

Forensic Science and Crime Scene Investigation (2020)

Introduction to Forensic Science FORENSIC SCI.A

- 1 Obtain, evaluate, and communicate information to describe the role of forensic science and evidence collection from historical cases in the criminal justice system.** FORENSIC SCI.A.1
- 2 Apprise the different types of forensic science laboratories and professional organizations.** FORENSIC SCI.A.2
- 3 Apply concepts of the scientific method to forensic science and to crime scene investigations.** FORENSIC SCI.A.3

Physical Evidence FORENSIC SCI.B

- 4 Classify physical evidence based on how it is produced.** FORENSIC SCI.B.4
- 5 Plan and carry out an investigation to determine the value of physical and trace evidence.** FORENSIC SCI.B.5
- 6 Use models for the evaluation of handwriting and document evidence.** FORENSIC SCI.B.6
- 7 Construct explanations from collections of evidence, using various pathological and anthropological techniques.** FORENSIC SCI.B.7
- 8 Develop and use mathematical models to estimate height from bone length.** FORENSIC SCI.B.8
- 9 Distinguish between admissible and inadmissible scientific and technical evidence supplied by expert witnesses in criminal cases.** FORENSIC SCI.B.9

Crime Scene Procedures, Techniques, and Analysis FORENSIC SCI.C

- 10 Explain the differences between processing and analyzing evidence.** FORENSIC SCI.C.10
- 11 Analyze and interpret data from different types of crime scene evidence to determine which forensic crime lab unit would have responsibility. Example: soil, blood spatter, shoe print, hair, computer, glass, pills, fibers** FORENSIC SCI.C.11
- 12 Construct an explanation of how scientific forensic techniques used in collecting and submitting evidence for admissibility in court have evolved over time.** FORENSIC SCI.C.12

13 Plan and carry out investigations using the scientific protocols for analyzing a crime scene. Example: Set perimeter, search, isolate, collect evidence, photograph, sketch, and record. FORENSIC SCI.C.13

14 Construct an argument from evidence explaining the relevance of possible evidence at a site of an investigation. FORENSIC SCI.C.14

15 Develop models to analyze and communicate information obtained from the crime scene. Example: Properly document and sketch a crime scene. FORENSIC SCI.C.15

Blood and Physiological Fluid Evidence FORENSIC SCI.D

16 Plan and carry out an investigation to use antigens and antibodies to determine blood type and to identify crime suspect(s) based on the results. FORENSIC SCI.D.16

17 Gather and share information about forensic identification of body fluids. FORENSIC SCI.D.17

18 Summarize important considerations in forensic investigation of sexual assault. FORENSIC SCI.D.18

19 Analyze and interpret DNA evidence to match a suspect to biological samples, identifying conditions and/or situations where errors commonly occur, and cite reasons for possible errors. FORENSIC SCI.D.19

20 Collect and preserve biological evidence for DNA analysis FORENSIC SCI.D.20

21 Differentiate among blood-borne pathogens and describe their effects on the human body. FORENSIC SCI.D.21

Physical Pattern Evidence and Technological Examinations FORENSIC SCI.E

22 Analyze distinctive features of toolmark striations and impressions. FORENSIC SCI.E.22

23 Analyze distinctive features of tire, footwear, and other impression evidence. FORENSIC SCI.E.23

24 Plan and carry out an experiment using the process of chromatography to analyze and identify ink marks. FORENSIC SCI.E.24

25 Perform physical and chemical analyses of evidence obtained from a crime scene, victim, and suspect, using spectrophotometers and other appropriate equipment to answer pertinent questions in the investigation. Examples: examine broken glass to determine the direction, size, and velocity of the object which struck it; determine whether soil from a victim's shoe matches soil at the scene FORENSIC SCI.E.25

26 Develop fingerprints and classify characteristics for identification by using distinguishing features. FORENSIC SCI.E.26

27 Collect and analyze latent prints using proper forensic tools and techniques. Examples: black powder, iodine, cyanoacrylate adhesive FORENSIC SCI.E.27

28 Retrieve fingerprints and classify characteristics for identification by using distinguishing features. Examples: core, delta, bifurcation, bridge FORENSIC SCI.E.28

29 Analyze and compare examples of firearm evidence. FORENSIC SCI.E.29

30 Construct an explanation based on the path of a moving projectile to indicate how the trajectory of an object can determine the position of the person releasing the object. FORENSIC SCI.E.30

Forensic Toxicology, Drugs, and Drug Analysis FORENSIC SCI.F

31 Differentiate among the five distinct categories or schedules of drugs, including chemical composition and effects on the human body. FORENSIC SCI.F.31

32 Critique methods for laboratory analysis of controlled substance and design a solution to determine toxicity of a drug in a human based on body mass. FORENSIC SCI.F.32

33 Ask questions to develop a time-of-death estimation in an actual or simulated situation, using signs of rigor mortis and stages of decomposition. FORENSIC SCI.F.33

34 Compare the effects of various levels of alcohol in the human body. FORENSIC SCI.F.34

Arson and Explosives Investigations FORENSIC SCI.G

35 Compare types of combustion reactions and give examples. FORENSIC SCI.G.35

36 Analyze burn patterns in the investigation of fire scenes. FORENSIC SCI.G.36

37 Gather, evaluate, and share information on methods for recovery and analysis of residues of ignitable liquids. FORENSIC SCI.G.37

38 Classify explosives and explosions based on their characteristics. FORENSIC SCI.G.38

Cybersecurity FORENSIC SCI.H

39 Assess cybersecurity tools, techniques, and technologies FORENSIC SCI.H.39

40 Analyze basic computer evidence recovery techniques. FORENSIC SCI.H.40

41 Demonstrate strategies for starting and managing a network intrusion investigation. FORENSIC SCI.H.41

42 Assess methods of mobile device seizure and evidence recovery. FORENSIC SCI.H.42

Communication FORENSIC
SCI.I

43 Create incident reports and forensic laboratory analysis reports. FORENSIC
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44 Cite evidence and provide oral testimony in actual or simulated situations. FORENSIC SCI.I.44