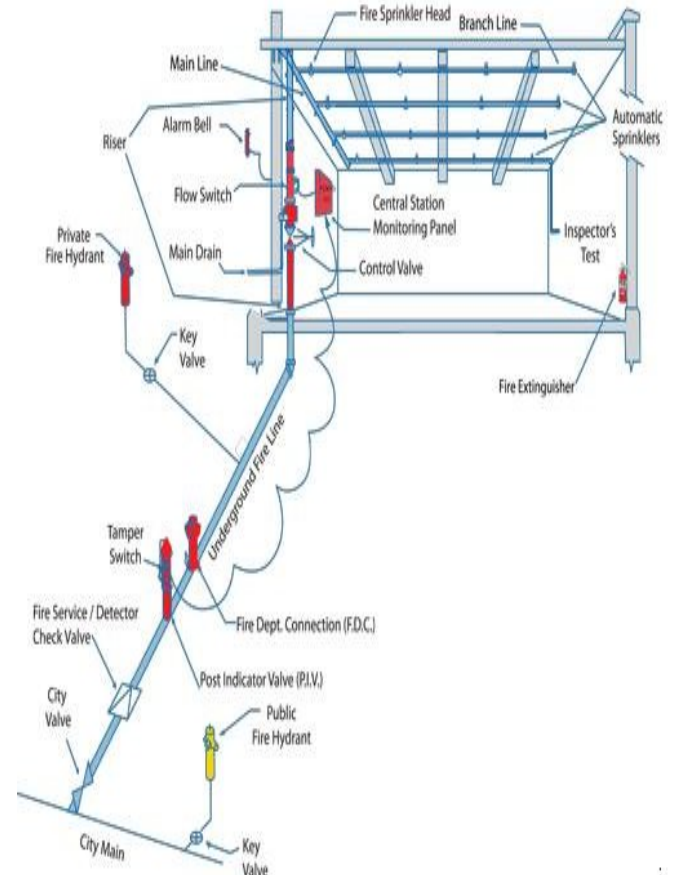
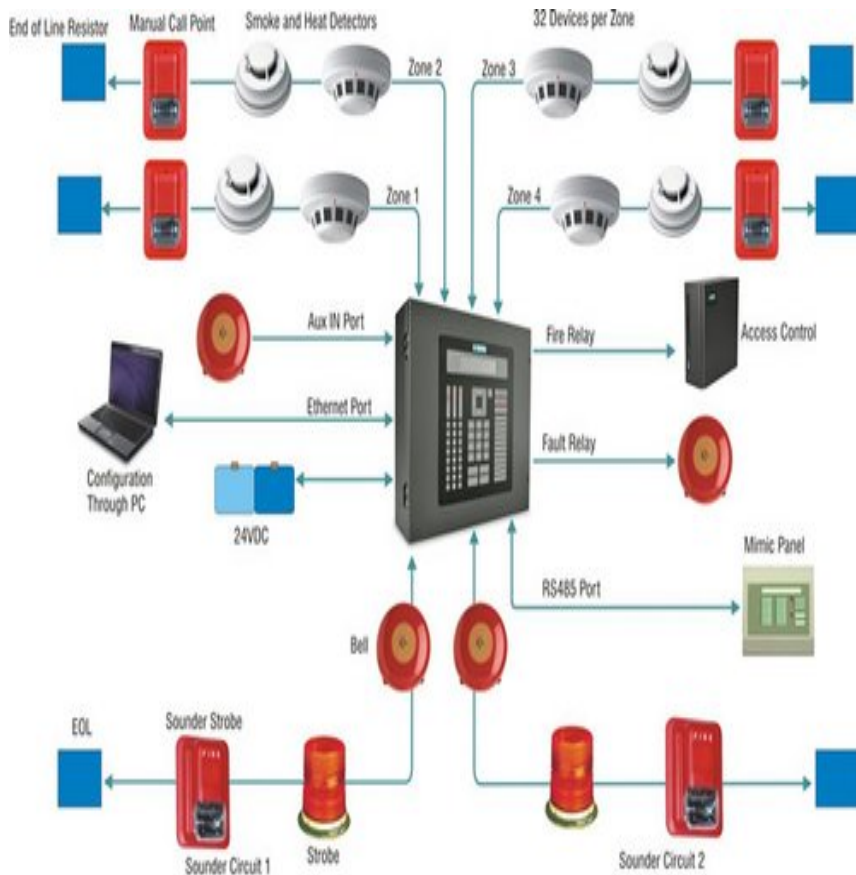


Fire Protection Engineering Systems Design per NFPA



Course Date & Venue: STARTS EVERY MONTH 01st - 2018 – IPEBS, Hyderabad, INDIA.

Note: Download IPEBS Training Calendar for exact course start dates for the year 2018 from www.ipebs.in



“Numerous tips & tricks throughout the course make it very practical to your learning approach.”

“The most extensive training topics & course material as per the current codes & standards which covers all Design & Detailing, Maintenance Standards of Fire Protection Systems.”

“Experience the working atmosphere in the class itself during Project work.”

Trainer Synopsis

“Faculty with over a decade of USA Experience”

“Practising MEP Consultant for India / Gulf Projects”

PROGRAM OVERVIEW

Fire Protection Engineering Systems Design per NFPA

This is a fast-paced program designed to present all major topics relative to the Fire Safety Systems Design & Engineering per NFPA. The program duration is 25 days of Full time Instruction consisting of concept theory, problem solving, design, detailed engineering along with a project.

The program duration is 30 days of Full time Instruction consisting of concept theory, problem solving, design, detailed engineering & drafting along with a project.

WHO SHOULD ATTEND

This course is applicable to mechanical and HVAC engineers, process engineers, architects, building designers, contractors, energy auditors, facility managers who are involved in the design and installation of plumbing systems.

WHAT YOU WILL LEARN

This course aims to provide, in a structured manner, an organized and comprehensive framework for fire safety and building fire protection design. The course particularly aims to help those who have recently been given responsibility in fire safety and those who seek structured and comprehensive guidance on the fundamentals of fire safety design methods and approved practices. On completion of the course the participants should be in a position to make a significant contribution in the design of appropriate fire safety systems for a fairly complex building.

MAJOR COURSE MODULES

1) Fire Protection Engineering Systems Design per NFPA

- Fire Safety Systems
- Fire Detection & Alarm Systems
- Fire Suppression Systems
- Water- Based Fire Systems – Sprinkler, Standpipe, Hydrant.
- Foam-Based Fire Systems – Hi, Med, Low Expansion.
- Chemical Based Fire Systems- Dry Powder, Wet Chemical.
- Gaseous Based Fire Systems- CO₂, FM-200, NAFS-III.
- Passive Fire Protection

Walk – in for a Training Demo – Orientation / Course Overview by Course Upcoming Start Date.

Training Features:

- Individual Attention & Placement Guidance.
- Hundreds of Students working in India & Middle East.
- Excellent Training Material provided including (Training Manual, Design Data Charts, Drawings & Design of Sample Projects)

DETAILED COURSE DESCRIPTION

I) Fire Protection Engineering Systems Design per NFPA

Module – 1) Fire Systems

- Introduction
- Requirement
- Absolute Safety
- Protection Against Hazards
- Reasons for Fire
- Building Services Modernization
- Classification of Fire Safety Systems
- Passive Fire Safety
- Active Fire Safety
- Fire Detection & Alarm System
- Fire Suppression System
- Codes & Standards
- Organizations
- Design and steps for protection
- Fire Dynamics
- Fire Tetrahedron
- Fire Extinguishing Methods
- Fire Extinguishing Agents
- Fire Classes
- Comparison of Classes
- Fire Class & Extinguishing Agent

Module – 2) Fire Detection & Alarm Systems

A. Introduction

- Role
- System
- Architecture
- Interfacing
- System & Products (Codes & Standards)
- System Components

B. Alarm Devices

- Purpose
- Types

I. Manual Detection

- Break Glass
- Types
- Location
- Mounting Height
- Distance

II. Automatic Detection

- Fire Signatures
- Fire Development
- Smoke Detectors
- Ionization
- Photoelectric
- Heat Detectors

DETAILED COURSE DESCRIPTION (contd)

- Fixed
- RoR (Rate of Rise)
- Flame Detectors
- Fire-Gas Detectors

III. Special Applications

- Air Sampling Detector
- Duct Detector
- Beam Detector
- Aspirating systems

D. System Design

- Search distance
- Mounting Height
- Obstruction
- Placement
- Coverage Areas
- Spacing
- Corridors
- Distance from Obstructions
- Flat/Apex ceilings
- Beams/Partitions
- Voids
- Lift Shafts/Stairs
- Zoning

E. Wiring

- Wires
- Clamping
- Detector Base
- Wiring Classes
- Class a/Class b
- Tapping
- Wireless Systems

F. Fire Alarm Control Panel:

- Functions
- Types - Conventional/Addressable
- Conventional
- Functioning
- Control Panel
- Schematic
- Application Example
- Addressable
- Functioning
- Control Panel
- Schematic
- Application Example
- Repeater Panel
- Isolator Module
- Monitor Module
- Control Module
- Lift Interface
- Door Control
- Fire Phone Auto Dialer
- Gate Barriers

DETAILED COURSE DESCRIPTION (contd)

G. Networking

- Master/Slave
- Application Example
- Networking Cable

Module – 3) Fire Suppression Systems

A. Portable Fire Extinguishers

- Standard
- Purpose
- Location
- Mounting Height
- Search Distance
- Number
- Ratings
- Method of Operation

B. Foam-Based Fire Suppression

- Introduction
- Standard
- Working Components
- Types
- Chemical Foam
- Protein based Mechanical Foam
- Low expansion
- Medium expansion
- High expansion
- Special foam
- Synthetic Detergent foam
- Limitations

C. Gaseous-Based Fire Suppression

- Introduction
- Types

L. Carbon Dioxide Systems

- Standard
- Properties
- Drawbacks
- Extinguishing Mechanism
- Method of Application
- Total Flooding System
- Local Application System
- Typical Applications
- System Configuration
- Storage
- Method of Actuation
- Automatic
- Manual
- Discharge Requirement
- Total Flooding Agent Quantity
- Detection & Control Operation

DETAILED COURSE DESCRIPTION (contd)

II. Halon Systems

- Types
- Standards
- Characteristics
- Drawbacks
- Physical Properties
- Extinguishing Mechanism
- Typical Applications
- System Configuration
- Method of Actuation
- Discharge Requirement

III. Clean Agent Systems

- Standards
- Definition
- Types
- Chemical
- Inerting
- Properties
- Selection Criteria
- Uses
- Typical Applications
- Limitations
- System Configuration
- Method of Actuation
- Discharge Requirement
- Design Concentration
- Discharge Requirement
- Total Flooding Agent Quantity
- Key steps in Designing
- Hazards
- General precautions

D. Chemical-Based Fire Suppression

- Introduction
- Standards
- Types

I. Dry Chemical System

- Types
- Comparison
- Characteristics
- Drawbacks
- Physical Properties
- Extinguishing Mechanism
- Typical Applications
- System Configuration
- Method of Actuation
- Method of Actuation

DETAILED COURSE DESCRIPTION (contd)

II. Wet Chemical System

- Introduction
- Types
- Extinguishing Mechanism
- System Configuration
- Method of Actuation
- Kitchen Equipment Fire Suppression

E. Water-Based Fire Suppression

- Introduction
- Fire Extinguishing Properties
- Disadvantages
- Building Occupancy Classification
- NFPA Standards Related to Fire

I. Sprinkler system

- Fire Sprinkler Systems
- Sprinkler Head Construction
- Sprinkler Temperature Ratings
- Sprinkler Head Configurations
- Sprinkler Head Types
- Types
- Components
- Sprinkler System Description
- Riser, Feed Main, Cross Main, Branch Line
- Typical Piping Layouts – Grid, Loop, Tree
- Hazard Classification- Light, Ordinary, Extra, Special
- Floor Area Limitation
- Protection Area of Sprinkler
- Spacing
- Location
- Sprinkler Pipe Sizing – Pipe Schedule Method
- Sprinkler Piping pressure
- Piping Material, Piping Joints, Pipe Fitting Material
- Pipe Wall thickness
- Sprinkler Head K-Factor
- Basic Design Circuit, Remote Sprinkler
- Sprinkler Density Requirement
- Hydraulic Analysis
- Design Density
- Area/Density Curves
- Flow Adjustments
- Riser Detail
- Hazen-Williams Formula for Friction Loss
- Sprinkler System Water Supplies

II. Stand Pipe & Private Hydrant systems

- Introduction
- Description
- Hose Connection
- Hose Valve
- Hose Nozzle
- Hose Storage Devices
- Hose Station

DETAILED COURSE DESCRIPTION (contd)

- Combined Standpipe and Sprinkler System
- Standpipe Classes – Class I, Class II, Class III
- Fire Department Connection
- Standpipe Classification – Automatic, Semi-Automatic, Manual
- Standpipe Types – Dry, Wet
- Requirements
- Pressure Types
- System Zoning
- System Demand
- System Design – Location, Number, Interconnection, Minimum Size
- Pressure Limitation, Supply and Flow Rates
- Fire Tank Sizing
- Hydraulic Calculation Procedure
- Drains and Test Riser
- Introduction to Private Hydrant Systems
- Fire Hydrant
- Wall Hydrant
- Wet Barrel Hydrant
- Frost-proof Hydrant
- Monitor Nozzle Hydrant
- Hose House
- System Design - Hydrant Number, Size, Arrangement, Location, Flow Indicators, Body Color.

Module - 4) Passive Fire Protection

- Types of Construction
- Separation between Buildings
- Building Height Limitations
- Compartmentalization
- Endothermic
- Intumescent
- Fire-Proofing
- Fire-Stop
- Fire Door
- Fire-Stop Pillow
- Fire-Resistance Rating
- Flame Spread Rating
- Smoke-Developed Rating
- Interior Finish
- Combustible/Non-Combustible Materials
- Emergency Action Plan
- Egress and Safety to Life

SELECTED CLIENTS



GENERAL INFORMATION:

- Participants are expected to be present each day and during all training periods. Participants who do not fulfill the attendance requirement will not be certified. Please remember this when making your travel arrangements.
- Course fee includes Printed Training Materials (Manual, Hand outs etc.), & Participants will be awarded with Diploma / Post Graduate Diploma Certificate (*QMS Accredited to *AIAO – BAR).
- Venue for the Diploma Courses will be IPEBS facility, Hyderabad.
- The course is restricted to registered participants only. Visitors are not permitted.
- Use of mobile phones, Personal Data Assistants (PDA, Blackberry) and pagers is not permitted during training periods. Same applies for use of laptop, tablet, and computer for any purpose (E-mail, games etc.) other than course training.
- Participants are expected to maintain a professional standard of appearance and behavior. Any participant wearing inappropriate attire or behaving in an unprofessional manner will be given a verbal warning. Further incidents may result in the participant being asked to leave the class without refunding their fee.
- Failure to meet or comply with these requirements will result in non-certification.
- Accommodation can be arranged on request for the participants near to the training facility. (Accommodation is not included in the course fee).
- **International participants** registering for the diploma courses, please contact IPEBS by email to info@ipebs.in for further course details & visa assistance.

NOTE: 1) QMS – Quality Management System (ISO 9001 -2008).

2) AIAO – BAR – American International Accreditation Organization, California, USA.

WHY TRAIN WITH IPEBS

IPEBS team develops the training programs based on the practical consulting and site construction expertise that has been built up over the years in various specialist areas.

We set out to teach top-quality engineering skills training courses and we have achieved this—we constantly strive to make them as good as it's possible to – but over the years we have also refined our methods, adding several enhancements to the construction stages of course description, design of the courses and assessment.

We believe that these are important to our training participants; it's easy to see what the courses consist of, what value they will gain from attending them and how they can apply their new knowledge and skills in their workplace in a structured, evidence-rich way.

INSTRUCTOR PROFILE

- ❖ MEP Engineer from USA.
- ❖ Over 16 years of experience in MEP Services including Design, Installation & Maintenance.
- ❖ Plumbing/Fire Protection systems specialist.
- ❖ Handled projects based in USA, Middle East & India.
- ❖ Worked on different projects including Industrial Plants, 5 Star Hotels, Palaces, Shopping Malls, Residential & Commercial Buildings.
- ❖ Expertise includes Plumbing & Fire Fighting Design for Building Services as per IPC, UPC, BS & NFPA Codes and MEP Coordination Services.
- ❖ Practicing MEP Consultant for Gulf & Indian Building Services Projects.
- ❖ Successfully trained more than Five Hundred Mechanical Engineers.
- ❖ Over 4 years of Quality Training Experience in Plumbing & Fire Protection Engineering Courses.
- ❖ International & Corporate Course Speaker.

DIPLOMA COURSE	DURATION	TIMING
Fire Protection Engineering Systems Design per NFPA *For course fee details please contact , E-mail: info@ipebs.in Phone: +91-40-30623249, Mobile: +91-9885946711	30 Days (Inclusive of Public Holidays)	01:00pm to 04:00pm
Can't take 4-6 Weeks for training? Attend the Accelerated Training Workshop - A 5-Day Version of our Highly Acclaimed Diploma Courses. For Further details about Workshops, please visit our website www.ipebs.in		
Interested In Onsite training , For further Information on Onsite Trainings please contact , E-mail: corptrain@ipebs.in Phone: +91-40-30623249, Mobile: +91-9885946711		

Terms & conditions:

CANCELLATIONS: IPEBS does not provide refunds for Cancellations done after registration & fee payment. However, credit maybe granted to a later program. This credit will be available for up to one year from the date of issuance.

COURSE MATERIAL AGREEMENT: It is the intention of IPEBS that the course text and materials supplied to participants at IPEBS courses are prepared and issued for the participants' sole use. Codes and standards constantly change and interpretations are issued by the publishing societies. Information contained in IPEBS course materials is based on the best available data obtained by IPEBS at the time of publication. IPEBS is in no way responsible for subsequent use regardless of intention.

PROGRAM CHANGE POLICY: Please note that instructors and topics were confirmed at the time of publishing this document; however, circumstances beyond the control of the training organizers may necessitate substitutions, alterations or cancellations of the instructors and/or topics. As such, IPEBS reserves the right to alter or modify the instructors and/or topics if necessary. Any substitutions or alterations will be updated on our web site.

COURSE CANCELLATION BY IPEBS: IPEBS reserves the right to cancel any course due to circumstances beyond our control. All tuition fees will be refunded in the event of cancellation. IPEBS liability is limited to only those tuition fees paid in advance.

FORCE MAJEURE: Except for the obligations to make money payments as outlined hereunder, neither party shall be responsible to the other for delay or failure to perform any of the terms and conditions, or other activities, of this agreement if such delay or failure is caused by strike, war, act of God, or force majeure.

REGISTRATION FORM

Please visit www.ipebs.in for details on courses we offer and more updated information.

You can register online.

Or

For applications by E-mail, please fill the form below and send to info@ipebs.in

COURSE TITLE: Fire Protection Engineering Systems Design per NFPA

COURSE DATE: _____ COURSE LOCATION: _____

NAME: _____ NATIONALITY: _____

QUALIFICATION: _____ WORK EXPERIENCE (if any): _____

JOB TITLE: _____ COMPANY: _____

ADDRESS: _____

CITY: _____ STATE: _____ POSTAL CODE: _____ COUNTRY: _____

PHONE: _____ FAX: _____ EMAIL: _____

In case of Emergency, contact

NAME: _____ PHONE: _____

ADDRESS: _____

EMAIL: _____

NOTE: Training Fee can be paid at the time of Joining the Course.

I, acknowledge to the terms & conditions of the organizer.

Date: _____

Signature: _____

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