

Lab 3 Writing Assignment

Electrical Schematics and Mechanical Drawings

Writing Assignment

In this writing assignment you will learn to make high quality electrical schematics and mechanical drawings. You'll then write text to describe the operation of the electrical system and the key aspects of the mechanical design presented.

Learning Objectives

By the end of this writing assignment you will...

- Create a clear mechanical drawing with relevant details included
- Draw a neat and complete electrical schematic

Required Resources

- ☐ Reference schematic from the lab notebook of the op amp circuit used in lab.

Specifications

Electrical Schematics

- ☐ Standard electrical schematic symbols are used whenever possible (i.e., don't make up new symbols for resistors, amplifiers, etc.)
- ☐ All lines connecting elements are straight lines wherever possible (i.e., no curved lines)
- ☐ All junctions indicated with a solid circle at the intersection point
- ☐ No 4-way wire junctions
- ☐ Use heavy line weights and large fonts
- ☐ Reference designators and the values for parts are placed nearby the parts.

- ☐ Draw pins according to function (i.e., not just according to the physical layout of the pins on the chip.)
- ☐ All pins labeled with number
- ☐ All pins labeled with name/description of function
- ☐ Decoupling capacitors are placed nearby the part that they accompany.
- ☐ If needed, notes are legible and well-placed

Mechanical Drawings

- ☐ Clear depiction of components and how they fit into assembly
- ☐ Drawings only include enough detail to make your point (i.e., you need only show the relevant dimensions in the drawing)
- ☐ Follow mechanical schematic drawing conventions, such as the layout, flow and symbols
- ☐ Use heavy line weights and large fonts
- ☐ Part geometry is clear and well illustrated
- ☐ Drawing is clear and fully labeled
- ☐ If needed, notes are legible and well-placed
- ☐ Clearly makes the point that is suggested in the text

Results

- ☐ States the main conclusion of the experiment
- ☐ States any shortcomings or outlier data for future exploration along with suggested mechanisms.

Equations

- ☐ Each equation is labeled
- ☐ Each equation is referenced in the text
- ☐ Variables of the equations are described in the text

Supporting Text

- ☐ Refers to each schematic/drawing.
- ☐ Correct sentence mechanics like cohesion and coherence between sentences and no run-ons
- ☐ Correct paragraph mechanics like topic sentences and placement at breaks between ideas
- ☐ Language is not stilted and jargon is kept to a reasonable minimum.