Carleton University

ELEC 3509
Electronics II

Lab Guidelines

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General Lab Notes:

- Students will work individually.
- Students must attend the lab for the report to get marked otherwise you get a 0.
- Once you decide which lab to attend, you **must stay in that section**.

Lab reports:

- Each student will submit **1 report per lab**.
- Reports are due **by 3:00pm, seven days after the lab has been completed.** The report should be in PDF format, and the submission is done by uploading the file onto the cuLearn course web site.
- **TIP:** Do not wait until the day before to start your lab. Remember, that **you will also have a PRELAB due for your next lab the same day.**
- Late Reports:
    - Late reports will lose 30% if submitted within one week after deadline, while later ones will receive a grade of zero. However, you should still submit the report in order to pass the course, even though you do not get grade for the report.
    - If your lab is late due to illness, a Doctor's note will be required and an extension can be granted.

- It is ultimately YOUR responsibility to submit the report on time, and ensure that the report submitted is your intended version.
- Regardless of whether the lab is late or not, **all labs (including reports) must be completed to pass the course**. Repeat, if you are missing a lab, you will **NOT** pass the course.

Pre-labs:

- The labs in this course are heavily weighted in technical content, and thus students are expected to keep up in the course material. To assist in this, all labs have **assigned pre-lab sections** which must be performed satisfactorily.
- The pre-lab will be checked at the beginning of each lab period. Marking is on an all or nothing basis. If a good effort has been made full marks will be awarded even if there are errors, otherwise nothing is awarded.
- **Pre-labs are to be done before the lab period**. The pre-lab calculations are often necessary to proceed with the lab, and the labs are lengthy enough on their own that they will require your full 3 hours. Attempting to perform the pre-lab during the lab period will result in failure to complete in time.
- **Hint: consider the pre-labs as assignments** and start work on them well in advance of the lab. This will give you a chance to ask questions and make your actual lab time more efficient.
- All pre-lab material, including calculations and explanations, is to be included in the report, incorporated in a way which is conducive to logical flow. Any calculations performed are to be accompanied by explanation identifying what is being calculated. The assumption is that the reader is not aware of the specific questions being asked.

Conducting the Lab:

- For this term, the labs will be carried out remotely through the internet. All the labs will be done by computer simulations. The software for the simulation will be OrCAD/PSpice, available on the computers in the Department of Electronics (DOE) lab rooms. You need to have an account on the DOE computers, and be able to use DOE's computers through remote access.
- The OrCAD/PSpice software allows you to place components (resistors, capacitors inductors, souces, diodes, transistors, etc) into a schematic window, use wires to connect the components, and perform simulation to obtain virtual "measurements" (i.e., simulated values) of circuit responses. Please try the software and be able to use it in advance of the labs.
- **We consider that, due to the requirements to get into an engineering program, and due to your presumed experience in order to get to a third year course, that you are**

capable of conducting the lab on your own, with the resources provided. We will assist you as much as possible but ultimately, you are responsible for getting the work done.

Lab Checkout:

- Prior to leaving, each student must have his/her experiment set-up and results checked by the lab TA. This helps ensure that egregious errors are caught before using them to write a detailed report.
- Like pre-lab checks, marks are given on an all or nothing basis, depending on whether the lab is finished or not.
- No more labs will be checked out after the end of the period and students will be asked to leave.
- You don't need us to sign anything on your way out. We will have our own records as to whether or not you finished. By extension, you should not leave without us checking your work if you want to get your lab checkout marks.
- Certain labs (e.g. Lab 2, 3 and 4) require you to **demonstrate a working circuit** in order to check out.
    - Therefore if you miss your checkout at the end of the lab, you will need to arrange an alternate time to demo your circuit to a TA.
    - Late demos will get a check out mark of zero, but you **MUST demo** otherwise your lab mark is **zero.**

Lab Marking:

- If you have an inquiry regarding your mark, send your TA an e-mail. If your issue cannot be resolved then you may request a meeting. Do **NOT** confront your TA in the lab and demand an explanation on the spot. You should be spending your time on the current lab.
- At any time, we reserve the right to remark labs if we feel circumstances warrant it (such as a technical error in the lab notes, a concept that was not explained fully in the lectures, errors in marking, etc.). In such cases, if your mark changes, we will inform as soon as possible.

Marking Scheme:

- There is no required format for your lab reports. They are to be semi-formal engineering reports where you clearly state what you have done and display your results.
- For the explanation and justification of your design, you must show the calculations used to derive schematics and component values.
- Compare predicted performance to observed results where appropriate.

- Most of your pre-lab work will be incorporated in the lab. The calculations and their explanation must flow together.
- Your original pre-lab calculations (the ones you showed us in the lab) do not need to go into the main body of your report. Such originals should be included in an appendix. However vital content of the prelab should be re-typed into the main body of your report.
- Any use of graphs and plots is to be accompanied by detailed explanations showing how you got the results, and more importantly, what they mean. Whenever possible, you must compare measured results with calculated values, simulated value or the required specifications, ideally graphically on the same plots as your measured values.
- Note that an appendix by definition is something that is unnecessary. Anything you put in any appendices of your report is, by extension, something that is ancillary to the material in your report. Therefore, do not put vital discussion, calculations, plots or anything that you might want marked inside an appendix.

Lab Reports and Academic Integrity:

- Please treat the lab report as an individual work. Do not copy contents (such as sentences, graphs, tables, data, results etc) between your report and other student's report.
- The contents of the lab report should be created by yourself, and with you as the single author. Do not add another student as co-author or collaborator, and do not copy contents from the other student.
- If you are takinig this course again, please do the lab again, and write the report again. Specifically, do not copy contents from your old reports written in previous semesters.