope, and limitations of standards and guidelines.
- Have an understanding of quality assurance and quality management principles.
- Have an understanding of the role of standards in forensic practice and testimony.
- Have an understanding of professional responsibilities related to standards compliance, including professional codes of conduct for membership organizations and certifying bodies

27. Courtroom Procedures

Core Examination Level

This section addresses the role of the forensic document examiner in legal proceedings and the professional responsibilities associated with testimony at court trials, depositions, hearings, and tribunals.

This section includes information on relevant courtroom terminology, general principles of admissibility, adjudication systems, effective and objective communication, avoidance of overstated testimony, professional courtroom demeanor, preparation and appropriate use of demonstrative materials, and awareness of critical challenges to the discipline.

Trainees should gain courtroom exposure through observation of expert testimony (mock or actual, where available) and through structured mock trial exercises designed to reinforce ethical testimony, scope awareness, and effective communication. Examiners shall present findings in an objective, transparent, and scientifically supportable manner, consistent with defined scope and applicable professional standards.

- Have an understanding of courtroom procedures, roles, and terminology.
- Have an understanding of expert witness responsibilities, ethical obligations, and the duty to the court.
- Have an understanding of testimony preparation and professional presentation.
- Have an understanding of common challenges encountered during cross-examination.
- Have an understanding of limitations on testimony and the requirement to remain within defined scope of expertise.
- Have an understanding of applicable legal standards governing admissibility of expert testimony (e.g., Daubert, Frye, or other jurisdictional standards).

28. Report Writing and Technical Documentation

Core Examination Level

This section addresses written communication of forensic document examination findings.

- Have an understanding of report structure, content, and organization.
- Have an understanding of clear, objective, and transparent language use.
- Have an understanding of how methods, observations, limitations, and conclusions are communicated.
- Have an understanding of documentation sufficient to support technical review, verification, and testimony.
- Have an understanding of report retention, disclosure, and discovery obligations.

V. Referential Knowledge

This section addresses ancillary knowledge areas that support contextual awareness, scope recognition, and informed referral within forensic document examination. These topics are not used as a basis for independent forensic examination or evaluative conclusions without specified training.

For Sections 29 through 34, trainees shall:

- Have an understanding of foundational concepts sufficient for contextual awareness.
- Have an understanding of limitations and scope boundaries associated with these topics.

- Have an understanding of the increased uncertainty and interpretive limitations associated with these areas.
- Have an understanding of when referral to specialized expertise or additional testing is appropriate.
- Have an understanding of documentation considerations sufficient to avoid overstatement or misinterpretation.

This section does not confer authorization to perform analytical examinations or render evaluative conclusions in these areas.

29. Photography/Digital Document Formats and Resolutions

This topic includes general awareness of image compression, file formats, and resolution concepts sufficient to understand potential effects on examination and documentation. It does not include digital forensic recovery, metadata analysis, or advanced image reconstruction beyond defined scope.

30. Handwriting History

This topic includes general historical development of handwriting systems and writing instruments sufficient to inform contextual understanding. Detailed historical scholarship beyond contextual relevance may be researched as needed in specific case circumstances.

31. Ink Dating

This topic includes awareness of general concepts related to ink aging and dating claims, including known limitations and sources of uncertainty. It does not include independent ink dating analysis unless separately trained, validated, and authorized. (see s.20.C)

32. Specialized Printing

Common printing processes are addressed at the Core Examination Level. Highly specialized or document-specific printing processes are included here for contextual awareness only and may require referral to specialized expertise.

33. Facsimiles

This topic includes general awareness of facsimile transmission processes and output characteristics sufficient for contextual understanding. It reflects legacy technology that may be encountered infrequently in modern casework.

34. Checkwriters

While checkwriter mechanisms share characteristics with other mechanical devices addressed in Core sections, detailed examination of antiquated checkwriter systems is treated here as referential knowledge due to limited contemporary casework frequency.