

FINISHING SCHOOL

FOR MECHANICAL ENGINEERS



CORPORATE SUPPORT



Mastro Lee
Engineering & Management Consultants

Why HVAC @ Mastro Lee...

- ✓ Only Training Centre in South India having its own Project Division
- ✓ Tie up with multinational Companies for internship
- ✓ Chance to work in our GCC projects
- ✓ Live field Training for all
- ✓ Continuously Updated Syllabus
- ✓ Best Study materials and case studies
- ✓ Small Batches for Individual Attention
- ✓ Individual project for Students ensuring one on one attention
- ✓ Industry recognized certificates
- ✓ Placement drive with multiple companies every month
- ✓ Sessions from Companies Registered under Govt's Make in India Initiative
- ✓ Factory Training to comply with the Manufacturing procedure
- ✓ Sessions with Leading Consultants, Architects and Project Managers
- ✓ Batch Toppers will be appointed directly in our company to work in our Middle east projects

COURSE CONTENT

- ▶ Introduction to Hvac
- ▶ Scope of Designing
- ▶ Basics & importance of HVAC
- ▶ Future advancements in HVAC
- ▶ Standards & codes used in HVAC
- ▶ Modes of heat transfer in building
- ▶ Basic components of air conditioning
- ▶ Types of refrigeration cycles
- ▶ Vapor absorption refrigeration system
- ▶ Vapor compression refrigeration system
- ▶ Study on psychometric charts (manual & software)
- ▶ Study on refrigerants
- ▶ Type of refrigerants
- ▶ Evaporating & condensing properties of refrigerants
- ▶ Types of air conditioning systems
- ▶ Window air conditioning systems
- ▶ Split air conditioning systems
- ▶ Ductable Split AC
- ▶ Package Air Conditioning systems
- ▶ Categories 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
- ▶ Energy conservation measures
- ▶ District cooling, geothermal, under floor cooling
- ▶ Energy Recovery wheel
- ▶ Variable refrigerant Volume

HVAC DESIGN COLCULATION

- ▶ Load calculation using E 20 manual calculation
- ▶ Ventilation, infiltration load calculations
- ▶ Restaurent & residence kitchen ventilation system design
- ▶ Parking area ventilation & designing
- ▶ Toilet ventilation (Public & residential)
- ▶ External static pressure (ESP) calculation for selection of motor & fan
- ▶ Pump size & hydraulic head calculation for chilled water in pipe sizing
- ▶ Evaporative Losses calculation in cooling towers
- ▶ Stairwell pressurization system designing
- ▶ Cold storage designing
- ▶ Study on ducts & its types
- ▶ Study on air distribution systems
- ▶ Types of ducts, Duct fittings, Dampers
- ▶ Types of diffusers, Flexible ducts etc.
- ▶ Ducts reducer selection
- ▶ Duct gauge selection & number of sheet calculation
- ▶ Duct designing methods (manual calculations) using
- ▶ Equal friction method
- ▶ Velocity reduction method
- ▶ Static regain method
- ▶ Pipe sizing methods & Refrigerant pipe sizing
- ▶ Chilled water pipe sizing

HVAC DESIGN COLCULATION

- ▶ Air terminal selection
- ▶ Cold storage Load Sheduling
- ▶ Primary & Secondary pump selection
- ▶ Selection of cooling tower
- ▶ Selection of chillers
- ▶ AHU & FCU classification & selection

- ▶ Package unit selection DX Unit selection
- ▶ Selection of De-humiditifer
- ▶ Selection of Expansion tank

ESTIMATION OF PROJECT

- ▶ Understanding the tendering the requirements
- ▶ BOQ (Bill of Quantities)

SOFTWARE DESIGNING


- ▶ Cooling & heating load calculation using
- ▶ Hourly Analysis Program (HAP)
- ▶ Calculation of duct size using
- ▶ Mc Quay Duct sizer
- ▶ Calculation of pipe diameter using
- ▶ Mc quay pipe sizer
- ▶ Air terminational selection by using BETA program

DRAFTING:


- ▶ Introduction to drafting using auto CAD
- ▶ Fundamentals and basic of HVAC
- ▶ Symbols and codes used in HVAC designing
- ▶ Types of drawing used in the industry
- ▶ Study and Preparation of floor drawings
- ▶ Selection drawings of projects




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