



*Training Course:
Fire Dynamics and Modelling*

*18 - 22 July 2027
Cairo (Egypt)*

Training Course: Fire Dynamics and Modelling

Training Course code: SC234774 From: 18 - 22 July 2027 Venue: Cairo (Egypt) - Training Course Fees: 4100 € Euro

Introduction

The Fire Dynamics and Modelling course will follow a structured approach starting from the general fundamental principles of combustion flammability and heat transfer, and will lead you through to the more specific study of fire spread and fire development in compartments.

The principles of fire protection practice and technology will be discussed within the context of understanding the fire development mechanism and the response of structures to fires.

Your learning experience will be enhanced through theoretical examples and brief problems that you'll be asked to attempt on your own or in groups.

Course Objectives

On completion of this course, you should:

- be able to apply general combustion and engineering principles to fires
- know the parameters that influence flame spread and steady burning and be able to quantify the burning rate in compartment fires
- predict the rate of development of the fire, the onset of flashover, and appreciate the application of these concepts to fire protection design
- understand the factors influencing smoke toxicity and movement
- be aware of the predictive tools that are available and become familiar with the application and use of such tools, through "hands-on" practice.

Target Audience

This course is for you if you wish or need to gain a comprehensive, scientifically-based analysis and engineering quantification tools, of fire development and consequence assessment in industrial and residential scenarios.

Perhaps you're involved in the design and operation of buildings and chemical plant architect, civil engineer, chemical engineer or in the design of protection systems passive and active system developer, manufacturer, installer.

Maybe you're responsible for building and plant safety on a day-to-day basis, a regulator or adviser Health and Safety Executive, Fire Service, Home Office, local authority, building control office, consultant, insurer or firefighting professional.

T h i s c o u r s e w o u l d a l s o b

Course Outlines

Day 1

Fundamental processes

- Physical concepts
- Fuel and combustion processes and fundamentals
- Limits of flammability
- Heat transfer: conduction and convection

Day 2

Radiation, ignition and flame spread

- Radiation from fires
- Ignition - general, gaseous/liquid fuels and solids Spread of flame
- Fire combustion products and toxicity as a function of ventilation conditions

Day 3

Pool fires, jet fires and cloud fires

- Steady burning diffusion fires
- Pool fires in the open
- Jet fires
- Radiation from flames
- Example calculations: radiation flux from flare on escape route
- Pool and jet fires, large-scale tests
- Pool and jet fires in compartments
- Cloud fires

Day 4

Compartment fires

- The growth periods
- Flashover

- The post-flashover period and back draughts
- Fire performance of structures
- Smoke movement

Day 5

Compartment fire modelling

- Using CFD models
- Fire behavior and modern buildings
- A zone model in detail - CFAST

Registration form on the Training Course: Fire Dynamics and Modelling

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