

# Heating Ventilation & Air Conditioning Designing & Drafting



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# MEP

HVAC  
ELECTRICAL  
PLUMBING

## MEP

### MECHANICAL

#### HVAC

- HEATING
- AIR CONDITIONING
- VENTILATION

#### FIRE FIGHTING

- WET RISER
- DRY RISER
- CLEAN AGENT
- SMOKE MANAGEMENT
- EXTINGUISHERS

#### PLUMBING

- WATER SUPPLY

#### LPG

- DRAINAGE
- STORM WATER
- RAIN WATER
- CENTRAL LPG

### ELECTRICAL

- LIGHTING SYSTEMS
- POWER SYSTEMS
- FIRE ALARM SYSTEMS
- EMERGENCY LIGHTING
- TELEPHONE SYSTEMS
- ELV SYSTEMS
- LIGHTNING PROTECTION

### EARTHING SYSTEMS

INDIA'S 1<sup>ST</sup> FULLY GULF PROJECT ORIENTED TRAINING COMPUS

## CERTIFICATE COURSE IN HVAC DESIGNING AND DRAFTING

Course Name: <b>Diploma in HVAC DESIGNING &amp; DRAFTING</b>	Course Code: SCE/HVAC/101
	<b>Eligibility:</b> Diploma/B-Tech Selection: Based interview
<b>Duration :</b> As per Class Schedules	Course Fee:
Certification: CTDS, <b>Department of labour ,NCT, Govt of INDIA, New Delhi</b>	

### ABOUT THE TRAINER



Organization : **SHAD** Creative Education L.L.P  
Started in : 2011  
Years of Experience : 20+ Years in Consulting & 9 Years in training  
Major Certifications : ISO 9001:2015, ISHARE, DAC, Autodesk, CTDS..Etc.  
Head Office : **SHAD Design** Bahrain



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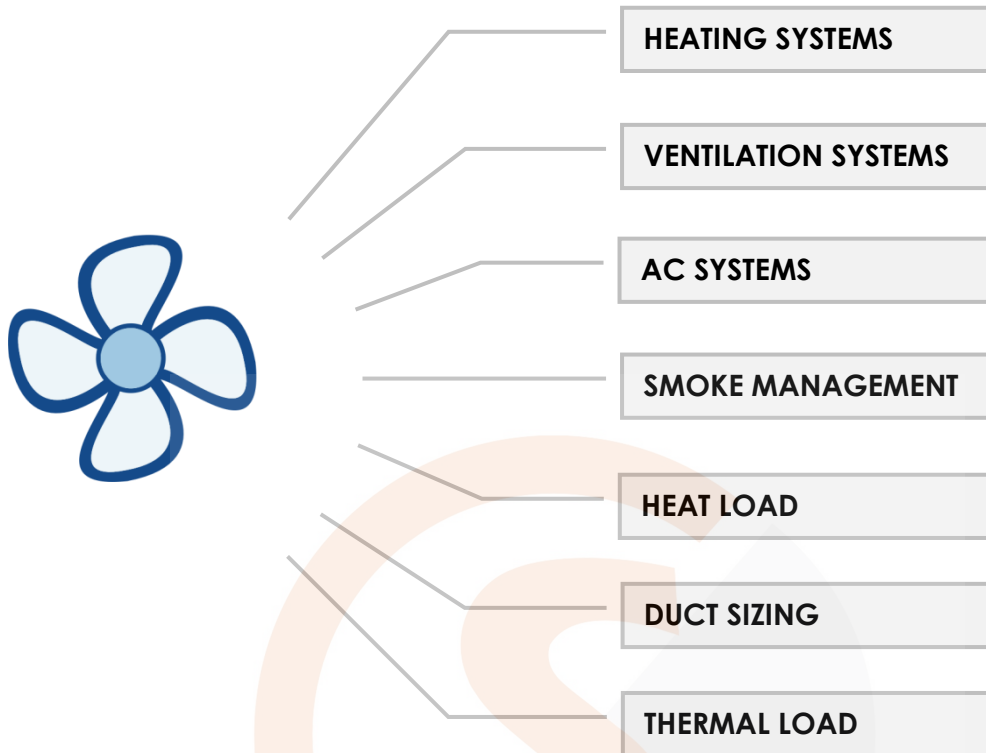
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## ABOUT THE TRAINING

This Diploma Certificate Training Program Covers the Full Design and Analysis of HVAC Designing in Building Service from The Fundamentals To the final designs.



## PROJECTS FOR TRAINING

The following are the selection of projects; we have more than 30 Indian and GCC standard live projects for training and workouts: (Students can select the projects)

### **G+1 VILLA PROJECT** at DUBAI-U.A.E.

HVAC Designing & Drafting

### **G+4 APARTMENTS** at DUBAI-U.A.E.

HVAC Designing & Drafting

### **HOTEL & RESIDENTIAL TOWER** (4B+GF+46 Floor and roof) at Dubai -U.A.E

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### **G+ 2 HOSPITAL** at Thrissure-Kerala

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### **G+ 4 RESIDENTIAL PROJECT** at Thrissure-Kerala

HVAC Designing & Drafting.

### **G+ 2 RESIDENTIAL PROJECT** at Thrissure-Kerala

HVAC Designing & Drafting.

## COURSE CONTENT

### FUNDAMENTALS:

- Introduction to HVAC.
- Scope of designing.
- Basics and importance of HVAC.
- Future advancements in HVAC.
- Standards and codes used in HVAC.
- Modes of heat transfer in a building.
- Basic components of air conditioning.
- Types of refrigeration cycles.
- Vapor absorption refrigeration system.
- Vapor compression refrigeration system.
- Study on psychometric charts (manual and software).
- Properties of Air (DBT, %RH, WB, DPT, enthalpy).
- Study on refrigerants.
- Types of refrigerants.
- Evaporating & condensing properties of refrigerants.
- Types of air conditioning systems.
- Window Air Conditioning Systems.
- Split Air Conditioning Systems.
- Central Air Conditioning Systems.
- Package Air Conditioning Systems.
- Categories of air conditioning.
- Air cooled system of air conditioning.
- Chilled water system of air conditioning.
- Air water system of air conditioning.
- Direct refrigerant system of air conditioning.
- Design of Ventilation system.
- Introduction to Ventilation system.
- Components of Ventilation system.
- Energy conservation measures.
- District cooling, energy recovery wheel.
- Heat Pumps





## HVAC DESIGNING & CALCULATIONS:

- Load calculation using E 20 manual calculation.
- Ventilation, Infiltration load calculations.
- Restaurant and residence kitchen ventilation system design.
- Parking area ventilation and designing.
- Toilet ventilation (Industrial and residential).
- External static pressure (E.S.P) calculation for selection of motor and fan.
- Pump size and hydraulic head calculation for chilled water in pipe sizing.
- Evaporative Losses calculation in cooling towers.
- Stairwell pressurization system designing.
- Scope of HVAC professional in industrial air conditioning(Cold store and product display cabinets airconditioning)
- Study on ducts and its types.
- Study on air distribution systems.
- Types of ducts, Duct fittings, Dampers, Types of diffusers, Flexible ducts etc.
- Duct elbows selections
- Vanes location & number of vanes required
- Duct material calculation
- Duct designing methods (manual calculations) using.
- Equal friction method.
- Velocity reduction method.
- Static regain method.
- Refrigerant Pipe sizing.
- Chilled water pipe sizing.



## EQUIPMENT SELECTION:

- Air terminal selection.
  - Cold storage selection.
  - Selection of Materials of Ducts.
  - Primary and secondary pump selections.
  - Duct material selection.
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- Selection of cooling tower.
  - Selection of Chillers.
  - AHU and FCU classification and selection.
  - Package unit selection DX unit selection.
  - Selection of Condensers (Air cooled, Water cooled, Evaporative).
  - Selection of De-humidifier.
  - Selection of Expansion tank.
  - Rules & regulations.

#### **ESTIMATION OF PROJECTS:**

- Understanding the tendering requirements.
- BOQ (Bill of quantities).
- Preparing inquiry for suppliers and finalizing the suppliers.
- Final billing and quotation finalization.

#### **HVAC SOFTWARES:**

- Cooling and heating load calculation using Hourly Analysis Programme (HAP).
- Calculation of duct Mc Quay Duct sizer and Duct Checker.
- Calculation of pipes Mc Quay pipe sizer.
- Air terminal selection by using BETA Programme
- AutoCAD.
- Revit MEP (Additional if need)

#### **HVAC DOCUMENTATION:**

- Project Planning and Estimation.
- Preparation of BOQ.
- Tendering.

## CLASS TIMING

- **Class Time** : 04 Hrs. Daily (As per Schedules)
- **Per Week** : 24 Hrs. (As per Schedules)
- **Monthly Nearly** : 96 Hrs. (As per Schedules)
- **For 4 Months** : 384 Hrs. 4 Months (200 Hrs. Theory+184 Hrs. Practical)

## CERTIFICATION & APPROVALS



## WHY SHAD

- **9+ years** of experience in training.
- GCC project oriented training.
- Placement assistance available in India and GCC countries.
- Embassy attestable certificate.
- CV preparation and life time free updation.
- More than **20 Years** of experience in Consulting and Building service.



**SHAD CREATIVE EDUCATION L.L.P**

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FOUNDATION  
FOR YOUR CAREER**



**CREATIVE EDUCATION LLP**

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