

# ECE348 Lab Safety Guidelines

Even though the voltages used in the lab equipment are relatively low, lab safety is still important. *Always treat electricity with respect.* Following these safety guidelines will help you build good safety habits so that you will already be doing the right thing if you work with more dangerous circuits in the future.

**Power Up Checklist** (do these things every time you power up a circuit):

- If possible, have someone who did not wire the circuit check that it is correct.
- Always check for shorts between power and ground – do this by measuring the resistance between the power bus and the ground bus.
- Make sure any LEDs have current limiting resistors.
- Verify the orientation of IC's – check the location of Pin 1. Remember whether you're looking at the top or bottom of the chip. Incorrectly wiring an IC can damage the IC or other components on your board.

**Do s** (do these things all the time):

- If you power up a circuit and see sparks or smell something burning, immediately remove power from the circuit by unplugging the power supply. Never attempt to handle the faulty circuit or remove components from the board.
- Always verify for yourself that the power is off before working on a circuit. Don't take someone else's word for it, even if you trust them.

**Don't s** (never do these things):

- Never modify a circuit while is powered up.
- Don't run, throw things, or play practical jokes in the lab.
- Never eat or drink in the lab.

**Other guidelines:**

- Ground yourself (or at least discharge static by touching an unpainted metal surface) before handling/inserting IC's
- Be conscious of where you set your circuit boards. Remember that there are conductive elements on the bottom of most boards, including the project board and stand-alone modules.
- Remember that when using a multimeter to measure current, the meter acts as a *short circuit*. If the current flow through the meter exceeds a certain value, you will blow the fuse or break the multimeter.