

# **Principles and Application of Egress Modeling**

## **Course Description**

This two-day seminar addresses human response in fire and the tools that are available to represent this response within the engineering process. The seminar outlines the theoretical and empirical basis of our current understanding, making frequent references to actual incidents as well as engineering applications. This is followed by a broad discussion of the tools available to represent human response – from engineering calculations to computational simulation models. The discussion of the underlying assumptions and techniques of these models is supported by demonstrations and case studies. In all instances, the strengths and limitations of the theory, the data available, and the tools employed are clearly outlined, providing the audience with a realistic expectation of what is available. The subject matter (i.e. human response) and the modeling approaches are presented together allowing the students to assess, select, and employ such tools in a more informed and integrated manner.

## **Learning Objectives**

Upon completion participants will be able to:

- Understand the subject matter that then informs their theory development and data collection.
- Know which factors need to be included in their calculations, the data that is available to support these factors, and the tools that are able to represent them.
- Identify the impact that their products may have upon an actual population, why this impact is important, and what tools can be used to demonstrate this impact.
- Explain the picture of evacuee performance for training, education, and emergency response applications.
- Know the impact of structural and procedural designs upon the occupant population.
- Comprehend the complexities of human response more clearly, the data and theory available, and the strengths and limitations of the tools that can be used in a performance-based design.

## **Pre-requisite**

General understand of fire protection engineering as it relates to human behavior in fires.

## **Who will benefit: Experience Level- Intermediate**

FPEs, Fire Marshalls, AHJs, Code Officials, Plan Reviewers, Design Professionals (Architects/Engineers) Local Fire Municipalities.

## **Materials Needed**

None

## **Course Assessment**

Participant will be assessed via a written test. A passing score of 70% is required to obtain a Certificate of Completion.

## **Professional Development Hours**

Upon completion participants qualify for 14 PDHs and 1.4 CEUs. A Certificate of Attendance will be awarded.