

Assignment 1B (30 marks) - Lab Week 3 – Analysis of Simple Series Circuits

Lab Week 3 - Assignment 1B - Quiz
Questions
Quiz

Approximately 2 to 2.5 hours to complete

Due Date: By 11:30 P.M. Friday of Week Four by submitting Lab Week 3 - Assignment 1B - Quiz Questions

Simple Series Circuits

This lab exercise provides with an opportunity to work with some of the basic electrical quantities – Voltage, Current, Resistance and Power. This lab work constitutes 30% of Assignment One's overall mark. Note that the format of this lab is a quiz: **Lab Week 3 - Assignment 1B Quiz Questions**, which you are required to complete and submit by the deadline.

PURPOSE OF LAB:

The purpose of this lab is to confirm your understanding of the course lecture/hybrid material by teaching you how to measure basic electrical quantities using Multisim, having you apply those principles and by analyzing simple Multisim and paper-based electronic circuits.

I highly recommend that you make notes in your Engineering Handbook when viewing the Using the Multimeter in Multisim video and work diligently to understand the concepts contained in this lab, as other assessments in the course will test you on this knowledge.

If you have ANY questions concerning this the lab or the course material to date, please ask during the lab period. Remember – this is a LEARNING process.

MSM Directory Structure

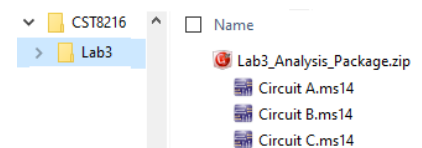
All of the files in this lab should be stored on your hard drive and/or in an external drive in a folder called CST8216\Lab3.

LAB PROCEDURE**Prelab Work – You are expected to do this before you come to the lab**

1. Complete the following Hybrid Lecture: Calculating Voltage Resistance Current and Power (VRIP) in Simple Series Circuits
2. Prior to commencing this lab exercise, download the **Using the Multimeter in Multisim** video and the **Lab3 Analysis Package** file, which are located on Brightspace in the same folder as this document.
3. After unzipping **Using the MultiMeter in Multisim.mp4.zip**, locate and click on **Using the MultiMeter in Multisim.mp4** to view the video, noting that there is an audio component to the video. The video takes you through constructing an Example Circuit, which I urge you to create in Multisim and then illustrates how to perform Resistance, Voltage and Current measurements using the Multimeter.

**In Lab Work**

4. Once you have completed viewing the video, building the Example Circuit and making the required measurements, unzip the **Lab3 Analysis Package**, which contains the files depicted to the right.



Open Circuit A.ms14, Circuit B.ms14, and Circuit C.ms14 in Multisim and use the Multimeter to take the specified measurements in order to answer the Multiple Choice questions in **Lab Week 3 - Assignment 1B - Quiz Questions**.

5. Continuing on with the Multiple-Choice questions, manually calculate the required electrical quantities for Circuit One and Circuit Two, which are questions that analyse paper-based circuits not included in the **Lab3 Analysis Package**.
6. Finally, open Circuit3.ms14 in Multisim and answer the Multiple-Choice questions for Circuit3.ms14 by taking measurements or making calculations as indicated in the questions.

Once you have all questions answered, submit the **Lab Week 3 - Assignment 1B - Quiz Questions** by the deadline, noting that there is only one submission attempt permitted for Assignment Quizzes.