

DEPARTMENT OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE  
MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
CAMBRIDGE, MASSACHUSETTS 02139

6.101

***Laboratory and Report Guidelines***

***Philosophy***

As you know, 6.101 is a laboratory class. Therefore, the bulk of your learning will be done in the laboratory through the process of designing, building, analyzing, debugging, and testing various analog circuits. Your responsibility in the laboratory exercises and in the final project is not only to learn analog design and technique, but also to convey what you have learned to the staff with a well-written and well-organized lab report and regularly scheduled lab checkoffs. ***We do not expect you to work in a vacuum. We encourage one-on-one teaching by the course staff in the laboratory.*** It is hoped that the reports will help you organize and evaluate what you have learned, as well as inform the staff your depth of understanding of the material.

We will attempt to guide you in the answering of questions in the lab handouts, but some additional thought on your part is in order in the preparation of your reports:

- Don't answer a question with a simple "YES" or "NO".... some explanation is always needed. A simple equation, drawing, or back-of-the-envelope calculation is always useful to illustrate your point.
- A picture is worth a thousand words! Your pictures don't have to be of presentation quality, but should have labeled axes, and waveforms with minimum and maximum values, breakpoints, etc. clearly labeled.
- This class is designed to emphasize intuition and modeling of analog circuits, so make lots of approximations, and justify them! We never want you to get lost in the intricacies of mathematics.....we never want to see answers to the fifth decimal place. Remember  $\sqrt{10} \approx \pi \approx e \approx 3$  as a first-order engineering approximation!
- Consider the audience: you need to use explanations in your lab reports that can be understood by another electrical engineer, but not necessarily someone who has done this particular lab before.

***Lab Checkoffs and Late Policy***

Some of the labs will require a scheduled checkoff with the teaching staff. The purpose of the checkoff is not to intimidate you, but to facilitate more one-on-one interaction with you. During the checkoffs, you will be examined on your over-all understanding of your circuitry, including both theoretical and practical considerations. The physical layout of your circuitry will be examined. At that time you might be asked to present measurements on your circuits.

***Experience has shown that students often leave final design and debugging of their circuits to the last minute. The checkoff time is not the time to be debugging your circuit.*** If you finish early, we will check you off early, but don't bother asking to be checked off late! Also, the lab reports will be due at a specific hour; late reports will not be accepted without a medical excuse or similar. Lab reports for labs that require a checkoff will not receive credit for the part requiring a checkoff if the checkoff was not completed.

### ***Interaction with the Staff***

***It is expected that you will work with the teaching staff at regularly scheduled office hours, or when you can find us. This is another opportunity for us to teach you, and it will help us to evaluate your understanding of the material and to determine how well we are teaching the fundamental concepts.*** This will be of great importance in our evaluation of your progress in the laboratory exercises and of the final project.

As questions arise, lab hints will be posted on the blackboard outside the TA office.

### ***Final Project Reports***

The final project will require both a scheduled oral report, and a substantial written report. The format of the final report will be discussed later in the term.

### ***Staff Lab Office Hours***

Both Ron Roscoe and the TA's will have lab office hours and these will be posted on the TA office door. Other hours by appointment or when you can find us!