

Direct and Alternating Current

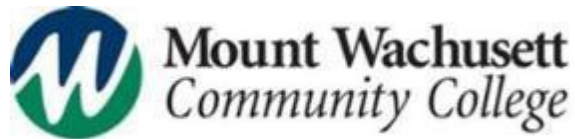
Disclaimer

The AMMQC program is an Equal Opportunity program.
Adaptive equipment is available upon request for individuals with disabilities.

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This project is sponsored by a \$15.9 million grant from the U.S. Department of Labor, Employment and Training Administration.

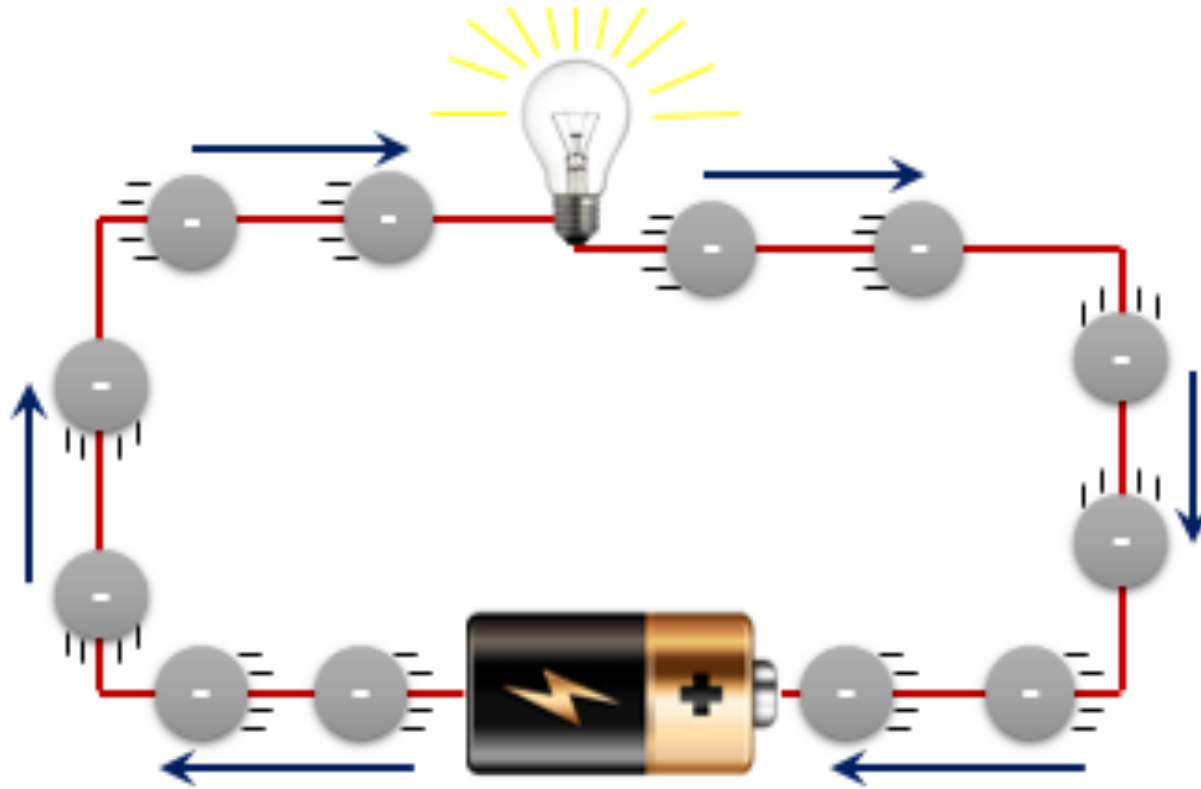
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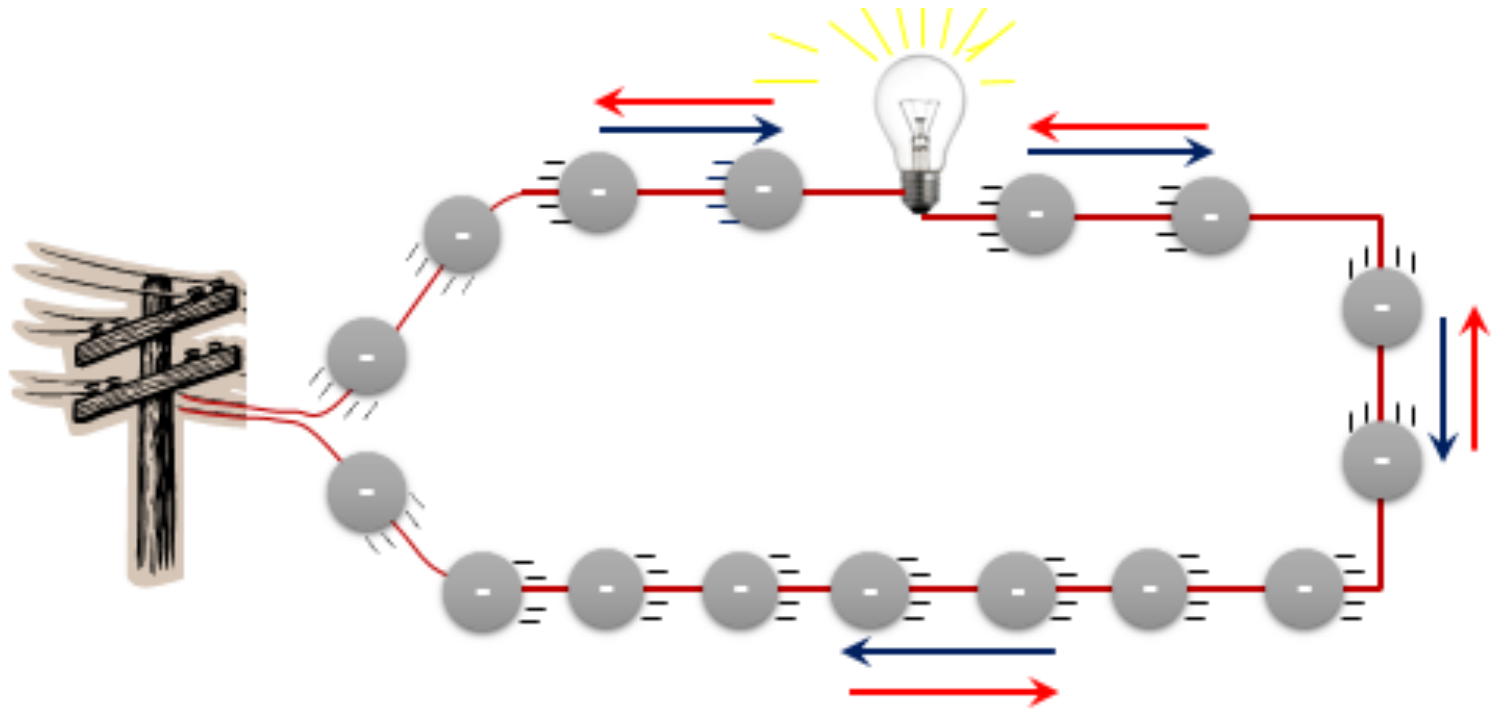
ELECTRICITY

DIRECT CURRENT



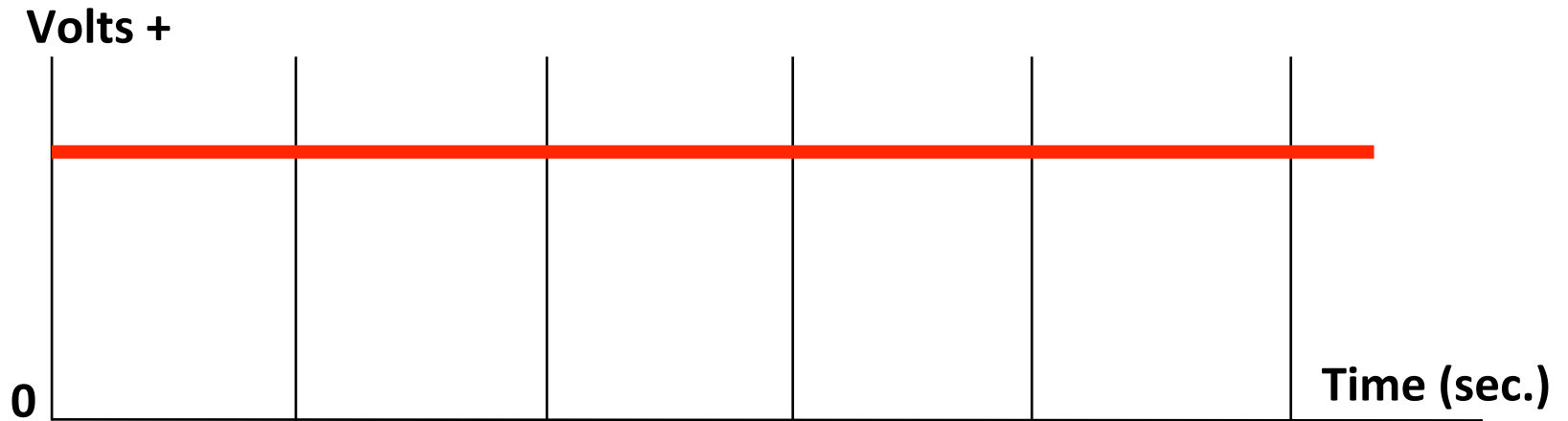
**Direction of Electron Flow
in a Simple Circuit**

ALTERNATING CURRENT



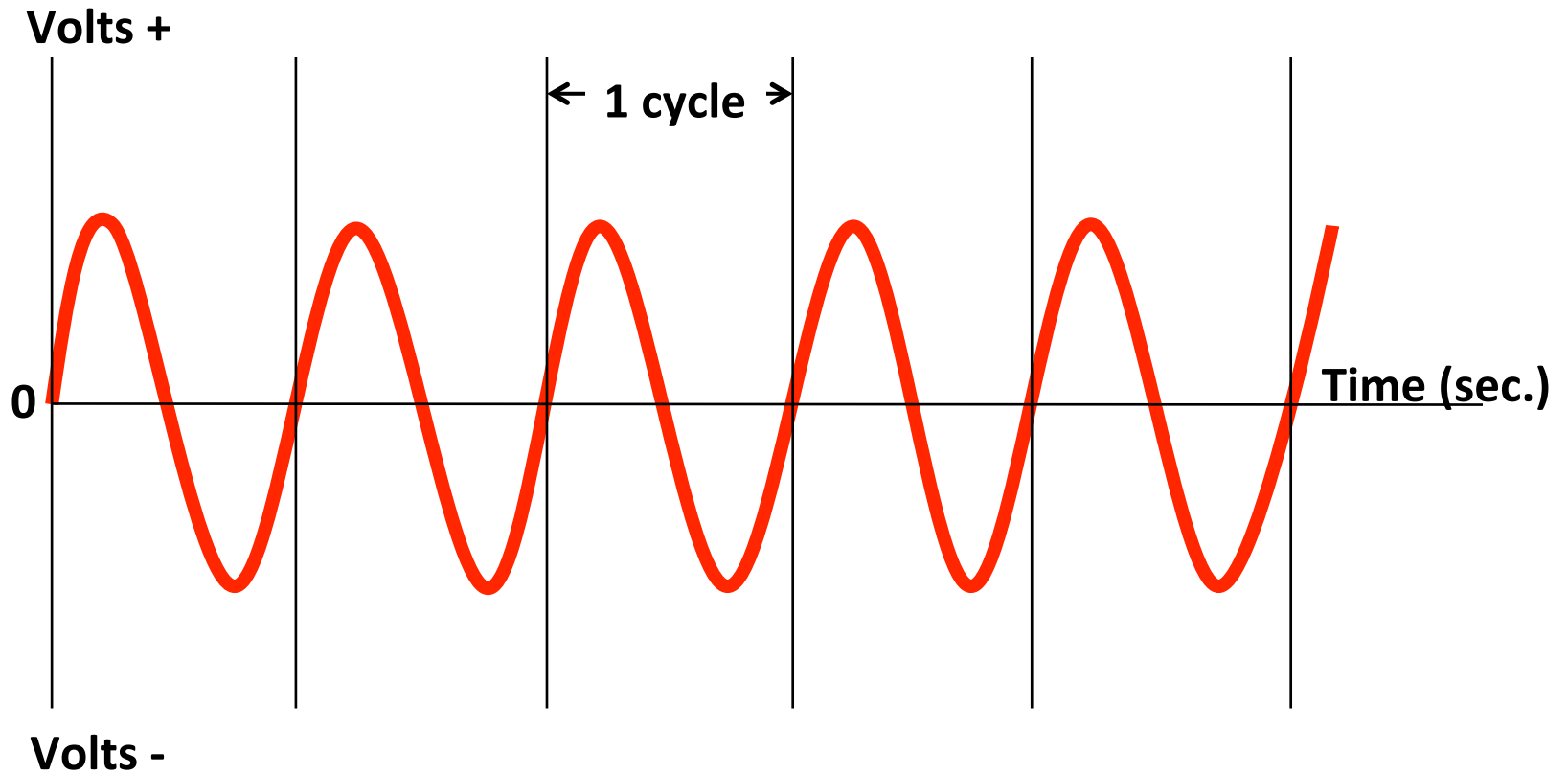
DC - VOLTAGE

Voltage remains constant

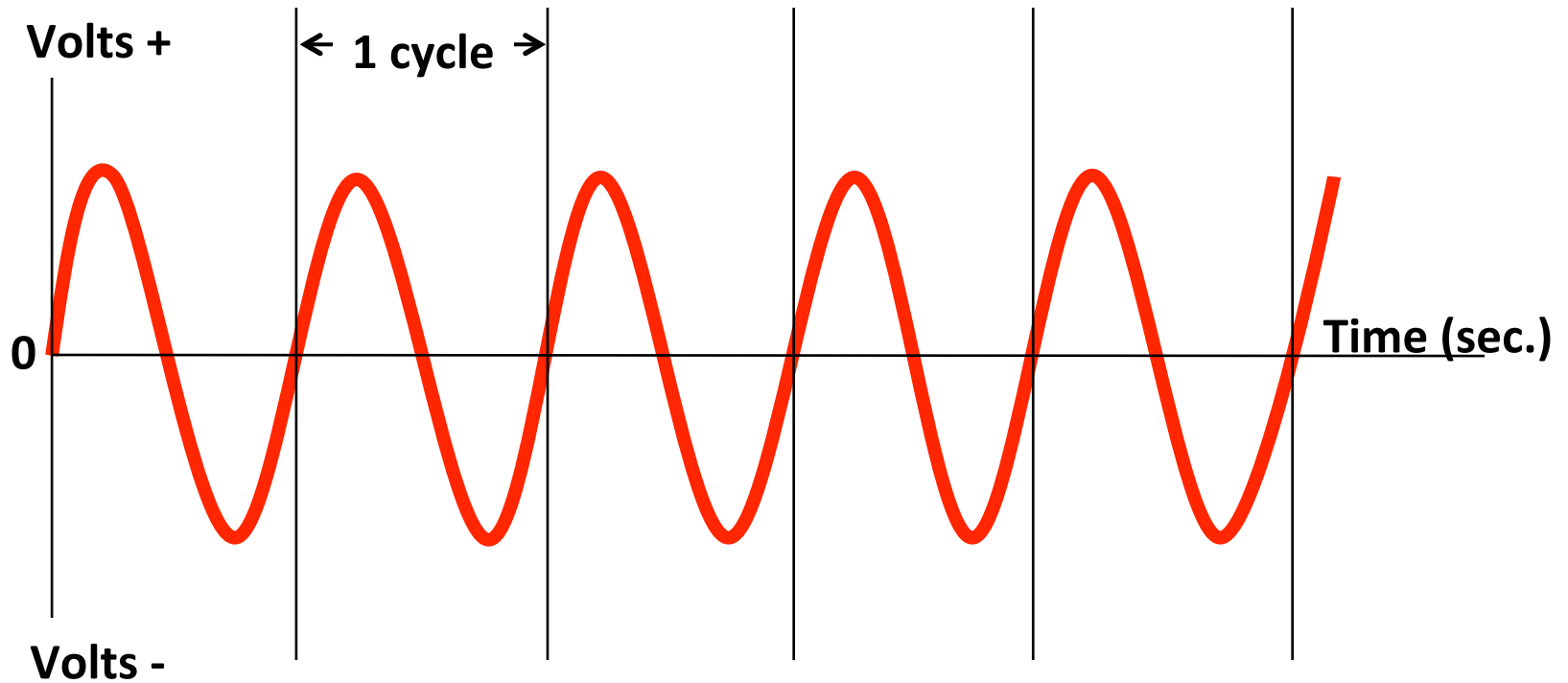


AC - CYCLES

Voltage fluctuates

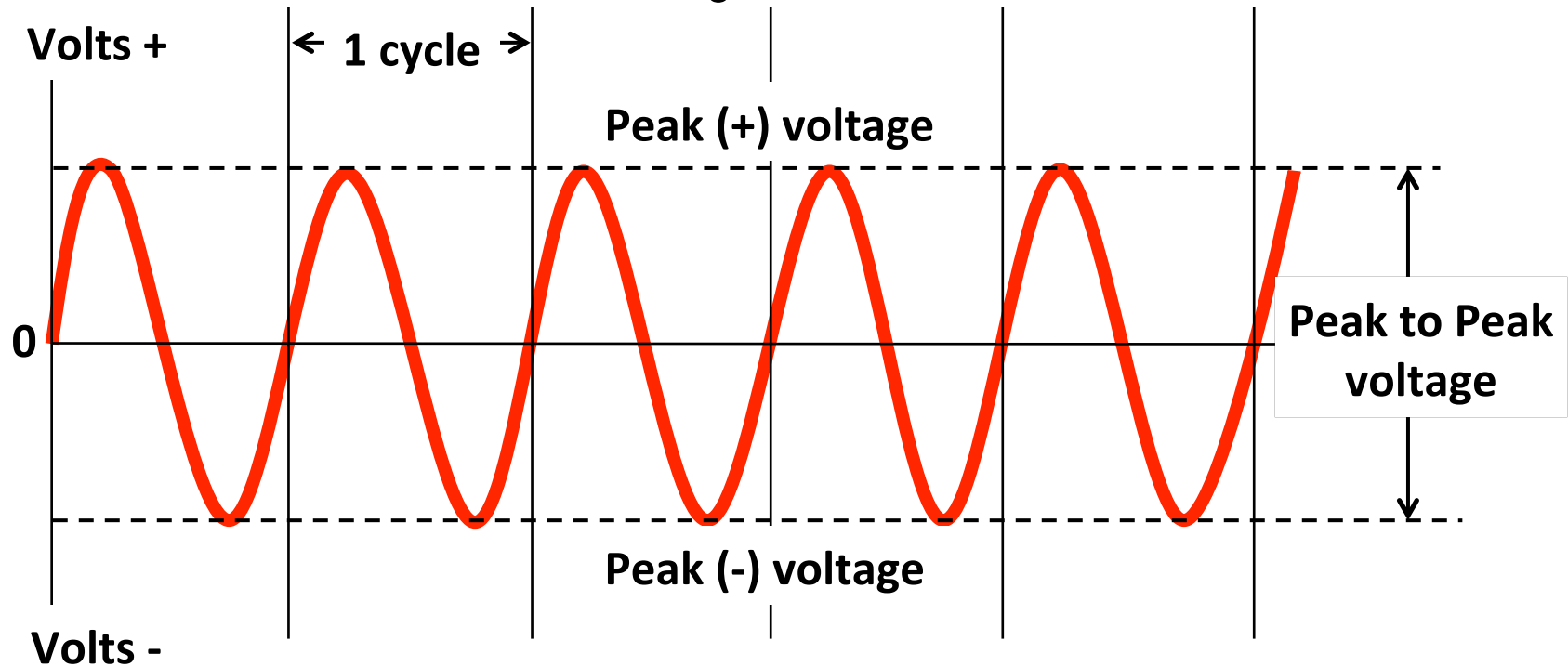


AC - FREQUENCY



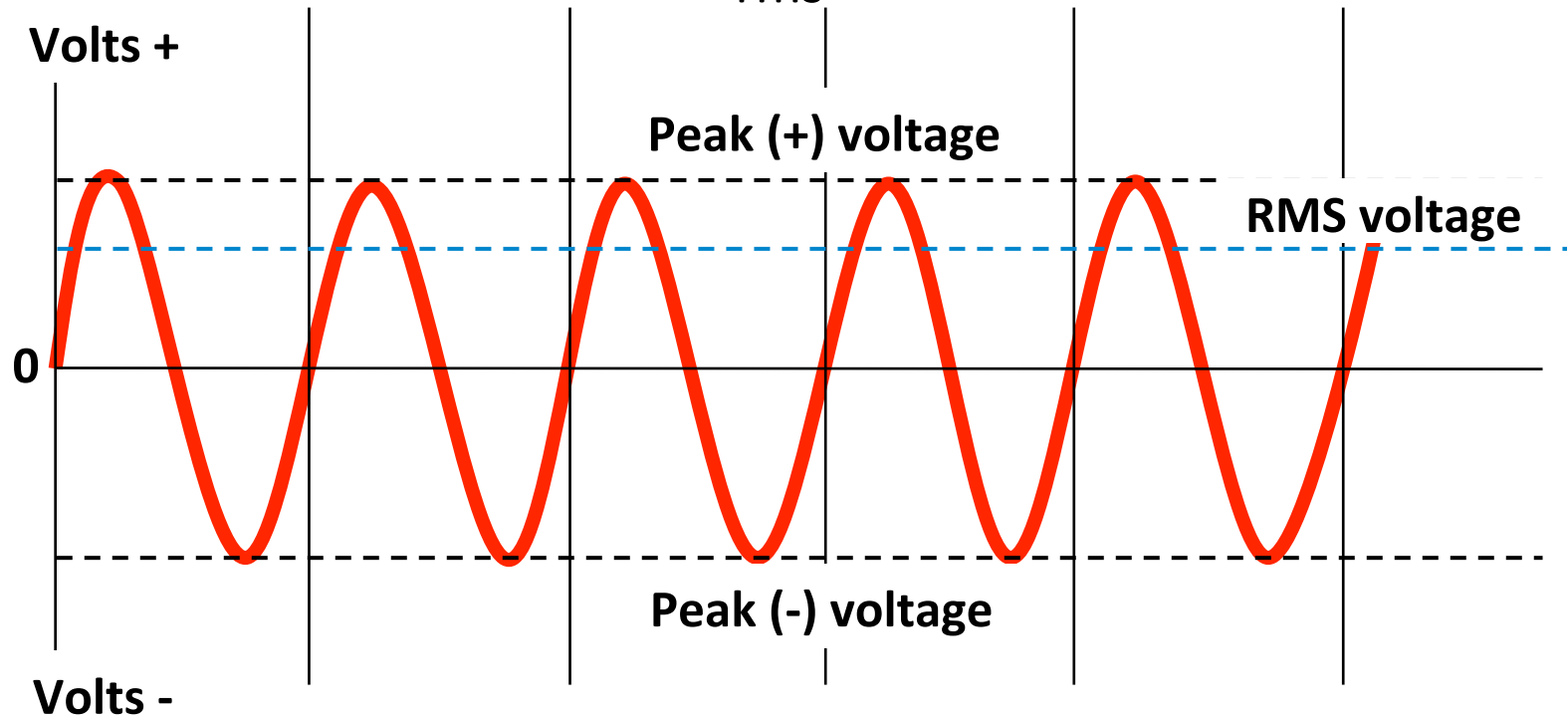
Frequency = number of cycles per second
Measured in Hertz (Hz)
 $1_{\text{Hz}} = 1 \text{ cycle per second}$

AC - PEAK VOLTAGE - V_0



Peak Voltage (V_0) = highest voltage value in either + or - direction

AC - RMS VOLTAGE - V_{rms}



Root Mean Square voltage (V_{rms}) is an average voltage

$$V_{rms} = V_0 / \sqrt{2} = V_0 \times .707$$

FLOW OF CURRENT VS ELECTRONS

Current is considered to flow from + to –

This convention was adopted prior to fully understanding the atom and the flow of electrons

INTRO VIDEO

<https://www.youtube.com/watch?v=EJeAuQ7pkpc>