Objective

The primary purpose of laboratory sessions is to reinforce concepts presented in the lectures. An important secondary purpose is to expose students to the various practical issues encountered in the design and construction of circuits, including package geometry, weight, temperature effects, limited availability of devices, and so forth. In the laboratory section of the course you will be assigned electronic design tasks that usually will need to be accomplished within a week; however, there will be a few tasks that will require multiple weeks. A major goal of the laboratory section is to allow you to engage in active learning experiences that require you to apply the concepts covered in the course to actual circuits.

Lab Meetings

Attendance at laboratory meetings is mandatory each week the University is in session. The lab is scheduled from 8:00 am until 10:52 am on Thursdays; however, as explained below, you will initially be required to be present starting at 10:00 am. Attendance from 8:00 am until 10:00 am will be optional, although there will be many significant advantages for you to attend most, if not all, of the lab period. An unexcused absence will result in a lab grade of zero for that week.

Lab Groups

Most lab groups will consist of two-person teams, but one team will have to consist of three people if an odd number of students are enrolled in the lab section. Lab groups will be randomly assigned for each new lab exercise, and the pairings will be listed in the associated handout.

Structure of Lab Exercises

Each week a handout will be posted at the course web site outlining the activities scheduled for the upcoming lab exercise. Generally, you will be given an open-ended design and/or analysis task that must be completed by a specified time. This will almost certainly require significant preparatory work before the lab session. If you wish, you may attempt to complete the full exercise within the 8:00-10:52 am session, but you risk running out of time if you do.

The lab exercises will usually require you to demonstrate a functioning circuit and/or an appropriate set of measurements. The demonstrations will take place during the 8:00-10:52 am session on a first-come, first-served basis. Thus, you should strive to demonstrate your work as soon as possible. If you wait until 10:45 am, you run the risk of missing the deadline. If demonstrations are concentrated at the end of the session on a regular basis, then the beginning of the mandatory attendance period (initially 10:00 am) will be moved to an earlier time.

I will be available during office hours and throughout the week as time allows to provide assistance. Please note that the assistance will be advisory but not confirmatory. For example, I will not answer questions such as “Does this look right?” or “Does this answer look reasonable?” You will need to devise means of answering those questions on your own.

Lengthy reports will not be required after each lab exercise, but some type of reporting of results will be assigned. Specific requirements will be outlined in the handouts. The written work will usually be due a few days after the lab session. You must properly credit any intellectual property (including any diagrams and/or text copied from lab handouts) that you use and that you have not generated yourself.
Grading

The laboratory component comprises 15% of the overall course grade for ELEC 351. A lab grade will be assigned for each lab exercise based on criteria listed on the associated handout. These could include preparatory work, the degree to which the circuit and/or test procedure satisfies specifications, and reports of results. Grading criteria will vary from week to week and will depend on the nature of the lab exercise but will always be stated clearly in the handout. Grades will be weighted by the number of weeks required to complete the lab exercise (usually one week, but occasionally two). No lab grades will be dropped for the purpose of computing the overall lab grade.

Reports and demonstrations that are submitted or occur after the deadline will have a grade deduction applied. Specific grade deductions will be unique to each lab exercise and will be specified in the handouts.

Copying of another group’s written work and design and/or test procedures is considered plagiarism and is not acceptable. Violations of the University’s academic responsibility policy will be referred to the Board of Review.

Any student who leaves a lab session without prior permission before his/her group is finished with their work will receive a 20% grade penalty for that session. Because your lab partner(s) depends on your presence, significant lateness to a session will result in a grade reduction proportional to the amount of time missed, quantized in 10% increments. If you know you will have to miss an upcoming lab for a valid reason and you wish your absence to be excused, you must notify me at least 48 hours in advance.

Lab Notebook

You are not required to maintain a formal laboratory notebook for this course. However, doing so is highly recommended to help you organize and keep track of recorded data, test procedures, and results. A record of lessons learned in the lab might help you considerably as you study for exams and as you prepare for subsequent lab exercises.

Web Site

Most of the handouts, instructions, and other resources for the lab sessions will be available at the following site:

http://www.facstaff.bucknell.edu/dkelley/elec351/lab/lab.html