

First Law of Thermodynamics

Energy Conservation

The change in internal energy of a system (ΔU) is equal to the heat flow into the system (Q) plus the work done *on* the system (W)

$$\Delta U = Q + W$$

Increase in internal energy of system

Heat flow into system

Work done on system

The diagram shows the equation $\Delta U = Q + W$ centered at the top. Three arrows point from descriptive text below to the variables in the equation: a yellow arrow points from the text 'Increase in internal energy of system' to ΔU ; a green arrow points from the text 'Heat flow into system' to Q ; and a blue arrow points from the text 'Work done on system' to W .