Here is a list of topics that may appear on the midterm exam. You should review your lab notes, answers to previous homework sets, schematics, code from previous projects and homework, and review the Recipes we have used from the Arduino Cookbook.

2. Basic electronic components: Power, GND, resistors, capacitors, diodes, LEDs, switches, photocells.
3. Ohms Law and how to use it in practice.
4. Voltage dividers, how they work, how to compute the output value of a voltage divider using the voltage divider formula.
5. Switches with pull-up and pull-down resistors.
6. Transistors, PNP vs. NPN transistors, collector-base-emitter pins, current flow through a transistor, how to use base current to turn on/off a transistor.
7. Transistor circuits as logic gates: NAND, NOR, NOT, etc.
8. Computing gain of a transistor circuit as an amplifier.
10. Digital logic gate symbols.
11. Integrated circuits. Pin numbering, Vdd, Vcc, Vss, GND pins in an IC.
12. CD4000 series ICs. Reading an IC data sheet.
13. Making and drawing compound logic circuits using IC gates NAND, NOR, OR, AND, NOT, etc.
15. Arduino program structure: setup(), loop(), etc. What these methods do for us.
16. Arduino language features: variable declarations, variable assignments, Serial.begin(...), Serial.println(...), if...else controls, for (...) loops.
17. Arduino specific functions/methods: pinMode(...), digitalRead(...), digitalWrite(...), analogRead(...), map(...), constrain(...), servo.write(...).