

Statement of Professional Learning [SPL] Specialization in Fire Scene Management and Investigation

FOID 1306: Scientific Inquiry and Fire Scene Management [e-learning]

This course examines the cause of a fire using scientific method and appropriate fire scene management practices. The course analyses the roles of different actors in fire scene inquiry, minimizing bias, and connecting the stages of an investigation to the data. The facts at the scene become the basis of the report writing on the cause of the fire using scientific methodology. This is the mandatory introductory course to the program.

Learning Outcomes:

The student will:

- 1) Acquire an understanding and appreciation of the role forensic science plays in a fire scene investigation.
- 2) Explain what evidence is by recognizing it and articulating its relevance
- 3) Explain the scientific method of fire investigation as it leads to a logically organized scene investigation from the initial response and interviews of first responders, applying scene protection through to the closing of the scene
- 4) Explain investigative bias and identify methods to reduce or eliminate the bias
- 5) Explain management of the scene of the fire using appropriate techniques, personnel and equipment
- 6) Explain collection and preservation of evidence from the fire scene
- 7) Explain the process of evidence submission to a forensic lab for expert analysis
- 8) Demonstrate the process of forming a hypothesis to the cause of the fire by using the collected data.
- 9) Identify an alternative hypothesis or modify the working hypothesis by analysing the data.
- 10) Report on the cause of the fire showing how the hypothesis was verified

FOID 2306: The Law and Fire Scene Management [e-learning]

This course covers how students apply their fire investigation skills safely at a fire scene while working within the scope of their legal authority to coordinate with the other public safety agencies present at that scene. The course emphasizes an understanding of how to work effectively, share information appropriately and maximize the value of their fire investigation findings in both legal proceedings and the identification of public safety issues. FOID 1306 must be taken prior to this course.

Learning Outcomes:

Students must demonstrate through the module tests and final exam that they have mastered all of the learning objectives. Accordingly, by the end of the course the students must demonstrate that they:

- 1) Understand the legal authority to seize and secure a fire scene and perform a fire investigation
- 2) Understand the powers available to a fire investigator
- 3) Understand the legal limits of their regulatory authority
- 4) Understand the authority of other public agencies at a fire scene
- 5) Learned to coordinate expert resources
- 6) Learned to conduct basic risk assessment
- 7) Understand the Occupational Health and Safety Act
- 8) Understand how to share information and documentation
- 9) Learn how to manage exhibits
- 10) Understand the jurisdictional issues and operational expectations in First Nations territories
- 11) Recognize and disseminate public fire safety issues
- 12) Understand legal proceedings and expert witness testimony

FOID 3036: Fire Scene Investigation [e-learning]

This course introduces the concepts of determining the origin and cause of fires under investigation. The mechanics of fire, fire chemistry, fire pattern analysis, fire movement and the interrelationship between fuel and ventilation controlled fires are examined in detail. Excavation techniques, evidence recognition, documentation and collection are considered in a variety of fire scenes. FOID 1306 and FOID 2306 must be taken prior to this course.

Learning Outcomes:

Students will be able to do the following:

- 1) Accurately describe the chemical process involved in the phenomenon known as "fire."
- 2) Accurately describe the growth of a fire, and the patterns created by fire, fuel and ventilated controlled fires.
- 3) Describe the basic elements of building construction and materials to give the fire investigator an understanding of how they can affect the growth of the fires and the patterns created.
- 4) Accurately describe the principles of solid fuel which usually depend on pyrolysis to create combustible gases and vapours.
- 5) Accurately explain and describe the fuels, ignition sources, and the dynamics as encountered in vehicles with which vehicle fire investigators must be familiar in order to carry out correct investigations.
- 6) Describe how fires in structures are investigated.
- 7) Describe how electrical fires start and spread. Additionally, students will also be able to

- describe how fires start in clothing and other types of fabrics.
- 8) Describe how explosives and incendiary devices work.
 - 9) Describe and recognize the types of evidence left by explosions and incendiary devices.
 - 10) Describe the types of evidence left by chemical fires and hazardous materials as well as understand the precautions that must be taken with processing such scenes.
 - 11) Recognize the types of damage done to human remains recovered from fire death scenes and understand the recovery issues involved with such remains.
 - 12) Recognize evidence of origin and cause of fires in automobiles and boats.
 - 13) How to properly conduct witness interviews, the proper line of questioning and understanding what constitutes a “person in authority”.

FOID 3136: Fire Scene Practicum [on-site instruction – 40 hours]

This week-long intensive course provides the students with a working knowledge of the archaeological methods used to investigate large loss fire scenes including those with human remains. Documentation and recovery methods are applied through the use of scene driven exercises based on structural and vehicular fires. All three of the e-learning courses must be completed in the proper sequence prior to taking this practicum.

Learning Outcomes:

The course candidate will be able to:

- 1) identify human bone in fire scenarios (for public sector students only)
- 2) describe and conduct the “grid search” methodology
- 3) describe how to construct and excavate grids in fire scenes
- 4) apply “Layering Analysis” while excavating a fire scene
- 5) reconstruct a fire scene from the scene documentation
- 6) conduct witness interviews
- 7) understand the role of the expert witness and courtroom testimony

FACULTY

Richard Devine

Mr. Devine spent twenty-seven years as a police officer in a multiplicity of assignments which included criminal investigation and forensic identification. Prior to his recent retirement, he spent fourteen years as the head of the Forensic Identification training program at the Ontario Police College. He is a graduate of the Bachelor of Forensic Identification program at Laurentian University and is NFPA 1033 Certified. He teaches FOID 1306.

Gregory O. Olson

Mr. Olson was a serving police officer for thirty-one years commencing with the Metropolitan Toronto Police and retiring as a staff sergeant with the York Regional Police in May 2015. He then served ten years with the Office of the Fire Marshal as a fire and explosion investigator. He has consulted internationally, has a Master of Forensic Anthropology degree from Mercyhurst College and is NFPA 1033 Certified. He teaches FOID 3136 and FOID 3036.

Christopher Williams

Mr. Williams conducted over 300 fire investigations as a Fire Investigator with the Office of the Fire Marshal. During his twenty years with the Office of the Fire Marshal, he has served as a Fire Investigation Specialist, Operations Manager in the Quality Assurance and Risk Management unit and Assistant Deputy Fire Marshal for the Fire Investigation Services. He holds a Bachelor of Science degree and is NFPA 1033 Certified. He teaches FOID 2306.

Fees: Approximately \$700 per course for each of the four courses in the SPL.

Qualification for the program: Members in good standing in CAFI will be provided automatic admission into the SPL program.

For further information, please contact: Brian Donohue, LLM, PhD
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