ME 200: Thermodynamics I

Lecture 13: Ideal Gas Properties and Polytropic Processes

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In this Lecture …

- **We will study:**
  - **Ideal Gas properties**
  - **Polytropic processes**

Ideal Gas Properties

$$Pv = RT$$

- ***u* and *h* only depend on temperature (for ideal gas).**

$$u = u(T) \qquad h = h(T) = u(T) + RT$$

$$du = c_v(T)dT \qquad dh = c_p(T)dT$$

$$u(T_2) - u(T_1) = \int_{T_1}^{T_2} c_v(T)dT \qquad h(T_2) - h(T_1) = \int_{T_1}^{T_2} c_p(T)dT$$

$\Delta u =$ $\Delta h =$