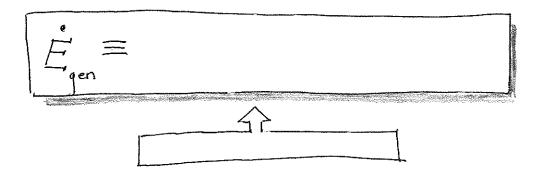


Make it a closed system. Do not ignore forms of energy besides U and do not ignore electrical power. (You can ignore KE & PE and other forms of power, though.)

Seeing as how this course is Heat Transfer, let's lump every thing that is not U together:



Put it all together...