

Topic

Conservation of Energy

Governing Equations and Assumptions

$$T_1 + \sum U_{1-2 \text{ nonconservative}} + V_1 = T_2 + V_2$$

$$T = \frac{1}{2}mv^2$$

$$V_g = W \Delta y$$

$$V_e = \frac{1}{2}ks^2$$

Kinematics

Equilibrium

Process

- ① Free-Body Diagram if needed
- ② Define the Datum
- ③ Determine Kinetic & Potential energy, and work
- ④ Solve for unknowns
=> Conservation of Energy
=> Kinematics