COMMON PCB Mistakes and things to check for.

- ☐ Use of connectors (standardized?) - recommend they use the same one used in the assignment...unless they have some other reason.
- ☐ Are all PCBs smaller than 100x100 mm? If not, consider breaking the board into multiple PCBs.
- ☐ Proper labels on components, connectors, parts, orientations, polarities.
- ☐ No unrouted nets, No weird placed Vias.
- ☐ Proper trace widths. Ask how much current will be going through. A good metric is at least 20 mils for power and at least 10mils for signal. If they have some high current paths, they may need to be more, though.
- ☐ Ground and Power plane.
- ☐ How will you program the microcontroller? There needs to be a programming port on the board somewhere or a usb to serial interface. Have you thought about this?
- ☐ First round PCB coming up. Design your circuit to be easy to debug! Space the parts out, add many testing points.
- ☐ Have an external oscillator for the micro if you have timing requirements (either strict timing, or need timing over a long period of time). Also, know exactly what oscillator requirements your microcontroller needs
- ☐ Did you choose any component packages that will be hard to solder? Such as where the pads are all underneath the component (Ball Grid Arrays), or too small? You can extend the pads to make it easier to solder, or choose a different package?
- ☐ Verify that the components you order are the same footprint as what you are putting on your PCB.
- ☐ What microcontroller are you using?
    i. Does it have enough memory to handle everything you want to store on board?
    ii. Have you connected it properly so that it is actually programmable?
- ☐ Make sure all the parts you are putting on your board are in stock.
- ☐ Does the PCB have mounting holes? Where will it be mounted? What enclosure will you use?
- ☐ Are there status LEDs that could be added? Such as power, signal, or error status LEDs.
- ☐ If you are unsure of a part working…you can break out the pins of the part into a row of pin headers and connect to it via jumper wires in order to test.
- ☐ Do you know how to generate gerber files?