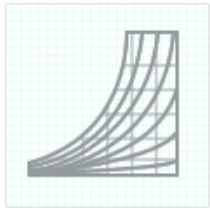


HVAC Basics: Introduction to Psychrometrics



Welcome to our introductory course on Psychrometrics!

Lesson 1.1-1.3 provides a quick review on the fundamental properties necessary to understand the principles of psychrometrics. These properties include mass, force, weight, density, specific volume, pressure, enthalpy, sensible and latent heat, and the basic properties of moist air. Lesson 1 concludes with an introduction to the Psychrometric Chart and its lines of constant properties.

Lesson 2.1-2.3 covers air conditioning processes on a psychrometric chart, the air mixing process, and concludes with a number of sample problems using the psychrometric chart .

Lesson 1.1– Review of Fundamental Properties

This video reviews mass, force, weight, density, specific volume, pressure and enthalpy. The lesson concludes with a review of sensible and latent heat.

- Mass, Force, Weight, Density and Specific Volume
- Pressure
- Enthalpy
- Sensible Heat and the Sensible Heat Equation
- Latent Heat and the Enthalpy Equation

Details



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Lesson 1.2 – Properties of Moist Air

This video covers the basic properties of moist air that are shown on the Psychrometric Chart.

- Dry Bulb and Wet Bulb Temperatures
- Dewpoint
- Humidity Ratio and Relative Humidity
- Specific Volume and Density
- Specific Enthalpy

1.3 – The Psychrometric Chart

The video lesson introduces the Psychrometric Chart and the lines of constant properties that are shown on the Chart.

- Lines of Constant Properties
- How to “Read” a Psychrometric Chart
- Standard Air
- Charts for Different Altitudes

Lesson 2.1 – Air Conditioning Processes on a Psychrometric Chart

This video shows how common air conditioning processes are illustrated on the Psychrometric Chart and how the Chart can be used for determining changes in air properties.

- Definition of “Process”
- Process #1: Sensible Heat Change
- Process #2: Latent Heat Change
- Process #3: Combination Sensible and Latent Heat Change
- Process #4: Evaporative Process

Lesson 2.2 –The Air Mixing Process

In this video, the air mixing process is presented along with how to determine air conditioning properties when two air streams are mixed.

- Mixing of Two Air Streams
- Calculating Mixed Air Properties
- Calculating the % of Outside Air in an Air Handling Unit

Lesson 2.3 – Sample Problems Using the Psychrometric Chart

- Example #1: Sensible Heat Change
- Example #2: Latent Heat Change
- Example #3: Combined Sensible and Latent Heat Change
- Example #4: Evaporative Cooling
- Example #5: Mixed Air Problem
- Example #6: OSA Calculation
- Example #7: Derive the Conditions for “Standard Air”