North South University

Department of Electrical & Computer Engineering

Spring 2021

EEE 141L -Electrical Circuits I Lab (Sec: 3)

Class Time: Thursday 02.40 PM – 5.50 PM
Class Room: SAC 504
Faculty member: Dr. Mohammad Abdul Matin (mtn)
Email: mohammad.matin@northsouth.edu
Lab Instructor: Tabia Hossain
Email: hossain.tabia@northsouth.edu

Course Description

This Lab course involves performing experiments based on EEE 141 theory class.

Class & Exam Schedule, Topics and Readings (Tentative):

Sessions	Topics
Week 1	Basic Concepts of Electrical Circuit and Introduction to PSpice https://www.youtube.com/watch?v=6w-CmPxGkz8
Week 2	Ohm's Law, KVL, and Voltage Divider Rule using Series Circuit
Week 3	KCL, Current Divider Rule with Parallel and Ladder Circuit.
Week 4	Loading Effect of voltage Divider Circuit
Week 5	**Quiz1** Balanced bridge network and Y-Δ transform
Week 6	Verification of Superposition Theorem
Week 7	Verification Thevenin's, Norton's and Maximum Power Transfer Theorem
Week 8	**Quiz-2** RC and RL Circuits
Week 9	Lab Setup Exam + VIVA (tentative)
Week 10	Written Exam (tentative)

Course Policy:

1. Regular online class attendance is mandatory because no experiment will be repeated or no makeup for missed labs can be arranged.
2. If you are absent in an online lab class, no lab attendance and lab report marks will be given.
3. Full class schedule and exam dates are already announced.
4. Individual lab report to be submitted by each member. Lab reports are due in the very next class. No late submission allowed.
5. **No plagiarism** in the lab reports will be accepted, resulting in zero in lab reports.
6. The reading materials for each class will be given prior to that class so that student may have a cursory look into the materials.
7. Class participation is vital for better understanding of technological issues. Students are invited to raise questions.

Assessment and Marks Distribution (Tentative):

Students will be assessed on the basis of their overall performance in all the exams, quizzes, Lab report, and class participation. Final numeric reward will be the compilation of:

- **Lab Attendance+ Performance 30%**
- **Lab Reports 20%**
- **Lab Setup + Viva 20%**
- **Quizzes/Final Written 30%**

Report Writing Guidelines (Soft Copy):

After completion of a lab experiment, the Lab Report is due in the next immediate lab class. ***Everyone has to submit individual lab report for each experiment***. **No late submissions allowed**. Below is a detailed description of what each Lab Report must contain:

1. **Cover Page-** All lab reports should have a cover page and the same cover page should be used for all the lab reports. A sample of a cover page will be provided to you.
2. **Objective** – You should briefly write what was the aim of the experiment. In other words, write what you intent to achieve by doing the experiment.
3. **List of Equipment**– A simple list of all the apparatuses and Equipment you used to do the lab experiment via specific software.
4. **Theory** – In this section of the Lab Report, you will specifically write only the things taught during the lecture time of the class by the faculty. This section should be concise and to the point and in your own words. Direct copying from lab report of other group is strictly prohibited. Marks will be given based on your ability to explain what you understood during the online class time.

5. **Circuit Diagram** – Give the circuit diagram for the experiment; it should hand drawn but should be clean and legible.
6. **Results/Data/Readings** – This section of the lab report will contain the data that you have collected practically and it should be presented in a tabular form (make a fresh clean table of the data obtained in class). In case you have to calculate any relevant percentage error or percentage difference from the practical data you should put those here in this section. Draw the necessary graphs showing the relationship between two parameters you varied or used in the lab then you should put the graph in this section. The graph must be hand drawn in a graph paper with proper labels and scale in both axes. Try to make use of at least 70% of the graph instead of using a small section of the graph paper with a small vertical and horizontal scale.
7. **Graphical Analysis:** Explain your graph in a clear and precise manner. For instance, you should be able to explain why a part of a graph rises initially and then becomes constant.
8. **Questions and Answers:** There are a few report questions that you need to answer.
9. **Discussion** –This is one of the most important parts of the lab report. What you write here proves how attentive and careful you were during the lab class. Copying a single line from another person's discussion or from a previous lab report will earn you a straight zero.

   You must focus on these 3 points:

   - What did you learn from the experiment?
   - Write whether the data and graph were exactly how you expected from the theoretical knowledge or the practical results were different from theory.
   - The problems faced during experiment and a legitimate reason for the possible fluctuation in readings, if any. You can also write about the limitations and drawbacks of the experiment.

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LAB REPORT

Course Code:

Course Title:

Course Instructor: Faculty Name

Experiment Number:

Experiment Name:

Experiment Date:

Date of Submission:

Section:

Submitted To: Lab Instructor Name

Submitted By	Score
Student Name and ID: 1. Student Name & ID	