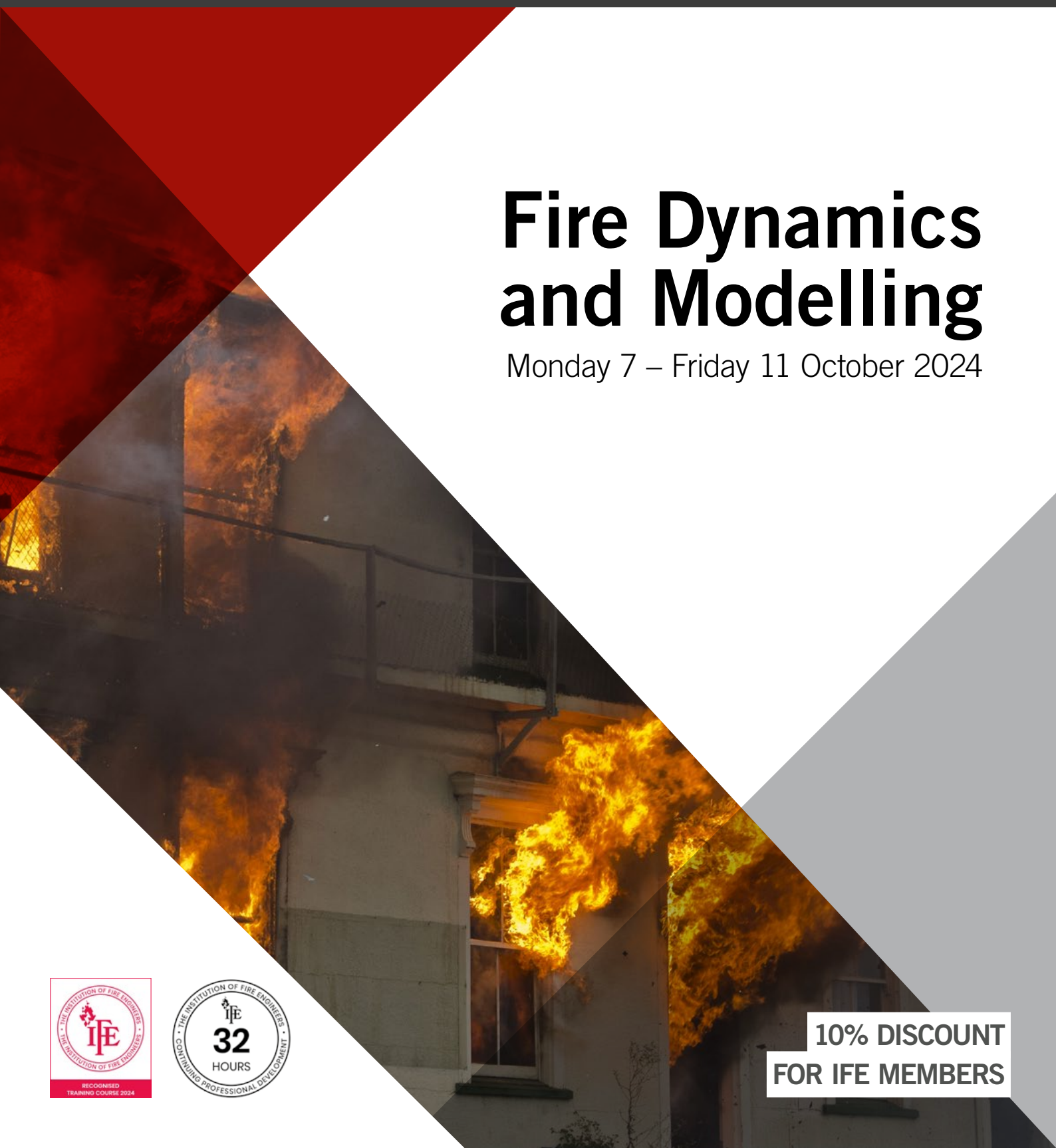
Faculty of Engineering and Physical Sciences

UNIVERSITY OF LEEDS

Fire Dynamics and Modelling

Monday 7 – Friday 11 October 2024



RECOGNISED TRAINING COURSE 2024

32 HOURS

10% DISCOUNT FOR IFE MEMBERS

Fire Dynamics and Modelling

Monday 7 – Friday 11 October 2024

Course Director
Dr Roth Phylaktou, School of Chemical and Process Engineering, University of Leeds

About the course

This course provides delegates with a comprehensive understanding of fire development, starting from fundamental scientific principles. It equips you with the knowledge to design safer systems, buildings, and processes that protect life and property while allowing greater design freedom.

The course follows a structured approach, beginning with general principles of combustion, flammability, and heat transfer, then moving to specific studies of fire spread and development in compartments. We also cover open fires, such as pool and jet fires.

Throughout the course, we discuss fire protection principles and technology in the context of fire development mechanisms and the response of structures to fires. Your learning experience will be enriched through worked examples and brief problems, which you will tackle individually or in groups (please bring a calculator).

On the final day, you will have the opportunity for hands-on experience with a predictive PC package.

What our previous delegates say:

"Fire Dynamics and Modelling provides a detailed insight and understanding of combustion processes and fire development with real life examples. Overall a very well structured and comprehensive course."
Grega Robic, Fojkarfire d.o.o.

"A course well worth attending for anyone interested in Fire Dynamics, regardless of vocational sector of employment."
Jason Seward, Affinity Fire Engineering

Course Accreditation

The Fire Dynamics and Modelling CPD course, Leeds, has been approved for **32 CPD hours** in total by the Institution of Fire Engineers (IFE) and is an IFE recognised training course.

Course aims

On completion of this course, delegates 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

Who should attend

This course is ideal for anyone seeking a comprehensive, scientifically-based analysis and engineering quantification of fire development and consequence assessment in industrial and residential scenarios.

It is particularly beneficial for those involved in the design and operation of buildings and chemical plants, such as architects, civil engineers, and chemical engineers, as well as those designing protection systems, including passive and active system developers, manufacturers, and installers.

Additionally, the course is valuable for individuals responsible for building and plant safety, such as regulators and advisors from the HSE, Fire Service, Home Office, Local Authorities, Building Control Offices, consultants, insurers, firefighting professionals and accident investigators. Young researchers in this field will also benefit from attending.

View the full programme and book your place online at **https://tinyurl.com/FireDynamicsandModelling2024**

Programme

Unless otherwise stated, all presentations in the programme below will be delivered by the course director, Dr Roth Phylaktou, University of Leeds.

Monday 7 October 2024

Fundamental Processes

08.30 Registration and coffee
09:00 Physical concepts
10.15 Coffee
10.30 Fuel and combustion processes and fundamentals
12.45 Lunch
13.30 Limits of flammability
15.00 Tea
15.15 Heat transfer: conduction and convection
17.00 End of day one

Tuesday 8 October 2024

Radiation, Ignition and Flame Spread

08.45 Coffee
09.00 Radiation from fires
10.20 Coffee
10.35 Radiation from fires (continued)
12.25 Lunch
13.10 Ignition
14.40 Tea
14.55 Spread of flame
15.45 Fire combustion products and toxicity as a function of ventilation conditions
Professor Gordon Andrews, University of Leeds
17.00 End of day two
19.00 Course dinner

Wednesday 9 October 2024

Pool Fires, Jet Fires and Cloud Fires

08.45 Coffee
09.00 Steady burning diffusion fires
10.00 Coffee
10.15 Pool fires in the open
11.15 Gaseous Jet Flames
Professor Derek Bradley, University of Leeds
12.00 Radiation from flames
12.40 Lunch
13.25 Example calculations: radiation flux from flare on escape route
14.00 Large scale fire tests – pool and jet fires
Rob Crewe, DNV GL
15.20 Tea
15.35 Pool and jet fires in compartments
Professor Geoff Chamberlain, Consultant, Waverton Consultancy Ltd, previously Shell Global Solutions (UK)
16.20 Cloud fires
Peter Rew, ATKINS
17.20 End of day three

Thursday 10 October 2024

Compartment Fires

08.45 Coffee
09.00 The growth period
10.30 Coffee
10.45 Flashover
12.45 Lunch
13.30 The post-flashover period and backdraughts
15.00 Tea
15.15 Fire performance of structures
Dr Florian Block, BuroHappold Engineering
16.00 Smoke movement
17.15 End of day four

Friday 11 October 2024

Compartment Fire Modelling

08.45 Coffee
09.00 Using CFD models
Jeremy Ockenden, Affinity Fire Engineering
10.30 Coffee
10.45 Fire behavior and modern building design
Ben McColl, OFR Consultants
11.45 A zone model in detail – CFAST
12.35 Lunch
13.35 Hands on experience with a zone model
16.20 Tea and issue of attendance certificates
16.35 End of day five and course

Please note, although we remain devoted to the programme specified, we reserve the right to vary the programme in detail if required to do so by factors beyond our control.

Further information

Course Fees

The following course fees include the cost of tuition, course materials, lunches and light refreshments for the days of attendance:

Full five days **£1950** any one day **£485**
10% discount for Institution of Fire Engineers (IFE) members.

Venue

The course venue is Weetwood Hall Estate, located at Otley Road, Weetwood, Leeds LS16 5PS. For additional information, please visit www.weetwood.co.uk

Accommodation

If you require accommodation, and wish to stay at the course venue Weetwood Hall Estate please contact Emma Barker or Stevie Standerline E: reservations@weetwood.co.uk / T: 0113 230 6000 quoting 'CPD' and the 'Fire Dynamics' course.

Bedrooms are subject to availability with free of charge cancellation 48 hours prior to arrival:

Friday – Sunday – bed and breakfast **£93**
Monday – Thursday – bed and breakfast **£97**

Rates are per night for sole occupancy in a classic double room and inclusive of VAT.

A list of alternative hotels is available on request.

Course dinner

The course dinner will be held at a Leeds city centre restaurant and is included in the course fee. This will take place on Tuesday evening and transport from and to Weetwood Hall Hotel is provided. The dress code is smart casual.

How to Book

Please book your place for this course through our secure Online Store, using debit or credit card, following the instructions below:

1. Visit our Online Store at: http://store.leeds.ac.uk
2. Select Conferences and Events in the left-hand navigation bar and 'CPD Faculty of Engineering and Physical Sciences'
3. Select the relevant course, click on 'Book Event' and complete your booking details

You will receive an automatic confirmation email within 24 hours of your booking.

Get in touch

Helen Forsyth – Course Coordinator
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Faculty of Engineering and Physical Sciences
University of Leeds

T: +44 (0)113 343 8104
E: cpd@engineering.leeds.ac.uk
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CPD, Conference and Events Unit, University of Leeds
@LeedsUniCPD

Terms and conditions for booking

Payment
Payment by debit/credit card should be made at the time of booking via the Online Store. If for exceptional reasons you are unable to book and pay online a purchase order document will be required to support a manual booking process. Our standard payment terms are 30 days from date of invoice however payment must be made prior to attendance. Attendance may be refused if payment has not been received.

Changes made by the University of Leeds
The course programme may have to be re-scheduled or the speakers changed for reasons outside our control. The University of Leeds reserves the right to cancel or postpone a course, in which case fees will be refunded in full. In the event of cancellation, the University will not be held liable for delegates' travel or accommodation expenses.

Where a delegate cancels a registration
For cancellations made within seven days of booking: a full refund is payable unless the course starts within the next seven days, in which case the full fee is payable and no refunds will be made.

For cancellations made after seven days of booking: written cancellations received up to 15 working days before the course will be subject to an administrative charge of 20% of the total fee. Within 15 working days of the course the full fee is payable and no refunds will be made.

For non-attendance: the full fee is payable and no refunds will be made. Appropriate course materials will be sent to the registered delegate.

In the event of cancellation, the University will not be held liable for or refund any incurred travel or accommodation expenses. Substitutions may be made at any time.

Data/Privacy
Your right to privacy is important to us. We will only use your information to provide information on our CPD courses and relevant events. We will not pass your details on to any other organisations. The ways in which your personal data may be used when you provide it to us are defined in our Privacy Notice at https://eps.leeds.ac.uk/privacy.

If you have opted in to receive details of future CPD courses from us you can unsubscribe at any time by emailing us at cpd@engineering.leeds.ac.uk and your details will be removed from our database.

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