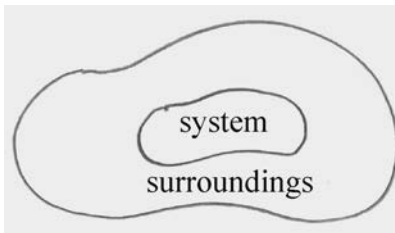


## 14.1 Conservation of Energy

Recall from Chapter 13.1, the principle of conservation of energy. When a system and its surroundings undergo a transition from an initial state to a final state, the change in energy is zero,

$$\Delta E = \Delta E_{\text{system}} + \Delta E_{\text{surroundings}} = 0 . \quad (14.1.1)$$



**Figure 14.1** Diagram of a system and its surroundings

We shall study types of energy transformations due to interactions both inside and across the boundary of a system.

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