

Fire Dynamics Simulation Advanced Course

Course Description:

This is a two day hands-on course intended for engineers who have been in this industry and would like to hone and advance their skills in FDS 6.1.2. It will be a good opportunity to update your skills and to keep up with the changes in FDS 6.1.2 and its related software.

The objective of this interactive workshop is to be able to apply general combustion and engineering principles to fires, knowing the parameters that influence flame spread and steady burning and quantifying the burning rate in compartment fires, predict the rate of development of the fire, onset of flashover and appreciate the application of these concepts to fire protection design. It enables participants to perform simple "hands-on" FDS 6.1.2 and gain competitive advantage when utilizing performance-based simulation for their projects. This workshop ensures that participants are able to create their own simple FDS 6.1.2 input file from scratch without assistance.

Event Detail:

- Date: 03 Mar 2015 - 06 Mar 2015 (SGP)
- Time: 9am - 6pm
- Venue: TBC (SCDF Campus)

Who Should Attend:

- Fire Safety Engineer
- M & E Engineer

Jointly Conducted by:

- BSD
- Thunderhead Engineering Consultants, Inc.

CPD/SCDF Points (Pending)

CPD (For Registered Engineers): Beginner - 14 points, Advanced - 14 points

SCDF (For Fire Safety Engineers): Beginner - 14 points, Advanced - 14 points

Total Maximum points: (2 x 7 Hours/day) = 14 points

Participants are to bring along laptop computers to participate in the hands-on sessions. Laptop computer running XP Service Pack 3 or higher will be required.

Free 30-day trial licenses for PyroSim provided to all attendees.

Registration Cost:

- Beginner Course: \$900
- Advanced Course: \$900
- Full Course: \$1,800

Registration Procedures:

Interested participants are required to complete the following registration forms and return it with your cheque payment in favour of "Building System & Diagnostics"; marked Account payee only to the above address.

WORKSHOP 2: FDS ADVANCED COURSE

Duration: 2 x 7 hours/day = 14 hours (excluding lunch and coffee breaks)

Cost: SGD 900

Venue: SCDF HQ

DAY 1

Advance to FDS Workshop Day 1 (5th March 2015)	
Time	Topic
0900 – 1100	Recap of FDS 6.1.2 - Modeling basics
1100 – 1130	Coffee Break
1130 – 1300	Computational Fluid Dynamics Overview Advanced features of FDS 6.1.2 : Review - Modeling of external wind influences : Enlarged domains - Sprinkler & smoke detector operation and “spot data” from Devices - Material specifications and their influence on results - Multiple Meshes - Modeling impulse fans
1300 – 1400	Lunch and Networking
1400 – 1600	Topics: - Stair stepping sloped and curved surfaces, PyroSim - Extract and Supply, HVAC - Tracking species through the domain - Boundary Conditions, Surfaces and Domain
1530 – 1600	Coffee Break
1600 – 1730	- Flame spread, Materials/Pyrolysis - Basic and Advanced Controls, Creating/Removing Obstructions - Advanced Smokeview techniques: Custom iso-surfaces, texture mapping, render files and cad view. - Using PyroSim to develop FDS 6.1.2 input files
1730 – 1800	Review of Day 1 session. Q & A
1800	End of Day 3

Advance to FDS Workshop Day 2 (6th March 2015)	
Time	Topic
0900 – 1000	Introduce Distance Education Local Resources for Code and Modeling Guidance
1000 – 1030	Coffee Break
1030 – 1200	- Introduction to PyroSim - Integrate PyroSim model and FDS 6.1.2 results into an Pathfinder Evacuation
1200 – 1300	Lunch and Networking
1300 – 1500	FDS+EVAC - Obtaining FDS + Evac - Documentation - Application Examples - Validation and verification
1500 – 1530	Coffee Break
1530 – 1730	- Practical session, consolidation, interpretation of results - Peer Review
1730 – 1800	Review of Day 4 session. Q & A
1800	End of Day 4

Presenter

Bryan Klein
klein@thunderheadeng.com
www.thunderheadeng.com
(785) 770-8511

Mr. Bryan Klein is currently the Product Manager for PyroSim and Pathfinder at Thunderhead Engineering Consultants, Inc. He handles sales and support issues, along with training both online and on-site.

Mr Klein formerly worked as part of the Fire Fighting Technology Group in the Engineering Laboratory at the National Institute of Standards and Technology (NIST), where he provided assistance in many areas of research and development. One of the primary duties of the Fire Modeling Group was to establish modern best practices for FDS and Smokeview (SMV) code development, distribution, archiving and bug reporting. As the FDS and Smokeview Community Manager, he assembled a cohesive collaboration and communication platform to improve developer and support communication between the core development team and users of the FDS-SMV software package. In addition, as a part of the simulation and reconstruction of actual fire incidents process, he specialized in acquiring and generating geometry, materials and ignition properties, creating input for fire models and conducting parametric studies of ignition location, ventilation and material flammability for specific scenarios.

Prior to working at NIST, Mr. Klein was employed at Western Fire Center, Inc. in Kelso, WA for approximately 5 years where he performed many of the same duties as he would eventually perform at NIST, along with expert witness and litigation support activities and Laboratory Quality Assurance Management.

Mr. Klein also served in the United States Air Force and holds a BS degree in Information Technology.