



Refrigeration Fundamentals

(2009 Session-2: February 10-13, 2009, Rochester, NY)

1. Basic Refrigeration <10-12 hours>

- A. Basic Components
- B. P-H Diagram (Pressure vs Enthalpy)
- C. P-V Diagram (Pressure vs Volume)
- D. Effect Of SST & SCT On Capacity
- E. Effect Of Subcooling & Superheat On Capacity
- F. Effect Of Pressure Drops
- G. Capacity Control Methods

Purpose: To understand what the basic components & control schemes of a mechanical refrigeration system are and how they work together.

2. Refrigerant Piping <8-10 hours>

- A. Primary Considerations
- B. Procedure
- C. Tables for Suction, Discharge & Liquid Line Selections
- D. Example Problem For Typical Suction Line
- E. Double Riser Application

Purpose: This a very practical, step-by-step procedure that prepares the student to design future refrigerant piping systems as well as trouble-shoot existing systems for problems that cause ineffective operation or even premature failure of the compressor.

3. Refrigerants & Our Environment <3-5 hours>

- A. History of CFCs
- B. Montreal Protocol
- C. Current Legislation
- D. The Future Of Mechanical Refrigeration

Purpose: The 1987 Montreal Protocol changed our industry in a most significant way. This talk helps you to fully understand where we have come and where we are heading in regards to the transition from CFCs.