

## **Training Expectations :**

- What Is Hvac, Main Components & What They Do.
- Hvac Electrical Parts
- Refrigeration Cycle
- Tools Needed To Get Started
- Top Hvac Problems
- Understanding How To Install Hvac Split System
- Check Refrigerant Charge
- Subcooling and Superheat
- Diagnosing A Unit

## **Module 1: Introduction to HVAC**

- Principles of thermodynamics
- Pressure and temperature relationship
- Fundamentals of heat transfer
- Fundamentals of fluid flow

## **Module 2: Psychrometry**

- Introduction to psychrometry
- The properties of air
- Understanding the psychrometric charts

## **Module 3: Requirements of Comfort Air Conditioning**

- Air purification methods
- Thermodynamics of the human body
- Role of clothing
- Comfort and comfort chart
- Design considerations
- Requirements of temperature and humidity-high heat load industries
- Recommended inside design conditions
- Outside summer design conditions for some foreign cities
- Indoor Air Quality
- Design of ventilation systems

## **Module 4: Heating and Cooling Load Calculation Procedure**

- Design considerations
- Internal Sensible and Latent Heat Load components
- Design condition – indoor & outdoor conditions
- External Load components
- Miscellaneous heat sources

- Fresh air load

### **Module 5: HVAC Systems**

- Heating systems
- Hot water heating system
- Steam heating systems
- Electric heating systems
- Air-conditioning systems: General
- Air handling units
- Functional variations in the design
- Capacity calculation of an air handling unit

### **Module 6 – Duct Design, Air Flow and Its Distribution**

- Airflow and pressure losses
- Duct design
- Air distribution system inside space
- Ventilation systems

### **Module 7 – Fault Finding and Troubleshooting and Greenhouse Effect and Future Refrigerants**

- Troubleshooting
- The greenhouse effect
- History of CFCs
- Ozone depletion by CFCs and the greenhouse effect
- Future refrigerants to replace CFCs

### **Module 8 – Controls and Instrumentation**

- Elements of control
- Types of control system
- Typical control systems