

# Fire Safety Program - ME 7xx Human Behaviour in Fire

## Course Objectives

This course introduces notions of human behaviour in fires, including cognition perception, problem solving, decision-making and information processing. Concepts such as 'Myth of panic', commitment, affiliation, familiarity and role are reviewed and issues related to escape time introduced. Methods for post-fire time line reconstruction are outlined. Techniques and ethics around gathering data on human behaviour in fire are presented.

In addition to case studies, class discussion and design examples, students gain experience in the limitations, uncertainty and use of computational models and hand calculations associated with evacuation analysis. At the end of the course, they will be able to use advanced behavioural principles and tools in performance based building design and related fire safety applications.

## Course Outline

- Fire and People
- Environmental (Social) psychology
- Cognition and perception
- Decision making
- Movement of people
- Data gathering and Ethics
- Evacuation modelling
- Managing uncertainty in design
- Building codes and design
- Post-fire time line reconstruction

## Recommended References

- CD Compendium Human Behaviour in Fire, Interscience, 2015
- Cuesta, Abreu, Alvear (editors), Evacuation Modelling Trends, Springer, 2015.
- The SFPE Handbook of Fire Protection Engineering, Springer, 5th Ed., pgs 2012 - 2551. 2015.

## Additional course notes for supplemental reading.

Note: The SFPE handbook requires a membership to purchase at \$299. This is the student price. Evacuation Modelling Trends can be purchased as a pdf on the springer website for \$69

## Contact Us

For information on Fire Safety Group courses, registration, and admissions:

Allison Walker  
Graduate Administrator, MEng & Recruitment  
Dept. of Mechanical and Mechatronics Engineering  
University of Waterloo  
Engineering 5, Room 3019  
200 University Avenue  
Waterloo, ON, Canada  
N2L 3G1

Phone: (519)888-4567, ext. 33341  
e-mail: a22walker@uwaterloo.ca

