

Advanced Electrical Engineering

Instructor: Andrea Covarrubias
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Objective: *To develop a well-rounded understanding of the nature of electricity, electrical components, circuitry, and schematics.*

Syllabus:

Fall 2024

Week 1 (Aug 26-30) - What is electricity? Demonstration of projects. Safety. Does it conduct?

Week 2 (Sep 2-6) - Metals. Making Electromagnets, Generators, and Batteries. Anode and Cathode.

Week 3 (Sep 9-13) - Multimeters. Components, Symbols, and Schematics. LED Throwie.

Week 4 (Sep 16-20) - Advanced Circuit Journal - Introduction.

Week 5 (Sep 23-27) - Advanced Circuit Journal - Switches.

Week 6 (Sep 30- Oct 4) - Advanced Circuit Journal - Resistance.

Week 7 (Oct 7-11) - Advanced Circuit Journals - Sensors.

Fall Break Oct 14-18

Week 8 (Oct 21-25) - Snap Circuits

Week 9 (Oct 28 - Nov 1) - LED Spider, Snap Circuits

Week 10 (Nov 4-8) - Breadboards - Simple and Parallel Circuits

Week 11 (Nov 11-15) - Breadboards - Series Circuit, Parallel Circuit Challenge

Week 12 (Nov 18-22) - "Thankful for You" Light-Up Greeting Card, Breadboards - Switch Circuits

Thanksgiving Break Nov 25-29

Week 3 (Dec 2-6) - Arduino. Ohm's Law.

Week 14 (Dec 9-11) - Arduino. Programming a Traffic Light.

Week 15 (Dec 16-20) - Arduino. Programming a Crosswalk.