



# ME 765 ADVANCED FIRE INVESTIGATION

taught by

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Adjunct Professor, UWaterloo**

*a one-week modular course for:*

- Architects
- Engineers
- Designers
- Fire Investigators
- Building Consultants
- Regulatory Officials

**May 11-15, 2026**

*Available in both online & in-person formats*

**University of Waterloo  
200 University Ave West,  
Waterloo, ON, N2L 3G1**

## Fire Safety at UWaterloo

The UW Fire Safety Program is a graduate studies and professional development program. Students take a range of fire safety courses in hybrid lecture format towards MEng, MASC, PhD or Certificate Programs. For students in industry, the four course, independent UW Departmental certificate in Fire Safety may be for you!

Courses are held in week-long (40 hour) intensive lecture with laboratory format. They are available as 'Attendance Only' or with graded course work due following the course.



**Course Registration**



**Fire Safety Program**

## Course Outline

In advanced fire investigation you will learn to:

- Apply fire dynamics, heat transfer models and burn pattern analysis to explain fire evolution,
- Use codes, standards and fire testing methods to inform origin and cause assessments, and
- Employ probability-based and engineering analysis methods to reach defensible, evidence-backed opinions.

Participants are encouraged to bring their views and experiences to partake in class discussions. Course lectures are broadcast via Microsoft Teams or can be attended in person at the University of Waterloo. Course material (handouts, assignments, case studies, projects, and supplemental materials) are mounted to a course website. Registered students can access lecture videos asynchronously.

Looking for more information?

Contact the [Fire Safety Program Coordinator](#)

## ! HANDS-ON FIRE SCENE ANALYSIS !

Students **participate in live fire investigations** at the UW Fire Research Laboratory. Students dig out the scene, document fire patterns, and analyze evidence to determine origin and cause — bridging classroom theory with real-world investigative practice.

## TENTATIVE SCHEDULE

- Day 1: Introduction to Fire Investigation, Codes and Standards, Heat Transfer
- Day 2: Fire Dynamics and Applications, Guest Lecture
- Day 3: Building Systems and Electronic Data, Wildland Fires, Electrical Fires, Explosions
- Day 4: Fire Testing, Fire Modelling, Guest Lecture
- Day 5: Fire Toxicity, Professional Opinion and Practice Guidelines, **\*Fire Scene Analysis\***



## PROJECTS & EVALUATION

Two independent projects and a case study allow students to fine tune their learning to match their interests:

- Case study analysis of real fire events
- Research project on a fire investigation topic
- Major project report from live burn investigation

Assignments and course projects are used in the evaluation of each student. Due dates and mark weightings are provided during the lecture period.