

CHAPTER OVERVIEW

21: Circuits, Bioelectricity, and DC Instruments

This collection of modules takes the topic of electric circuits a step beyond simple circuits. When the circuit is purely resistive, everything in this module applies to both DC and AC. Matters become more complex when capacitance is involved. We do consider what happens when capacitors are connected to DC voltage sources, but the interaction of capacitors and other nonresistive devices with AC is left for a later chapter. Finally, a number of important DC instruments, such as meters that measure voltage and current, are covered in this chapter.

[21.0: Prelude to Circuits and DC Instruments](#)

[21.1: Resistors in Series and Parallel](#)

[21.2: Electromotive Force - Terminal Voltage](#)

[21.3: Kirchhoff's Rules](#)

[21.4: DC Voltmeters and Ammeters](#)

[21.5: Null Measurements](#)

[21.6: DC Circuits Containing Resistors and Capacitors](#)

[21.E: Circuits and DC Instruments \(Exercise\)](#)

Thumbnail: Wheatstone bridge circuit diagram that is used to measure an unknown electrical resistance by balancing two legs of a bridge circuit, one leg of which includes the unknown component. The primary benefit of a wheatstone bridge is its ability to provide extremely accurate measurements. (CC-SA-BY- 3.0; Rhdv);

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