



EEE141L Course Outline Summer 2023

Fundamentals of Electric circuit (North South University)



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NORTH SOUTH UNIVERSITY
DEPARTMENT OF ELECTRICAL & COMPUTER ENGINEERING

Summer 2023
EEE 141L / ETE141L (Sec – 17)
Electrical Circuits I Lab

Course Faculty: Dr. Mohammad Monirujjaman Khan (KMM)

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Office Room: LIB600 [C2]

Office Hours: 09:00 AM - 10:50 AM & 1:30 PM – 2:30 PM (S)
01:00 PM - 4:30 PM (MW)

Lab Section: 17

Lab Timing: S 10:50 PM – 01:30 PM

Room: SAC 504

Course Description

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

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

Lab Classes	Title	Date
Lab class1	Group Formation, Introduction to equipment and components Verification of Ohm's Law	30/07/2023
Lab class2	Introduction to Multisim, KVL, and Voltage Divider Rule using Series Circuit	06/08/2023
Lab class3	KCL, Current Divider Rule with Parallel circuit, Ladder Circuit.	13/08/2023
Lab class4	Loading Effect of Voltage Divider Circuit, Quiz	20/08/2023
Lab class5	Balanced Bridge Circuit and Delta- Wye Conversion,	27/08/2023
Lab class6	Verification of Superposition Theorem	03/09/2023
Lab class7	Verification of Thevenin's and Norton's Theorem	10/09/2023
Lab class8	Verification of Maximum Power Transfer Theorem, Mid Term	17/09/2023
Lab class9	Charging and Discharging of RC circuits, Assignment will be given	24/09/2023
Lab class10	Charging and Discharging of RL circuits	01/10/2023
Lab class11	Practice/Makeup	08/10/2023

Lab class12	Assignment Submission	15/10/2023
Lab class13	Practical Exam and Viva	22/10/2023
Lab class14	Final Exam (Written)	29/10/2023

Tentative Marks Distribution

Attendance and Lab Performance	15%
Lab Report	15%
Quiz	10%
Assignments	10%
MID	15%
Practical Exam and Viva	15%
<u>Final Exam</u>	<u>20%</u>

Rules

- Arrive in the class on time. Late coming may result in marks deduction.
- Do not leave before the completion of the lab work assigned by the lab instructor. Even then, you need permission from the lab instructor to leave before the end of the class.
- Do not go to the washroom without permission from the lab instructor. Going to other places i.e., the cafeteria, is not permitted.
- Do not talk with the members of other groups.
- You can talk with the members of your own group and the lab instructor about the things related to lab work and do not gossip. Keep your voice low so that it doesn't disturb others.
- Do not talk using a mobile phone. Other use of mobile phones is prohibited.
- Copying of lab reports is not accepted.
- All report submissions are due at the beginning of the class.
- No Late Submissions will be accepted, whatever may be the reason.

Lab Report Writing Format

- Cover page
- Objectives
- Apparatus List
- Circuit Diagrams
- Data Table
- Graphs (If may require in the experiment)
- Result Analysis
- Questions and Answers
- Discussion
- Attachment (Signed lab sheet) + Simulations

Report Writing Guidelines

After completion of a lab experiment, the lab report is due in the next immediate lab class. Each group has to submit a single lab report for each experiment, and every group member must have a contribution to it. Late submissions should be 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. Objectives** – You should briefly write what was the aim of the experiment. In other words, write what you intend to achieve by doing the experiment.
- 3. Apparatus List** – A simple list of all the apparatuses and components you used to do the lab experiment.
- 4. Circuit Diagrams** – Draw the circuit diagrams for the experiment; it should be drawn by pencil but should be clean and legible.
- 5. 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).
- 6. Graph** – Draw graphs if necessary and 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
- 7. Result Analysis** – This is an important part of the report. You have to explain the results whether they met your objectives or not.
- 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 4 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 the 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. You also provide any suggestions that you deem fit.
- 10. Attachment**– Finally, you must attach the data sheet signed by the instructor in the lab.