**EKG Lab Activity:**

**Specific goals for learning outcomes**

Students will be able to explain:

1. An EKG sensor measures and amplifies output signals from the heart in the magnitude of millivolts in the approximate frequency range of 1 Hz to 20 Hz.
2. An EKG sensor functions as a band-pass filter to filter out environmental noise and to attenuate frequencies above and below the range of the human heart.
3. An AC circuit with a function generator, inductor, and capacitor can act as a band-pass filter.
4. In an AC circuit, the inductor functions as a low-pass filter that allows low frequency signals to pass through and attenuates high-frequency signals.
5. The capacitor functions as a high-pass filter that allows high-frequency signals to pass through and attenuates low-frequency signals.
6. In an AC circuit, the equation below can be used to calculate the value of the resonant frequency.

$f=\frac{1}{2π\sqrt{LC}}$