

LABORATORY POLICY AND GUIDELINES 0

ELECTRICAL ENGINEERING 20N
Department of Electrical Engineering and Computer Sciences
University of California, Berkeley

1 Introduction

Welcome to the laboratory component of EE20N, held in 105 Cory Hall. These lab sessions are meant both to supplement and to augment material learned in lecture and discussion sections, while tying important concepts with hands-on practical applications. We will use LabVIEW as the educational vehicle of EE20N this semester, and we will devote the first few labs to exploring its concepts and features. As the semester progresses, we will slowly shift focus away from LabVIEW and on to the important theoretical foundations of the class. Eventually, we will move into the practical arena of digital signal processing, and implement solutions to real-world design problems. So, sit back and enjoy the ride!

2 Computer Accounts

1. You will be issued an instructional computer account during the first lab. *You are responsible for keeping your account information safe*, as you will only be assigned one computer account throughout the semester.
2. When you log in to a computer in 105 Cory Hall using your assigned account, you will be prompted to register. You only have to fill this out once, even though you may be prompted multiple times.
3. Press `Ctrl-Alt-Del` (once!) to change the password of the account to one that you will remember.
4. Your account is assigned hard drive space on the `U:` network drive: **please save all of your work on the `U:` drive**. When you log off and log back in, the local hard drive on the computer is cleaned out. A corollary of this is that every time you log off, all of your files stored locally are deleted. As a result, if you need your data and files to persist, please save your work on the `U:` drive.

3 Staff

The teaching assistants for the class this semester and their contact information is given below. Each lab section will be assigned one (occasionally two) teaching assistant, who will be considered your TA for the course. As such, the TA will be your second line of defense when faced with problems in either the course material or the lab material, your study group being your first. E-mail will be your primary mode of communication with the course staff, whereby you can either raise short questions, or make appointments to discuss more involved problems.

In the last hour of every lab, another TA will join your official lab TA(s) to help check you off. There will also be lab assistants to help you as you work through the lab exercises.

| Name | E-mail Address |
|-----------------|--|
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4 Lab Structure

Except for the first three labs, and unless otherwise specified, each lab session will have three components:

4.1 Pre-lab

The pre-lab component usually consists of a short reading or theoretical revision, followed by a few questions, to help you get started on approaching and understanding the lab material. You will turn in your answers either on paper, or online using [bSpace](#). Even though pre-labs are generally short and should take you no more than an hour each, please do not attempt to complete them during the lab session itself: that time is reserved specifically for the in-lab component.

The pre-lab is due *10 minutes after the beginning of your lab session*; in colloquial terms, your pre-lab is due at Berkeley time. **Failure to complete the pre-lab will result in no points for that particular lab.** If the pre-lab component requires a [bSpace](#) submission, please do not wait until (literally) the last minute to submit: [bSpace](#) will immediately close the submission system at the exact minute, and uploading your submissions will take time. Late submissions will result in a significant reduction in points for that lab, except in unusual circumstances. We enforce this to ensure that you finish your in-lab component on time.

4.2 In-lab

The in-lab component is performed inside the EE20N laboratory at 105 Cory Hall. A lab guide will accompany each lab session, containing instructions and exercises. The lab guide will also contain a few questions, based off of the theoretical material underlying the lab.

You will be assigned a score for the in-lab component based on checkoff. As you work through the exercises, you will produce LabVIEW files, known as **virtual instruments (VIs)**. You will also answer the questions in the lab guide. Please save your virtual instruments and your answers for checkoff. When you have completed the in-lab, append your name (and your partner's name) to the checkoff list that the lab TA will maintain on the whiteboard. As part of the checkoff, you will be asked to show some of your VIs and to explain your answers to the questions posed in the lab guide; your TA will also ask you additional questions to test your understanding of the lab material.

You are required to work in pairs. TAs will not check people off individually, except in unusual circumstances. You both may choose to work separately on two adjacent workstations, consulting regularly with each other, or you may choose to work on the same workstation. Although you will be working in pairs, both of you are required to have a thorough understanding of the entire lab and you are expected to be able

to answer any questions directed towards either one of you during checkoff.

If you are not able to complete the in-lab component on time, the TA will allow you to check off during the beginning of the next lab session. However, there will be a 20% late penalty.

4.3 Post-lab

The post-lab component is performed outside of regular laboratory hours. It builds on the material covered during the in-lab component, and provides questions and exercises for extra practice. Often, the post-lab component either augments the in-lab component, or extends the in-lab component in a different direction. Post-labs are also done in pairs, preferably with the same pair you worked with during the in-lab. However, only one person in the pair needs to make a submission; always clearly indicate both people in the pair. You will turn in your answers either on paper, or online using **bSpace**. *Cross-lab collaborations are not allowed.*

Post-labs are non-trivial and should take you around two hours to complete, so start early! Some of the longer post-labs are designated *mini-projects*, and there will be at least two of them in the semester.

As with the pre-lab, the post-lab is due *10 minutes after the beginning of your next lab session*; in colloquial terms, your post-lab is due at Berkeley time. Hence, in later lab sessions, both the post-lab component of the previous lab and the pre-lab component of the current lab will be due. If the post-lab component requires a **bSpace** submission, please do not wait until (literally) the last minute to submit: **bSpace** will immediately close the submission system at the exact minute, and uploading your submissions will take time.

5 A Word About Typefaces

In the lab guides, please note that anything printed using this typeface can refer to multiple things, depending on context: *a) text that you should type, b) an option that you should select, c) a structure that you should use, or d) a keyboard combination*. To emphasize the important ideas and concepts, certain terms will also be written in the margins for easy reference.

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THEOREM

The lab guides will also contain boxes such as these, which will highlight hints and tips that you may find useful, or certain subtleties to consider.

6 Working from Home

The post-lab and pre-lab components will mostly be done in LabVIEW. The LabVIEW software will be available for you to purchase for \$20. Details on how to purchase will be announced when the system is ready.

In the absence of LabVIEW on your computer, you can work on a department computer lab (such as 105 Cory or 199 Cory). In order to access Cory Hall after regular working hours, however, you will need to ask for cardkey access at 253 Cory.

Alternatively, on a Windows machine, you can use a Remote Desktop connection to access an instructional machine. The procedure is as follows (for a machine running Windows Vista):

1. Go to Start → All Programs → Accessories → Communications → Remote Desktop Connection.
2. In the Remote Desktop Connection window, type any of the following in the Connect To textbox: `iserver1.eecs.berkeley.edu`, `iserver2.eecs.berkeley.edu`, `iserver3.eecs.berkeley.edu`. These represent three instructional machines that you can connect to, which have LabVIEW installed.

3. You will now be directed to a desktop on a remote machine. In the login window, type the username and password associated with your instructional account and select EECS in the Domain drop-down menu.
4. When you finish using LabVIEW, it is important that you log off in a timely manner. Documentation for this process can also be found at <http://inst.eecs.berkeley.edu/connecting.html#labs>.
5. If you run into any technical difficulties, please contact the Instructional Support Group (ISG) at inst@eecs.berkeley.edu.

7 Assorted Guidelines

1. As far as possible, please read the lab guide ahead of time. Definitely read and complete the pre-lab component, if present, before your lab session.
2. If you need to be late for a particular lab session, or if you cannot attend your regular lab session one week and would like to attend another lab session, please notify the corresponding lab TAs *48 hours prior*.
3. You may work on the lab computers at any time. However, if there is another lab session in progress, you may be asked to leave your workstation to accommodate students enrolled in that lab session.
4. Please read the lab guide carefully; most, if not all, of what you will need is given in the lab guide for the current labs or in previous labs and in supplementary material.
5. If any of the instructions do not make sense, however, **please ask your lab TA immediately**. Like any other tool, LabVIEW can get confusing, and it is to your advantage to clear any such confusion as and when it arises. As the semester progresses, the labs build upon each other, and we will assume that you can perform certain tasks in LabVIEW. We will accordingly reduce the details of instructions, allowing you to perform tasks in whatever manner you see fit.
6. Do not expect questions not related to the lab (for instance, regarding the homework) to be answered while a lab is in progress. Your TA may find time to answer these questions, but if there are other students who need to get checked off, or who need help on the lab, they will be given higher priority. You may wish to wait till the end of lab or till office hours to ask these questions.

8 Comments? Suggestions?

The labs are undergoing constant revision. If you have any suggestions to make regarding the labs, please do not hesitate to let your lab TA know, or submit your feedback online using this [Google form](#). This link is also available on the course website.

We appreciate your feedback: the current iteration and arrangement of the labs was built essentially using several semesters worth of student feedback.