



W23 Fundamentals of Printing and Graphic Arts Examinations

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After attending this presentation, attendees will: (1) learn about the various types of office and commercial printing processes as well as the basic microscopic characteristics used to differentiate printing technologies through discussion of the fundamental concepts associated with examination and comparison of various printing technologies; and, (2) gain experience regarding printing/graphic arts examinations by case studies and hands-on assessment of actual specimens.

This presentation will impact the forensic science community by providing forensic document examiners with the knowledge and introductory experience to conduct printing process examinations. Through participation in this workshop, attendees will: (1) gain a more thorough knowledge about the fundamentals of various printing processes; (2) acquire or improve upon their ability to properly classify and identify the printing technology used to directly produce a questioned document through observation of the physical and microscopic characteristics; (3) be able to provide investigators thorough instructions regarding the collection of proper printing standards; (4) gain competence in conducting printing source determination, while recognizing limitations and crafting proper conclusions; (5) gain useful contacts within the printing and forensic document community; and, (6) be introduced to reference materials that may assist participants with printing/graphic arts examinations.

A common request by investigators in forensic document examination cases is to determine whether a certain machine was used to print or produce a questioned document submitted for analysis. To answer this question, a multifaceted approach is required. One of the first steps in this process is the classification and recognition of various printing processes by their physical and microscopic characteristics. An overview of office technologies (e.g., ink jet and toner processes) and commercial technologies (e.g., lithographic and relief processes) will be discussed. The fundamental concepts associated with the examination and comparison of various print technologies will be the major focus of this workshop. Participants will gain an introduction to the requisite knowledge needed to classify various printing processes. Participants will work on the practical application of the information provided by conducting hands-on examinations in order to identify the printing technology used to produce various provided samples.

Recognition and classification of printing processes is just the first step in determining common source. For useful comparisons, adequate standards must be selected and submitted for examination. Procedures for the production and collection of proper standards will be discussed for various printing processes. Specifics of the process involved in printing source determination examinations will be discussed and reinforced through practical comparison exercises. Limitations regarding appropriate results and conclusions that can be rendered will be reviewed, to include suggested verbiage. While the number of cases involving definitive conclusions regarding source determination are often limited in number, these types of cases can have a significant impact on investigations. One such case study, where the association of trash marks proved pivotal in securing a plea deal in a high-profile case, will be highlighted during the workshop.

Print Process Identification, Printing Characteristics, Graphic Arts

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