

ECE311 LAB NOTEBOOK REQUIREMENTS:

The following guidelines are in addition to those given on the first pages of the Bookfactory Lab Notebook.

Labs must be PRINTED in INK (no cursive).

Procedure:

Before the Lab Session:

- 1) Print a table of contents entry for the lab with the date the lab is to be done.
- 2) *Section 1 (Objective/Goal)* will be written. A paragraph explaining what this lab will focus on and the expected results.
- 3) *Section 2 (Procedures/Data)*, Draw a schematic labelling each component and node. Create a table with 4 columns. In column 1, enter the node name (e.g. N1) or component designator (e.g. RE). In column 2, enter the expected/ideal value (e.g. 1KW). In column 3, the measured value will be entered in the lab. In column 4, calculate the %Error with respect to the expected value using:
$$\%Error = [(measured_value - expected_value)/(expected_value)] \times 100\%$$
The labeled schematic and measurement entries in the table provide a clear what is measured.

In the Lab Session:

Section 2, measured values are entered.

Select, Measure, and Record required parameter values in the table (e.g. resistor values).

Build required circuit and make required measurements and record the measured results using a heading consistent with the measurement. As an example, in Part 1 of a lab you are to measure V_{ORMS} and V_{inRMS} using the DMM in Steps 1 and 2 and calculate the voltage gain $A_v = V_{ORMS} / V_{inRMS}$ in Step 3.

This is recorded as:

Part 1:

- 1) Measurement of V_{ORMS}
 $V_{ORMS} = 1.875V_{rms}$
- 2) Measurement of V_{inRMS}
 $V_{inRMS} = 0.335V_{rms}$
- 3) Calculation of A_v
 $A_v = V_{ORMS} / V_{inRMS} = 1.875 / 0.335 = 5.597V/V$

Also in section 2 if applicable: Graphs and waveform plots. **Label axes, pertinent data points, and a title for the graph or plot.**

If a lab procedure cannot be completed due to circuit problems list steps taken to troubleshoot the problem and results for the failure. Try to use time wisely and have all lab notebooks ready to make entries when coming to lab.

In or After the Lab Session (Depends):

Section 3 (Calculations/Questions)

Answer questions and make required calculations for the lab exercise. If you didn't make it through the entire lab answer what you can and make calculations on the measurements you have. In some labs, calculations will be made as you proceed through the lab. If there are significant differences in the measured values to those calculated in the preliminary then determine why, correct problem(s), and measure values again.

Section 4 (Observations)

In this section you will compare the measured values with the expected values using the data measured and found in the preliminary. Explain any deviations found by inspection of %Errors in the component / node voltage values. Use %Error values to show deviation from the expected values.

Follow the guidelines in the BookFactory Lab Notebook:

Pages are to not contain blank areas. A single line is drawn through a blank area on a page.

The lab will be signed (each page but in our case the last page).

The first page of the lab will have a Title, Date lab was performed, your name and the lab station used.

Labs Reports will be photocopies of your work in the lab notebook. Do not photocopy at a reduced size and make certain each page is clear and readable.

Submit labs with a word processed cover page with the Lab Number, Lab Title, Your Name, Data, and Lab Section on it.