ME 200 (Thermodynamics I)

Heat Transfer and Work in Reversible Flow Processes

Entropy Equation

$$\frac{dS_{CV}}{dt} = \sum_{in} \dot{m}s - \sum_{out} \dot{m}s + \int_b \frac{\delta \dot{Q}_{in}}{T} + \dot{\sigma}_{CV}$$

1st Law of Thermodynamics

$$\frac{dE_{CV}}{dt} = \sum_{in} \dot{m}\left(h + \frac{1}{2}V^2 + gz\right) - \sum_{out} \dot{m}\left(h + \frac{1}{2}V^2 + gz\right) + \dot{Q}_{in} - \dot{W}_{out}$$