



IFS ACADEMY

Training For The Future!!



Building Energy Performance Analysis using IES<VE>

Advance Course

Course Curriculum (Duration: 50 Hrs.)

Chapter 1: HVAC Modeling and simulation

- Interface of HVAC Module
- HVAC (Airside/Waterside) Components & Controllers Overview
- Distribution Fans
- Network Drawing Tools
- Controllers
- Generic Heating/Cooling
- Hot/Chilled Water Loop
- DX Cooling
- Heat Pumps
- Dampers
- Heat Recovery
- Humidifiers
- Radiators
- Chilled Ceilings
- Direct Acting Heaters/Coolers
- Simplified System Modeling With Result Analysis
- Mechanical Ventilation, CAV, VAV, Mixed Mode Ventilation, FCUs
- Energy Recovery
- Demand Control Ventilation
- System Node/Component Result Analysis
- Energy, Comfort, System Performance Comparisons
- Multiplexing Air Side Networks
- Introduction to Advanced HVAC Systems
- ASHRAE Room Load Calculations
- Loads Data Spreadsheet Walkthrough
- Auto-Sizing of Network Airflows And Components
- Dynamic Thermal Simulations Using Networks
- Result Analysis For Energy, Comfort, Carbon, System
- Prototype Systems In Detail With Performance Comparison
- Packaged Terminal Units

- Packaged Single Zone Air Conditioning Systems
- AHU Based Packaged VAV Systems
- Under Floor Air Distribution Systems
- Multiple AHUs Coupled to a Common DOAS (Dedicated Outdoor Air Supply)
- DOAS With FCUs (Fan Coil Units)
- Radiant Heating/Cooling
- Variable Refrigerant Flow System Modelling

Chapter 2: MicroFlo (CFD Internal/External Analysis using IESVE)

- Export MicroFlo boundary conditions from apache dynamic simulation
- Preparation and introduction to MicroFlo module
- Defining the domain extents for internal CFD simulation
- Importing the boundary conditions
- Loads and system setup
- CFD settings
- Running the simulation (internal CFD simulation)
- Post processing of results
- Preparation of model for CFD external simulation
- CFD settings
- Running the simulation (external CFD simulation)
- Post processing of results

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