

ELEG 3211L (Spring 2007)

ELECTRONICS I LABORATORY (May Be Changed as Needed)

Co-requisite: ELEG 3213-Electronics I.

Text: The course information, pre-lab and lab report guideline, lab rules, and the description of lab experiments can be found in the following website:

<http://www.ee.uark.edu/assignments/>

Please download the needed files. Read the materials carefully to help you succeed in the lab and consequently in the course. Because of a possible access failure of the network, printing out all the lab materials in advance is highly recommended.

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Instructor: Ahmed Hassan, Graduate Teaching Assistant, Department of Electrical Engineering

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Office: BELL 3126

Office Hours: Decided in Class.

Lab Room\Time: BELL 3139, Wednesday (2:30 – 5:20 pm)

Goals:

- To understand the operation of basic electronic circuits
- To be able to design, simulate, and measure (or test) the circuits
- To help you communicate your work by writing technical lab report

To be successful on this course:

- A) Communicate your work effectively by writing concise and clear Lab-Reports
 - Read the Lab-Report guidelines posted in the website mentioned above.
 - Search written materials on how to write lab-reports.
 - If you are not sure what should be included, Please ask me.
- B) Observe the Lab Rules and follow them as a courtesy to your peers.
 - Submit pre-lab and lab reports on time.
 - Attend the lab session on time and do not leave until you finish the needed work.
 - After finishing from the experiment, please clean after yourself. Put everything back in order and make sure your lab bench is clean and clear.
- C) Schedule enough time to work on the pre-lab and lab-reports.
- D) Learn PSPICE simulation program during the first week and prior to the first experiment, if you do not know this program or if you need help to start the process, please see me as soon as possible.

Grading Scale:

Safety Test 100

100

5 Pre-labs x 50 points	---	250
5 Labs x 50 points	---	250
Lab conduct	---	50
 Total	---	 650
 A	---	 90 - 100 %
B	---	80 – 89 %
C	---	70 – 79 %
D	---	60 – 69 %
F	---	below 60 %

*The grading scale above will be strictly followed - no exceptions. If a student does not show up for a lab meeting, he/she will be given a zero on the lab. A student will receive an 'F' in the lab if he/she misses more than one lab. Arrangements will be made for a missed lab if a student provides a satisfactory reason for missing the lab. **No Late Reports will be accepted without a satisfactory reason.***

Schedule:

Date	Assignments
01/24	Safety education
01/31	
02/7	Pre Lab # 1 is due(02/6)----Lab # 1
02/14	Safety Test, Lab #1 report is due.
02/21	
02/28	Pre Lab # 2 is due-(02/27)---Lab # 2
03/7	Pre-Lab3 is due-(03/6)-----Lab # 3
03/14	Lab #2 report is due
03/21	Spring Break
03/28	Lab #3 report is due
04/4	Pre Lab # 4 is due-(04/3)---Lab # 4
04/11	Lab # 4 report is due,
04/18	
04/25	Pre Lab # 5 is due-(04/24)---Lab # 5
05/2	Lab # 5 report is due,

Experiments:

Safety Education

Lab 1 --- Characteristics of op amp

Lab 2 --- Application of op amp

Lab 3 --- Diode behavior and application

Lab 4 --- MOSFET characteristics and Common source amplifier

Lab 5 --- BJT characteristics and Common emitter amplifier

ELECTRONICS LABORATORY RULES AND PROCEDURES

In the Lab:

- Show up on time. Students with persistent tardiness will be deducted 10% for being late to lab.
- Always obey safety rules, and maintain a safe working environment. Keep the workbench clutter to a minimum.
- You need to read the manuals of equipment very carefully. You need to know how to fully operate an oscilloscope, multi-meter and other equipment. If the equipment are damaged by incorrect operation, 10% score will be deducted.
- Be thoughtful of others. Please don't speak loudly.
- When you go into the lab, sign up check in sheet first. So we can have a record of your attendance.
- If your experiment needs to use the oscilloscope, turn it on to warm it for a while. If necessary you need to calibrate it for gaining good waveforms.
- If your experiment needs to measure both current and voltage alternatively, be sure to change the rotary switch correctly in accord with the measure of current and voltage.
- Check the tool box, and verify that none of the equipment is missing or in malfunction. If you find something wrong, report to the TA. You are not allowed to change the equipment on your work station without the permission of TA. I will check the equipment with you after you have done experiments. If I find something wrong, you will be deducted 10% points.
- Before leaving, ask the TA check your workbench, then power down the computer and other equipment, then turn the main station switch off.
- Equipment is going to fail. When it does, report it to the TA. This way the equipment does not go back into circulation until it is fixed.
- Leave the workbench clean when you leave. If the bench is untidy after the experiment 10 % of the points will be deducted.
- When you are performing lab, if the power supply turns off automatically, you must check your breadboard, your wires, and your workbench carefully, find out the problem, then you can turn it on

Pre-Labs:

- Be sure to include all of the information requested. If the pre-lab asks for a simulation, give a simulation and so on.
- Pre-labs must be completed and the pre-lab report should be turned in before the due date. You will only have 2 hours and 50 minutes to perform the lab. So you need to know exactly what you are going to do before you begin.
- Pre-labs should be turned in **ONE DAY** before the day of the lab as shown in the above table. Pre-Lab reports will be deducted 10% for late submits. No Pre-Lab reports will be accepted after the day of the lab. Pre-labs reports should be turned in the TA's office by 4:00 pm on the due date. If the TA is not in the office (**BEC 3126**), slide to pre-lab under the door. Be sure to staple the pre-lab report
- You need to turn in a paper copy of your report, I only grade your paper copy.
- You need to email me (**amhassan@uark.edu**) an electronic copy of your report, which is edited by using WORD. I will keep them as record. Your electronic copy should be named as:

CourseName_YourFullName_Prelab_index

For example, my name is Ahmed Hassan, so my first pre-lab report should be named as: ELEG3211L_AhmedHassan_Prelab_1.doc

Fail to submit the electronic copy or not follow the name rule will be deducted 10% points.

Lab Reports:

- Lab reports should be turned in the TA's office by 4:00 pm on the due date. If the TA is not in the office (**BEC 3126**), slide to pre-lab under the door. Be sure to staple the Lab report. Lab report will be deducted 10% points for late submit. If you turn in your lab report late until I had graded the others, it will not be graded, and your score will be zero.
- Your lab report should be edited by using WORD and follow the format of the lab report template. You need to turn in a paper copy of your report; I only grade your paper copy.
- You need to email me (**amhassan@uark.edu**) an electronic copy of your report. I will keep them as record. Your electronic copy should be named as:

CourseName_YourFullName_Lab_index

For example, my name is Yongfeng Feng, so my first lab report should be named as:

ELEG3211L_AhmedHassan_Lab_1.doc (Electronics Lab I)

Fail to submit the electronic copy or not follow the name rule will be deducted 10% points.