REINVENT DESIGN TECHNOLOGIES

Course code: RDT-A006

IES VE 2 days training for Engineers

(Duration: 2 Days 9am to 5pm)

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This is a 2 days special training course in IES VE software designed for Engineers. We will teach you simulation techniques and methods to enable more sustainable design practices using the enhanced features of VE software. Attendees of the course will receive 60 days trial IES license to practice & get hands on experience. This is the certificate course, after successfully completing the course attendee will get the certificate from IES

Day 1

Part 1: Basic introduction to building energy modeling and simulation. VE software Interface and introduction to different modules in software

- Participants will get clear idea about what is building energy modeling and its purpose in our industry?
- Explanation on simulation and tools used for the same
- Brief introduction to software interface, tools for creating, editing geometry with some important shortcuts for fast modeling.

- Quick introduction to all the different types of modules available within software for different types of analysis.

Part 2: ModelIT, SunCast, Solar exposure & FlucsDL

- ModelIT tool, in this module we can see different techniques used to model 3D thermal geometry of the building
- SunCast, in this module we can calculate the position of the sun in the sky, track solar penetration throughout the building interior and calculate shadows of different design elements such as vertical & horizontal fins, pergolas, adjacent buildings etc.
- Solar exposure study for our building geometry can be analyzed for any specific time throughout the year
- FlucsDL, in order to determine daylight levels in any specific room or group of rooms we can use this systematic point-by-point daylight analysis tool.

Part 3: LightPro, FlucsPro, RadianceIES

- LightPro, in this module we will see how to select luminaires from software existing database and place that in any selected room in our 3D building geometry
- FlucsPro, using this module we can estimate number of luminaires required in a particular room by performing lighting design calculation
- RadianceIES, this is detailed 3D simulation tool designed to predict daylight and the appearance of internal spaces prior to construction

Day 2

Part 4: MacroFlo for natural ventilation analysis

- In this module, we will create detail natural ventilation analysis for a building with specific weather file
- We will create all the different types of openings for our model and assign all the detailed properties for each window based on its opening type, % opening, exposure to wind etc.
- We can see inflow and outflow % of wind after running simulation and based on that we can make changes in design, opening size as required for efficient natural ventilation.

Part 5: Running dynamic thermal simulation using ApacheSim

- Introduction to detailed ApacheSim, tabular building template manager & setting up weekly and annual profiles using APpro
- Setting up apache systems using the apache systems dialogue
- Creating thermal templates, Setting up constructions using APcdb

- Apply thermal template to selected rooms, modifying thermal data for single room, modifying constructions for single room and individual elements, input data visualize viewer
- Editing multiple adjacencies, setting fuel carbon emission data, defining renewable, setting location and weather data, setting simulation options & running the dynamic simulation

Part 6: VistaPro for result analysis from dynamic simulation

- Introduction to VistaPro, Selecting the result file and required category
- Viewing graph of room conditions, synopsis of room condition, performing range test
- Viewing the energy consumption, CO_2 emission of whole building, generating the summary report
- Comparing results from different simulations

Part 7: ApacheHVAC

- Introduction to ApacheHVAC module and user interface
- ApacheHVAC Tools, introduction to creating heating and cooling sources
- Introduction to controls