Introduction and Crime Scenes

Missouri Grade-Level Expectations (or other standards)
This course is aligned to St. Louis University 1818 FRSC 2600 Introduction to Forensic Science

Learning Goal	Proficiency Scales
Students will be able to explain and perform some of the basic functions of a crime laboratory.	4: Student demonstrates an in-depth inference or advanced application or innovates with the learning goal. 3: Student demonstrates mastery with the learning goal as evidenced by: ● Comparing and contrasting Frye vs. US and Daubert vs Merrell Dow Pharmaceutical. ● Identifying sections of the crime lab that perform specific functions. ● Drawing conclusions about the time of death from information about rigor, livor and/or algor mortis of a cadaver. ● Organizing the information from a crime scene into a record of notes, sketch and evidence properly collected from the scene with a chain of custody log completed. ● Explaining chain of custody in terms of its importance for use of evidence in the courts. 2: Student demonstrates he/she is nearing proficiency by:

	● Recognizing or recalling specific vocabulary, such as: *Miranda Rights, fourth amendment, fifth amendment, warrant, Frye vs. US, Daubert vs. Merrell Dow, crime scene search, crime scene sketch, rigor mortis, livor mortis, and algor mortis notes, evidence container, labeling evidence, sealing evidence, chain of custody* ● Performing processes such as: ○ Evaluating types of containers to correctly collecting evidence. ○ Sketching a crime scene. ○ Note taking during the processing of a crime scene. 1: Student demonstrates limited understanding or skill with the learning goal.

Trace Evidence

Missouri Grade-Level Expectations (or other standards)
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Learning Goal	Proficiency Scales

Students will be able to identify the major types of trace evidence, and determine how to collect and examine each.	4: Student demonstrates in in-depth inference or advanced application or innovates with the learning goal. 3: Student demonstrates mastery with the learning goal as evidenced by: ● Explaining how type of glass is determined. ● Citing evidence for determination of specie and whether or not death has occurred using hair. ● Citing evidence for determination of fiber type. ● Explaining the technique used to determine dye/pigment type. ● Describing the technique used to examine soil evidence. ● Explaining how type of paint is determined. ● Identifying the correct procedures for collection of glass, hair, fiber, soil and paint. ● Differentiating between class and individual characteristics for all types of trace evidence. 2: Student demonstrates he/she is nearing proficiency by: ● Recognizing or recalling specific vocabulary, such as: *refractive index, fracturing, first shot, medulla, medullary index, cuticle, cortex, distal, proximal, natural fiber, synthetic fiber, optical properties, polarized light, gas pyrolysis, pigment, layering, soil and density gradient tubes.* ● Performing processes such as: ○ Examining fiber to determine type. ○ Examining hair to determine if human or not. ○ Identifying the fracture that occurred first in a pane of glass. 1: Student demonstrates a limited understanding or skill with the learning goal.

Fingerprints and Physical Evidence

Missouri Grade-Level Expectations (or other standards)
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Learning Goal	Proficiency Scales
Students will be able to analyze fingerprints and physical evidence.	4: Student demonstrates an in-depth inference or advanced application or innovates with the learning goal. 3: Student demonstrates mastery with the learning goal as evidenced by performing fingerprint analysis: ● differentiating between the types of fingerprint patterns; ● identifying the seven types of ridge characteristics; ● locating and identifying 4 points on a fingerprint; ● differentiating between a latent, visible and plastic print; ● differentiating between chemical and physical development of a print; ● differentiating between class and individual characteristics; ● and identifying the two steps in testing physical evidence.

	2: The student demonstrates he/she is nearing proficiency by: ● Recognizing or recalling specific vocabulary, such as: *loop, whorl, arch, ridge characteristic, bifurcation, enclosure, latent print, plastic print, visible print, class characteristic and individual characteristic.* ● Performing processes such as: ○ Lifting and correctly labeling a latent fingerprint. ○ Rolling fingerprints and identifying the type of print. ○ Identifying ridge characteristics on a single fingerprint. 1: Student demonstrates a limited understanding or skill with the learning goal.

Drug Evidence

Missouri Grade-Level Expectations (or other standards)
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Learning Goal	Proficiency Scales

Students will be able to evaluate a specific set of drugs for purposes of identification, physiological and psychological effects on humans, and legal penalties for illegal possession of each drug.	4: Student demonstrates an in-depth inference or advanced application or innovates with the learning goal. 3: Student demonstrates mastery with the learning goal as evidenced by: ● Determining the family, short-term effects, long-term effects, presumptive test, conclusive test, schedule and penalty for illegal possession for each of the following: morphine, heroin, codeine, oxycontin, fentanyl, marijuana, ketamine, LSD, PCP, alcohol, barbiturates, inhalants,methamphetamine, ecstasy, GHB, Cocaine, Crack Cocaine, and anabolic steroids. ● Determining the presumptive test used to identify each of the above drugs. ● Determining the confirmatory test for all of the drugs listed above ● Identifying the schedule and penalty for illegal possession for each of the drugs listed above. 2: Student demonstrates he/she is nearing proficiency by: ● Recognizing or recalling specific vocabulary, such as: *family, short-term effects, long-term effects, presumptive test. confirmatory test, index, schedules, morphine, heroin, codeine, oxycontin, fentanyl, methamphetamine, ketamine, ecstasy, marijuana, alcohol, GHB, inhalants and anabolic steroids.* ● Performing specific processes, such as: ○ Drawing conclusions about an unknown drug sample from procedures in a color test. ○ Recalling physiological and psychological effects of drug on humans ○ Identifying legal penalties for illegal possession of a drug 1: Student demonstrates a limited understanding or skill with the learning goal.

Body Fluid Evidence

Missouri Grade-Level Expectations (or other standards)
This course is aligned to St. Louis University 1818 FRSC 2600 Introduction to Forensic Science

Learning Goal	Proficiency Scales
Students will be able to draw conclusions about the source of body fluids from the analysis of stains collected from a crime scene.	4: Student demonstrates an in-depth inference or advanced application or innovates with the learning goal. 3: Student demonstrates mastery of the learning goal as evidenced by: ● Differentiating between mitochondrial and nuclear DNA. ● Identifying all parts of the body containing mtDNA and those containing nuclear DNA. ● Differentiating between PCR and STR DNA testing. ● Collecting and storing DNA evidence properly. ● Explaining what CODIS is and where the data in it comes from. ● Drawing conclusions about the events that occurred to create a blood stain or set of bloodstain patterns. ● Concluding which circumstances are best for the application of luminol and which are best for kastle-meyer reagents.

	2: The student demonstrates he/she is nearing proficiency by: ● Recognizing or recalling specific vocabulary, such as: *mitochondrial DNA, nuclear DNA, PCR, STR, CODIS, angle of impact, direction, speed/velocity, distance, kastle-meyer, and luminol.* ● Performing processes such as: ○ Investigating the patterns from blood drops resulting from movements in various directions. ○ Use context cues to deduce information about an interactive online crime scene scenario. 1: Student demonstrates a limited understanding or skill with the learning goal.