

## EAS 199A: Midterm Topics

Refer to the learning objects for specific expectations.

### Midterm topics and questions

1. Basic electricity
  - Atomic mass
  - Definitions of charge (Coulomb), current, voltage,
2. DC circuits
  - Ohm's law
  - Resistors in series and parallel
  - Voltage divider
  - Power dissipation in resistive elements
  - Kirchhoff's voltage and current law
  - Building circuits on a breadboard
3. Arduino programming
  - Structure: setup() and loop()
  - Variables: int, long, float
  - "if" constructs
  - loops
  - analog input
  - digital output
  - PWM output
4. Implementation: DC circuit + Arduino
  - LED circuits
  - photoresistor circuits
  - potentiometer and voltage divider